



7450 Ethernet Service Switch  
7750 Service Router  
7950 Extensible Routing System  
Virtualized Service Router  
Release 24.7.R1

## Clear, Monitor, Show, and Tools CLI Command Reference Guide

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# 1 Getting started

This guide contains command descriptions for the common operational **clear**, **monitor**, **show**, and **tools** CLI commands that are used to manage the SR OS in either the classic CLI or the MD-CLI.

The output of the common operational commands is always the same in the classic CLI and the MD-CLI. The command names and syntaxes of the common operational commands in the classic CLI and the MD-CLI are also compatible. The MD-CLI ? help and command completion only displays parameters that are valid next in order based on what has been entered, while the classic CLI displays all parameters that can be entered out of order. Commands in the MD-CLI can be entered out of order by entering the complete command and parameters without using command completion.

This guide does not include any other classic or MD-CLI commands. These commands are documented in the *7450 ESS, 7750 SR, 7950 XRS, and VSR Classic CLI Command Reference Guide* and the *7450 ESS, 7750 SR, 7950 XRS, and VSR MD-CLI Command Reference Guide*.



**Note:**

This guide generically covers Release 24.x.Rx content and may contain some content that will be released in later maintenance loads. In addition, some SR OS features are platform-specific and may not be available or visible on all platforms. See the SR OS R24.x.Rx Software Release Notes, part number 3HE 20152 000x TQZZA, for information about the supported features and applicable platforms in each load of the Release 24.x.Rx software.

The full set of CLI commands supported by the SR OS is documented in three related guides that are listed in the following table.

*Table 1: Documentation for SR OS CLI commands*

Guide title	Classic CLI commands	MD-CLI commands
<i>7450 ESS, 7750 SR, 7950 XRS, and VSR Clear, Monitor, Show, and Tools CLI Command Reference Guide</i>	All <b>clear</b> , <b>monitor</b> , <b>show</b> , and <b>tools</b> commands	All <b>clear</b> , <b>monitor</b> , <b>show</b> , and <b>tools</b> commands
<i>7450 ESS, 7750 SR, 7950 XRS, and VSR Classic CLI Command Reference Guide</i>	All other commands	—
<i>7450 ESS, 7750 SR, 7950 XRS, and VSR MD-CLI Command Reference Guide</i>	—	All other commands

## 1.1 Platforms and terminology



**Note:**

Unless explicitly noted otherwise, this guide uses the terminology defined in the following table to collectively designate the specified platforms.

Table 2: Platforms and terminology

Platform	Collective platform designation
7450 ESS-7	All
7450 ESS-12	
7750 SR-1	
7750 SR-1-24D	
7750 SR-1-46S	
7750 SR-1-48D	
7750 SR-1-92S	
7750 SR-1x-48D	
7750 SR-1x-92S	
7750 SR-7	
7750 SR-12	
7750 SR-12e	
7750 SR-a4	
7750 SR-a8	
7750 SR-1e	
7750 SR-2e	
7750 SR-3e	
7750 SR-1s	
7750 SR-1se	
7750 SR-2s	
7750 SR-2se	
7750 SR-7s	
7750 SR-14s	
7950 XRS-20	
7950 XRS-20e	
7950 XRS-40	
VSR	
VSR-NRC	
7450 ESS-7	

Platform	Collective platform designation
7450 ESS-12	
7750 SR-1	7750 SR
7750 SR-1-24D	
7750 SR-1-46S	
7750 SR-1-48D	
7750 SR-1-92S	
7750 SR-1x-48D	
7750 SR-1x-92S	
7750 SR-7	
7750 SR-12	
7750 SR-12e	
7750 SR-1-24D	
7750 SR-1-46S	
7750 SR-1-48D	
7750 SR-1-92S	
7750 SR-1x-48D	
7750 SR-1x-92S	
7750 SR-7	7750 SR-7/12/12e
7750 SR-12	
7750 SR-12e	
7750 SR-7	7750 SR-7/12
7750 SR-12	
7750 SR-a4	7750 SR-a
7750 SR-a8	
7750 SR-1e	7750 SR-e
7750 SR-2e	
7750 SR-3e	
7750 SR-1s	7750 SR-s
7750 SR-1se	
7750 SR-2s	

Platform	Collective platform designation
7750 SR-2se	
7750 SR-7s	
7750 SR-14s	
7950 XRS-20	7950 XRS
7950 XRS-20e	
7950 XRS-40	
VSR	VSR
VSR-NRC	

## 1.2 Command tree

The SR OS CLI command tree is a hierarchical inverted tree. The highest level is the root level. Below this level are other tree levels with the major command groups; for example, **show** commands and **tools** commands are levels below root.

In the tree, you can click a command to link directly to the command description.



**Note:**

Commands that are listed in the tree but are not linked to an associated description are available on one or more platforms but are not currently described in the guide.

## 1.3 Command descriptions

Command descriptions are listed in alphabetical order by command name.

The following figure shows an example of a command description.



Figure 1: Command description example

**policers**

- Syntax**     **policers**
- Context**     [Tree] (show>app-assure>group>policy>aa-sub policers)
- Full Context** show application-assurance group policy aa-sub policers
- Description** This command displays policer configuration information.
- Output**     The following is an example output for the **policers** command.

**Sample Output**

```
A:cpm-a>show>app-assure>group>aa-sub# policers
=====
Application-Assurance Subscriber Policar Summary
=====
AA-Subscriber      : Alex (esm)
-----
Type: single-bucket-bandwidth Direction: subscriber-to-network
AQP  Policar                      Resource Exceeded?
-----
61   SuspectUp_policar             N
-----
Type: single-bucket-bandwidth Direction: network-to-subscriber
AQP  Policar                      Resource Exceeded?
-----
62   SuspectDown_policar           N
-----
Policar usage counts:
single-bucket-bandwidth
  subscriber-to-network  1   out of   32
  network-to-subscriber  1   out of   32
dual-bucket-bandwidth
  subscriber-to-network  0   out of    1
  network-to-subscriber  0   out of    1
flow-count-limit        0   out of    8
flow-rate-limit         0   out of    8
=====
A:cpm-a>show>app-assure>group>aa-sub#
```

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The following table describes the fields that may be shown for a command. Not all fields are applicable for all commands.

Table 3: Command description fields

Field	Description
Command Name	Name of the command
Syntax	Command syntax required to execute the command. For further information about command syntax, see the <i>7450 ESS</i> , <i>7750 SR</i> , <i>7950 XRS</i> , and <i>VSR Classic CLI Command Reference Guide</i> or the <i>7450 ESS</i> , <i>7750 SR</i> , <i>7950 XRS</i> , and <i>VSR MD-CLI User Guide</i> .
Context	Path to the command as it is displayed in the CLI prompt. Clicking on [Tree] links to the command in the CLI tree.
Full Context	Complete contextual path to perform the command
Description	Description of the command functionality and any restrictions
Default	Command default value

Field	Description
Parameters	Descriptions of command parameters
Values	Values allowed for the parameter
Default	Parameter default value
Platforms	Hardware platforms on which the command is available. See <a href="#">Platforms and terminology</a> for more information about the platforms. <b>Note:</b> Some SR OS features are platform-specific and therefore may not be available or visible on all platforms. See the SR OS R24.x.Rx Software Release Notes, part number 3HE 20152 000x TQZZA, for information about platform support.

The **monitor** and **show** commands may also show command output and a description of the fields found in that output. Command outputs shown in this guide are examples only; actual displays may differ depending on supported functionality and user configuration.



**Note:**

All options for enumerated types and numerical ranges are listed in the command descriptions; however, not all options or ranges are valid on all platforms.

## 1.4 Navigational aids

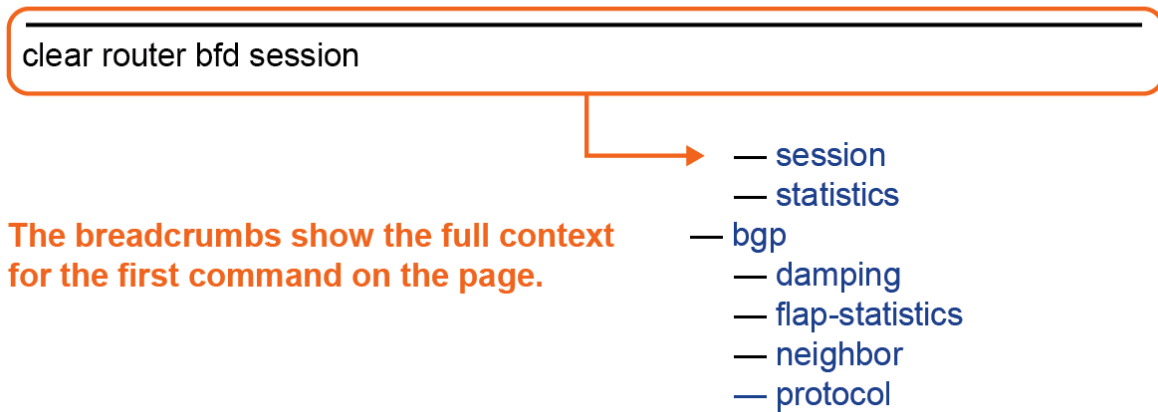
The following aids help you navigate the guide and find specific commands.

### 1.4.1 Context path

In the CLI tree section, the complete contextual path to the first command on the page is shown at the top of the page, as shown in the following figure.

Figure 2: Command tree navigation

## Command Trees



The breadcrumbs show the full context for the first command on the page.

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### 1.4.2 Searching

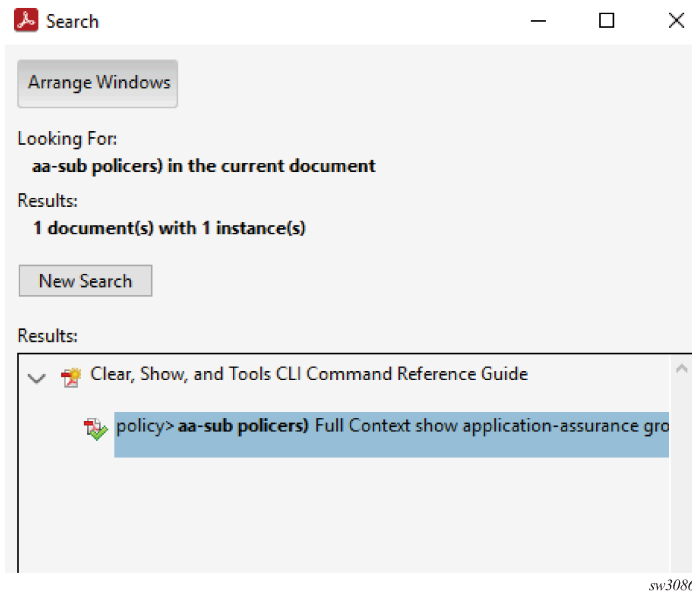
The Context field in each command description shows, in parentheses, the full path to the command as displayed in the CLI prompt. This form of the contextual path often abbreviates terms. For example:

(cfg>qos>qgrps>egr>qgrp>queue wred-queue)

To search this guide for a specific command using the Acrobat search function, enter the command name and append a closing parenthesis in the search window. For more efficient searching, add the previous level of the contextual path before the command name.

If you add the context and closing parenthesis, the resulting search returns only matching Context entries. It will not return instances of the same command found elsewhere in the guide. The following figure shows an example of a search.

Figure 3: Search window



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### 1.4.3 Linking to the tree

Clicking on [Tree] in a command description context links directly to the command in the CLI tree. The following figure shows the [Tree] element.

Figure 4: Link to CLI tree

#### policers

<b>Syntax</b>	<b>policers</b>
<b>Context</b>	<a href="#">[Tree]</a> (show>app-assure>group>policy>aa-sub policers)
<b>Full Context</b>	show application-assurance group policy aa-sub policers
<b>Description</b>	This command displays policer configuration information.
<b>Output</b>	The following is an example output for the <b>policers</b> command.

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## 2 Command Trees

## 2.1 clear Commands

The CLI **clear** commands are primarily used to set statistics in a specific area back to a value of zero, reset specific hardware assemblies (for example, cards), and delete temporary operational state data (for example, contents of a log in memory).

```
- clear
  - aaa
    - diameter-node
    - isa-radius-policy
    - l2tp-accounting-policy
    - radius-server-policy
    - route-downloader
  - anysec
  - application-assurance
    - group
      - cflowd
      - event-log
      - gtp
      - statistics
      - status
    - radius-accounting-policy
  - call-trace
    - ipoe
      - session
      - trace
    - pppoe
      - session
    - trace
  - card
    - virtual
      - cpu-scheduling
  - cflowd
  - chassis
    - power-shelf
    - power-module
  - cpm-filter
    - ip-filter
    - ipv6-filter
    - mac-filter
  - cpm-queue
  - cpu-protection
    - eth-cfm-monitoring
    - excessive-sources
    - protocol-protection
    - violators
  - esa
  - esa-vm
  - eth-cfm
    - auto-discovered-meps
    - learned-remote-mac
    - mep
    - statistics
  - filter
    - ip
    - ip-exception
    - ipv6
    - ipv6-exception
    - log
    - mac
  - group-encryption
```

clear grp-encryp encryption-keygroup

```
  - encryption-keygroup
  - ip
    - tunnel
  - ipsec
    - gateway
    - lockout
    - stats
      - ike-stats
    - transport-mode
    - tunnel
  - isa
    - lns-group
  - lag
  - li
    - filter
      - li-ip
      - li-ipv6
      - li-mac
    - log
    - radius
      - mirror-dest
  - log
    - event-handling
      - handler
      - information
    - log-events
    - log-id
  - macsec
    - mka-session
  - management-access-filter
    - ip-filter
    - ipv6-filter
    - mac-filter
  - mcast-management
    - mcast-reporting-dest
  - mda
  - nat
    - classic-lsn-sub
    - dslite-lsn-sub
    - isa
      - nat-group
    - l2-aware-sub
    - map
      - statistics
    - nat64-lsn-sub
    - subscriber-identification
    - system-statistics
    - upnp-mappings
    - upnp-policy-statistics
  - oam-pm
  - open-flow
  - pools
  - port
    - ethernet
      - dampening
      - efm-oam
      - events
    - hw-agg-shaper-sched
    - port-queues
    - port-scheduler
    - vport
  - pw-port
  - python
    - python-policy
```

clear python python-script

```
  - python-script
- qos
  - arbiter-stats
    - card
    - customer
    - port
    - sap
    - subscriber
  - scheduler-stats
    - customer
    - port
    - sap
    - subscriber
- radius
- reassembly-statistics
- redundancy
  - multi-chassis
    - mc-endpoint
    - mc-lag
    - mc-ring
      - debounce
      - ring-nodes
      - statistics
        - global
        - peer
        - ring
        - ring-node
    - sync-database
    - wpp
- router
  - arp
  - authentication
    - statistics
  - autoconfigure
    - dhcp-client
    - dhcp6-client
    - router-advertisement
      - statistics
  - bfd
    - seamless-bfd
      - session
      - statistics
    - session
    - statistics
  - bgp
    - damping
    - flap-statistics
    - neighbor
    - protocol
    - traffic-statistics
  - bier
    - database
    - statistics
  - bmp
    - station
  - dhcp
    - local-dhcp-server
      - declined-addresses
      - failover-pool-stats
      - leases
      - pool-ext-stats
      - server-stats
      - sticky-leases
      - subnet-ext-stats
```



clear router dhcp statistics

```
- statistics
- dhcp6
  - local-dhcp-server
    - failover-pool-stats
    - leases
    - pool-ext-stats
    - pool-threshold-stats
    - prefix-ext-stats
    - prefix-threshold-stats
    - server-stats
  - statistics
- forwarding-table
- grt-lookup
- gtp
  - peer
  - uplink
    - mgw-address-cache
- icmp
- icmp-redirect-route
- icmp6
- icmp6-redirect-route
- igmp
  - database
  - mcast-reporting-statistics
  - statistics
  - version
- interface
- isis
  - adjacency
  - database
  - export
  - overload
  - sid-egress-stats
  - sid-ingress-stats
  - spf-log
  - statistics
- l2tp
  - group
    - statistics
    - tunnel
      - tunnel-selection-blacklist
    - tunnel-selection-blacklist
  - peer
    - statistics
    - tunnel-selection-blacklist
  - session
  - statistics
  - tunnel
    - statistics
    - tunnel-selection-blacklist
  - tunnel-selection-blacklist
- ldp
  - fec-egress-statistics
  - instance
  - interface
  - peer
  - resource-failures
  - session
  - statistics
  - targeted-auto-rx
- mcac
  - statistics
- mld
  - database
```

clear router mld statistics

```
- statistics
- version
- mpls
  - forwarding-policies
    - binding-label
    - forwarding-policy
  - interface
  - lsp
    - auto-lsp
      - rsvp-te
      - sr-te
    - lsp-self-ping
    - rsvp-te
    - sr-te
  - lsp-autobandwidth
  - lsp-egress-stats
  - lsp-history
  - lsp-ingress-stats
  - lsp-self-ping
  - sr-te-lsp-egress-stats
- msdp
  - cache
  - statistics
- neighbor
- origin-validation
- ospf
  - database
  - export
  - neighbor
  - overload
  - sid-egress-stats
  - sid-ingress-stats
  - statistics
- ospf3
  - database
  - export
  - neighbor
  - overload
  - sid-egress-stats
  - sid-ingress-stats
  - statistics
- pcep
  - pcc
    - peer
- pcp-server
- pim
  - database
  - neighbor
  - s-pmsi
  - statistics
- radius-proxy-server
- rib-api
  - label
  - tunnel
- rip
  - database
  - export
  - statistics
- ripng
  - database
  - export
  - statistics
- router-advertisement
- rsvp
```

clear router rsvp interface

```
- interface
- statistics
- segment-routing
  - sr-policies
    - egress-statistics
    - ingress-statistics
- srrp
  - interface
  - statistics
- vrrp
  - interface
  - statistics
- wlan-gw
  - isa-subnets
  - mgw-address-cache
  - mobile-gateway
- wpp
  - hosts-logging-out
  - statistics
- saa
- screen
- service
  - dynamic-services
  - data-trigger
  - id
    - arp
    - arp-host
    - authentication
      - statistics
    - bmp
      - station
    - dhcp
      - lease-state
      - statistics
    - dhcp6
      - lease-state
      - statistics
    - dynamic-services
      - capture-sap
    - evpn
    - fdb
    - gsmpp
      - statistics
    - host-tracking
    - igmp-snooping
      - port-db
      - querier
      - statistics
    - ipoe
      - session
    - managed-hosts
    - mesh-sdp
    - mfib
      - statistics
    - mld-snooping
      - port-db
      - querier
      - statistics
    - msap
    - msap-policy
    - neighbor
    - pim-snooping
      - database
      - neighbor
```

clear service id pim-snooping statistics

```
    - statistics
  - ppp
    - session
    - statistics
  - pppoe
    - statistics
  - proxy-arp
    - duplicate
    - dynamic
  - proxy-nd
    - duplicate
    - dynamic
  - ptp
    - peer
  - sap
    - queue-depth
  - site
  - slaac
    - host
  - spb
    - adjacency
    - database
    - spf-log
    - statistics
  - spoke-sdp
  - stp
    - detected-protocols
  - subscriber-hosts
    - statistics
- statistics
  - dynamic-services
  - id
    - cem
    - counters
    - l2pt
    - mesh-sdp
    - mrp
    - pip
    - spoke-sdp
    - stp
  - sap
  - sdp
  - subscriber
- sfm
- subscriber-mgmt
  - accu-stats
  - ancp
  - authentication
    - coa-statistics
  - diameter-application-policy
  - diameter-session
    - ccrt-replay
  - errors
  - gtp
  - host-lockout-policy
  - host-tracking
    - subscriber
  - idle-only-msap
  - interface-statistics
  - isa-filter
    - ipv4
    - ipv6
  - isa-service-chaining
  - msap-policy
```

clear subscriber-mgmt peakvalue-stats

```
- peakvalue-stats
- pfc
  - up-resiliency
    - fate-sharing-group
- pfc-association
- pfc-session
- radius-accounting
- sap-template
- statistics
- svlan-statistics
- system-statistics
- vrgw
  - brg
    - gateway
  - wlan-gw
- system
  - management-interface
    - remote-management
      - manager
      - statistics
  - ptp
    - clock-recovery
    - inactive-peers
    - peer
    - port
      - neighbor
        - ptsf-unusable
      - statistics
    - statistics
  - reboot-required
- satellite
  - eth-sat
    - sync-if-timing
  - tdm-sat
    - sync-if-timing
- script-control
  - script-policy
    - completed
  - statistics
  - sync-if-timing
- tacplus
- test-oam
  - oam-perf
  - service-activation-testhead
  - twamp
    - server
- video
  - id
    - session
  - statistics
    - id
      - channel
      - interface
      - session
    - isa
- vrrp
  - statistics
- wlan-gw
  - isa
    - wlan-gw-group
- xiom
```

## 2.2 monitor Commands

The CLI **monitor** commands are found in the **monitor** context of the operational root of the CLI tree. The **monitor** commands display specified statistical information related to the monitor subject (such as filter, port, QoS, router, service, and VRRP) at a configurable interval until a count is reached.

The **monitor** command output displays a snapshot of the current statistics. The output refreshes with subsequent statistical information at each configured interval and is displayed as a delta to the previous output.

The <Ctrl-C> keystroke interrupts a monitoring process. **monitor** command configurations cannot be saved. You must enter the command for each monitoring session. If the maximum limits are configured, you can monitor the statistical information for a maximum of 60 x 999 s (approximately 1000 minutes).

```

- monitor
  - card
  - cpm-filter
    - ip
    - ipv6
    - mac
  - eth-cfm
    - statistics
  - filter
    - ip
    - ipv6
    - mac
  - lag
  - management-access-filter
    - ip
    - ipv6
    - mac
  - oam-pm
    - session
      - dm
      - dmm
      - lmm
      - slm
      - twamp-light
  - port
  - port
    - hw-agg-shaper-sched
    - port-scheduler
    - queue-group
    - vport
  - qos
    - arbiter-stats
      - card
      - customer
      - port
      - sap
      - subscriber
    - port
    - scheduler-stats
      - customer
      - port
      - sap
      - subscriber
  - router
    - bgp
      - neighbor
  
```

monitor router bgp traffic-statistics

```
    - traffic-statistics
  - isis
    - statistics
  - ldp
    - fec-egress-stats
    - session
    - statistics
  - mpls
    - forwarding-policies
      - binding-label
      - forwarding-policy
    - interface
    - lsp-egress-stats
    - lsp-ingress-stats
    - sr-te-lsp-egress-stats
    - tp-lsp-egress-stats
    - tp-lsp-ingress-stats
  - ospf
    - interface
    - neighbor
    - virtual-link
    - virtual-neighbor
  - ospf3
    - interface
    - neighbor
    - virtual-link
    - virtual-neighbor
  - pim
    - group
  - rib-api
    - label
    - tunnel
  - rip
    - neighbor
  - ripng
    - neighbor
  - rsvp
    - interface
  - segment-routing
    - sr-policies
      - egress-statistics
      - ingress-statistics
  - vrrp
    - instance
- service
  - id
    - sap
    - sdp
  - subscriber
- test-oam
  - oam-perf
```

## 2.3 show Commands

The CLI **show** commands display useful information in the format of a human-readable report, with the ability to add or remove output based on additional parameters. The information in the output of the **show** commands consists of configuration and operational information, and may also perform calculations or additional processing to display some of the output.

The information in the output of the **show** commands can also be found in the **state** and **configure** branches of the MD-CLI (as well as via model-driven interfaces such as NETCONF and gRPC). The output of these branches is fully modeled in YANG with structured data that can be easily manipulated by tools and applications (including pySROS and NETCONF clients). The pySROS and MD-CLI command alias features can be used together to create custom **show** commands using the modeled data. See "Command aliases" in the *7450 ESS, 7750 SR, 7950 XRS, and VSR MD-CLI User Guide* .

```

- show
  - aaa
    - acct-on-off-group
    - diameter-node
    - isa-radius-policy
    - l2tp-accounting-policy
    - radius-configuration
    - radius-script-policy
    - radius-server-policy
    - route-downloader
    - wpp
  - alias
  - anysec
    - mka-over-ip
    - tunnel-encryption
  - application-assurance
    - aarp
    - cflowd
      - comprehensive
      - pgw-edr
      - tcp-performance
      - volume
    - flow-attribute
  - group
    - aa-interface
    - aa-sub
      - app-group
      - application
      - charging-group
      - count
      - policers
      - protocol
      - summary
      - usage-monitor
        - app-group
        - application
        - charging-group
        - count
        - status
    - aa-sub-list
    - aa-sub-study
      - application
      - protocol
    - app-group
    - application
  
```



show app-assure group certificate-profile

```
- certificate-profile
- cflowd
  - collector
  - direct-export
    - collector
    - isa-collector
  - status
- dns-ip-cache
- event-log
- flow-attribute
- gtp
- http-enrich
  - detail
  - field
  - summary
- http-error-redirect
- http-notification
- http-redirect
- ip-identification-assist
- partition
- policer
- policy
  - admin
  - app-filter
  - app-group
  - app-profile
  - app-qos-policy
  - app-service-option
  - application
  - charging-filter
  - charging-group
  - custom-protocol
  - summary
- protocol
- sctp-filter
- session-filter
- status
- tcp-optimizer
- tcp-validate
- traffic-type
- transit-ip-policy
- transit-prefix-policy
- url-filter
- url-list
- http-enrich
  - field
  - fields
- http-error-redirect
  - error-codes
  - template
- http-notification
  - template
- http-redirect
  - error-codes
  - template
- protocol
- radius-accounting-policy
- threshold-crossing-alert
- version
- web-service
  - category-set-id
- aps
- bmp
- station
```

show bof

```
- bof
- boot-messages
- call-trace
  - files
  - ipoe
    - session
    - trace
  - ppp
    - session
  - status
  - trace
  - trace-profile
  - wlan-gw
    - ue
- card
  - virtual
    - cpu-scheduling
    - fp
- certificate
  - auto-cert-update
  - ca-profile
  - est-profile
  - ocs-cache
  - statistics
- cflowd
  - collector
  - interface
  - l2-services
  - status
- chassis
  - power-management
    - requirements
    - utilization
  - power-shelf
    - power-module
- config
- connection-profile-vlan
- datapath
- debug
- elmi
  - evc
  - uni
- esa
  - host-port
- esa-vm
- eth-cfm
  - association
  - cfm-stack-table
  - collect-lmm-fc-stats
  - collect-lmm-stats
  - default-domain
  - domain
  - lbm-svc-act-responder
  - learned-remote-mac
  - local-tx-pdu
  - mep
  - mip
  - mip-instantiation
    - sap
    - sdp
  - statistics
  - system-config
  - system-info
- eth-ring
```

show eth-tunnel

```
- eth-tunnel
- filter
  - dhcp
  - dhcp6
  - gre-tunnel-template
  - ip
  - ip-exception
  - ipv6
  - ipv6-exception
  - log
  - mac
  - match-list
    - ip-packet-length-list
    - ip-prefix-list
    - ipv6-packet-length-list
    - ipv6-prefix-list
    - port-list
    - protocol-list
  - md-auto-id
  - redirect-policy
  - redirect-policy-binding
  - system-filter
- fwd-path-ext
- group-encryption
  - encryption-keygroup
  - summary
- hs-pools
- ip
  - tunnel
- ipsec
  - cert-profile
  - certificate
  - client-db
  - gateway
  - ike-policy
  - ike-transform
  - ipsec-transport-mode-profile
  - lockout
  - multi-chassis-shunt-interface
    - router
    - service
  - multi-chassis-shunting-profile
    - router
    - service
  - radius-accounting-policy
  - radius-authentication-policy
  - security-policy
    - router
    - service
  - service
  - static-sa
  - transform
  - trust-anchor-profile
  - ts-list
  - tunnel
  - tunnel-template
- isa
  - application-assurance-group
  - lns-group
  - nat-group
  - nat-system-resources
  - statistics
    - ip-tunnel-stats
      - number-of-tunnels
```

show isa stats ip-tunnel-stats throughput

```
    - throughput
    - traffic-forward
  - ipsec-stats
    - ike-exchange-failure-rate
    - ikev2-msg-drop
    - number-of-tunnels
    - throughput
    - traffic-forward
    - tunnel-setup-rate
  - tunnel-isa
    - cpu-usage
    - memory-allocation-failure-rate
  - tunnel-group
  - tunnel-member-pool
  - video-group
  - wlan-gw-group
- lag
  - associations
  - bfd
  - egress-rate-distribution
  - eth-cfm
  - flow-distribution
  - lacp-partner
  - link-map-profile
  - lldp-member-template
  - per-link-hash
  - port-scheduler
- li
  - filter
    - li-ip
    - li-ipv6
    - li-mac
  - li-source
  - log
    - log-id
  - mirror-dest
  - status
  - x-interfaces
    - connections
    - statistics
      - x1
      - x2
      - x3
    - summary
- licensing
- log
  - accounting-policy
  - accounting-records
  - applications
  - cli
    - all-subscriptions
  - event-control
  - event-handling
    - handler
    - information
    - scripts
  - event-parameters
  - file-id
  - filter-id
  - log-collector
  - log-id
  - snmp-trap-group
  - syslog
- macsec
```

show macsec connectivity-association

```
  - connectivity-association
  - mka-session
- mcast-management
  - bandwidth-policy
  - channel
  - chassis
  - fp
  - mcast-reporting-dest
  - multicast-info-policy
- mda
- megapools
- mirror
- oam-pm
  - bin-group
  - bin-group-using
  - session
  - sessions
  - statistics
    - session
      - dm
        - meas-interval
      - dmm
        - meas-interval
      - lmm
        - meas-interval
      - slm
        - meas-interval
      - twamp-light
        - meas-interval
    - streaming
      - delay-template
      - delay-template-using
    - tests
- open-flow
  - of-switch
- ospf
  - neighbor
- ospf3
  - neighbor
- pcap
- pcm
- peq
- pools
- port
- port
  - dist-cpu-protection
  - ethernet
    - efm-oam
      - event-logs
    - eth-cfm
    - lldp
  - hs-secondary-shaper
  - hw-agg-shaper-sched
  - port-queues
  - port-scheduler
  - pxc
  - queue-group
  - vport
- port-policy
- port-tree
- port-xc
- pw-port
- pw-port
- python
```

show python interpreter

```
- interpreter
- python-policy
- python-script
- qos
  - adv-config-policy
  - agg-rate
    - customer
    - port
    - sap
    - subscriber
  - arbiter-stats
    - card
    - customer
    - port
    - sap
    - subscriber
  - bcg
  - dscp-table
  - fp-resource-policy
  - hs-attachment-policy
  - hs-pool-policy
  - hs-port-pool-policy
  - hs-scheduler-hierarchy
  - hs-scheduler-policy
  - hw-agg-shaper-scheduler-policy
  - lag
  - match-list
    - ip-prefix-list
    - ipv6-prefix-list
    - port-list
  - md-auto-id
  - network
  - network-queue
  - policer
    - card
    - port
    - sap
    - subscriber
  - policer-control-policy
  - policer-hierarchy
    - card
    - customer
    - port
    - sap
    - subscriber
  - port-scheduler-policy
  - post-policer-mapping
  - queue
  - queue-depth-violations
  - queue-group
  - queue-group-redirect-list
  - sap-egress
  - sap-ingress
  - scheduler-hierarchy
    - customer
    - port
    - sap
    - subscriber
  - scheduler-name
  - scheduler-policy
  - scheduler-stats
    - customer
    - port
    - sap
```

show qos scheduler-stats subscriber

```
    - subscriber
  - shared-queue
  - slope-policy
  - vport
- radius
- redundancy
  - bgp-evpn-multi-homing
  - bgp-multi-homing
  - mgmt-ethernet
  - multi-chassis
    - all
    - ipsec-domain
    - mc-endpoint
    - mc-ipsec
    - mc-ipsec
    - mc-lag
    - mc-ring
    - omcr
      - all
    - sync
    - wpp
  - synchronization
- router
  - aggregate
  - arp
  - authentication
    - statistics
  - autoconfigure
    - dhcp-client
    - dhcp6-client
    - router-advertisement
  - bfd
    - bfd-template
    - interface
    - resources
    - seamless-bfd
      - session
    - session
  - bgp
    - auth-keychain
    - convergence
    - damping
    - group
    - inter-as-label
    - neighbor
    - next-hop
    - optimal-route-reflection
      - bgp-nh-info
    - paths
    - policy-test
    - prefix-label
    - routes
      - aspath-regex
      - bgp-ls
        - ipv4-prefix
        - ipv6-prefix
        - link
        - node
        - srv6-sid
      - brief
      - community
      - detail
      - evpn
        - auto-disc
```

show router bgp routes evpn eth-seg

```
    - eth-seg
    - incl-mcast
    - ip-prefix
    - ipv6-prefix
    - mac
    - mcast-join-synch
    - mcast-leave-synch
    - smet
    - spmsi-ad
  - flow-ipv4
  - flow-ipv6
  - flow-vpn-ipv4
  - flow-vpn-ipv6
  - hunt
  - ipv4
  - ipv6
  - l2-vpn
  - label-ipv4
  - label-ipv6
  - longer
  - mcast-ipv4
  - mcast-ipv6
  - mcast-vpn-ipv4
  - mcast-vpn-ipv6
  - mdt-safi
  - ms-pw
  - mvpn-ipv4
  - mvpn-ipv6
  - route-target
  - sr-policy-ipv4
  - sr-policy-ipv6
  - vpn-ipv4
  - vpn-ipv6
- sr-label
- summary
- traffic-statistics
- bier
  - database
  - forwarding
  - inband-tunnel
  - routing
  - statistics
  - status
  - template
  - tunnel
- bmp
  - station
- dhcp
  - local-dhcp-server
    - associations
    - declined-addresses
    - failover-pool-stats
    - failover-server-stats
    - free-addresses
    - leases
    - pool-ext-stats
    - server-stats
    - sticky-leases
    - subnet-ext-stats
    - subnet-stats
    - summary
  - servers
  - statistics
  - summary
```



show router dhcp6

```
- dhcp6
  - local-dhcp-server
    - associations
    - failover-pool-stats
    - failover-server-stats
    - interface-id-mapping
    - leases
    - pool-ext-stats
    - pool-stats
    - pool-threshold-stats
    - prefix-ext-stats
    - prefix-stats
    - prefix-threshold-stats
    - server-stats
    - summary
  - servers
  - statistics
  - summary
- dns
- ecmp
- fib
- fib-telemetry
- firewall
  - domain
  - summary
- flexible-algorithm-definitions
- fp-tunnel-table
- gtm
- gtp
  - peer
  - s11
    - peer-profile-map
  - uplink
    - mgw-address-cache
    - mgw-address-cache
    - peer-profile-map
- icmp
  - interface
- icmp6
  - interface
- if-attribute
  - admin-group
  - srlg-group
- igmp
  - group
  - group-interface
  - hosts
  - interface
  - mcast-reporting-statistics
  - ssm-translate
  - static
  - statistics
    - group-interface
    - host
  - status
  - tunnel-interface
- interface
  - ipsec
- isa-service-chaining
- isis
  - adjacency
  - bier-info
  - capabilities
  - database
```

show router isis flex-algo

```
- flex-algo
- hostname
- interface
- lfa-coverage
- link-group-member-status
- link-group-status
- mapping-server
- prefix-sids
- routes
- segment-routing-v6
  - end-sid
  - lfa-info
  - locator
  - micro-segment-locator
  - status
  - un-sid
- sid-stats
- spf-log
- sr-adj-sets
- sr-lfa-coverage
- sr-lfa-info
- statistics
- status
- summary-address
- topology
- unreachable-routes
- l2tp
  - eth-tunnel
  - group
  - mlppp
    - bundles
  - peer
  - peer
  - session
  - statistics
  - tunnel
  - vas-tunnel
- ldp
  - bindings
    - active
      - detail
      - egress-if
      - egress-lsp
      - egress-nh
      - ipv4
      - ipv6
      - p2mp
      - prefixes
      - summary
    - detail
    - ipv4
    - ipv6
    - label-type
    - p2mp
      - stitching
      - summary
    - prefixes
    - services
    - session
    - summary
  - discovery
  - fec-egress-stats
  - fec-originate
  - interface
```

show router ldp lsp-bfd

```
- lsp-bfd
- parameters
- session
- session-parameters
- statistics
- statistics-summary
- status
- targ-peer
- targ-peer-template
- targ-peer-template-map
- tcp-session-parameters
- macsec
- mcac
  - if-policy
  - policy
  - statistics
- mld
  - group
  - group-interface
  - hosts
  - interface
  - ipsec-interface
  - ssm-translate
  - static
  - statistics
    - group-interface
    - host
  - status
- mpls
  - bypass-tunnel
  - class-forwarding-policy
  - forwarding-policies
    - binding-label
    - endpoint
    - forwarding-policy
    - status
  - ingress-stats-template
  - interface
  - lsp
  - lsp-egress-stats
  - lsp-ingress-stats
  - lsp-self-ping
  - lsp-template
  - mpls-tp
    - lsp-egress-stats
    - lsp-ingress-stats
    - oam-template
    - protection-template
    - status
    - transit-path
  - p2mp-info
  - p2mp-lsp
  - path
  - sr-te-lsp
  - srlg-database
  - static-lsp
  - statistics-summary
  - status
  - tp-lsp
- mpls-labels
  - label
  - label-range
  - summary
- msdp
```

show router msdp group

```
  - group
  - peer
  - source
  - source-active
  - source-active-rejected
  - statistics
  - status
- mvpn
- mvpn-extranet
- mvpn-list
- nat
  - inside
  - l2-aware-blocks
  - lsn-blocks
  - pool
    - histogram
      - extended-port-blocks-per-ip
      - port-blocks
      - ports
      - subscribers-per-ip
    - statistics
  - subscriber-identification
  - summary
- neighbor
- network-domains
- origin-validation
  - database
  - rpki-session
- ospf
  - area
  - bier-info
  - capabilities
  - database
  - flex-algo
  - hostname
  - interface
  - lfa-coverage
  - mapping-server
  - neighbor
  - opaque-database
  - prefix-sids
  - range
  - routes
  - sham-link
  - sham-link-neighbor
  - sid-stats
  - spf
  - sr-adj-sets
  - sr-lfa-coverage
  - statistics
  - status
  - virtual-link
  - virtual-neighbor
- ospf3
  - area
  - capabilities
  - database
  - hostname
  - interface
  - lfa-coverage
  - neighbor
  - prefix-sids
  - range
  - routes
```

show router ospf3 sid-stats

```
- sid-stats
- spf
- sr-lfa-coverage
- statistics
- status
- virtual-link
- virtual-neighbor
- p2mp-sr-tree
  - database
    - p2mp-policy
    - replication-segment
  - downstream-nodes
  - label
  - p2mp-policy
    - p2mp-candidate-path
  - replication-segment
    - downstream-nodes
  - statistics
  - status
  - tunnel
- pbr-steering
- pcep
  - pcc
    - detail
    - lsp-db
    - p2mp-sr
    - path-request
    - pce-associations
      - diversity
      - policy
    - peer
    - status
- pcp-server
- pim
  - anycast
  - crp
  - extranet-interface
  - group
  - interface
  - mc-ecmp-balance
  - neighbor
  - rp
  - rp-hash
  - s-pmsi
  - statistics
  - status
  - tunnel-interface
- policy
- policy-edits
- radius-proxy-server
- radius-server
- rib-api
  - label
  - route
  - status
  - tunnel
- rip
  - database
  - group
  - neighbor
  - peer
  - statistics
- ripng
  - database
```

show router ripng group

```
    - group
    - neighbor
    - peer
    - statistics
  - route-next-hop-policy
    - template
  - route-table
  - rsvp
    - interface
    - neighbor
    - session
    - statistics
    - status
  - rtr-advertisement
  - segment-routing
    - sr-mpls
      - prefix-sids
    - sr-policies
      - all
      - bgp
      - egress-statistics
      - ingress-statistics
      - static
      - static-policy
      - summary
  - segment-routing-v6
    - base-routing-instance
    - local-sid
    - locator
    - micro-segment-local-sid
    - micro-segment-locator
    - summary
  - sgt-qos
    - application
    - dscp-map
  - static-arp
  - static-route
  - status
  - tunnel-interface
  - tunnel-table
  - twamp-light
  - unreachable-route-table
  - vrf-export-test
  - vrrp
    - instance
    - statistics
  - wlan-gw
    - isa-subnets
    - tunnel-qos
    - tunnels
  - wpp
- saa
- service
  - aa-sub-using
  - active-subscribers
    - ale-adjust
    - credit-control
    - filter
    - hierarchy
      - diameter
      - radius-acct
    - host-tracking
      - groups
  - igmp
```

show service active-subscribers mld

```
  - mld
  - pcc-rule
  - sub-mcac
  - subscriber
- bonding
- customer
- dynamic-services
  - data-triggers
  - dynamic-services-policy
  - root-objects
  - saps
  - script
    - snippets
    - statistics
  - summary
- egress-label
- endpoint-using
- evpn-mpls
- fdb-info
- fdb-mac
- id
  - all
  - all
  - all
  - all
  - all
  - arp
  - arp-host
  - authentication
    - statistics
  - base
  - bgp
  - bgp-ad
  - bgp-evpn
    - evpn-l2-oper-attrs
    - isid-route-target
    - segment-routing-v6
  - bgp-ipvpn
    - mpls
    - segment-routing-v6
  - bgp-vpls
  - bgp-vpws
  - bmp
    - station
  - dhcp
    - lease-state
    - statistics
    - summary
  - dhcp6
    - lease-state
    - statistics
    - summary
  - dynamic-services
    - capture-sap
  - endpoint
  - epipe
  - es-pbr
  - ethernet-segment
  - etree
  - evpn-mcast-gateway
  - evpn-mpls
  - fdb
  - gsmp
    - neighbors
```

show service id gsm sessions

```
  - sessions
- host-connectivity-verify
  - statistics
  - summary
- host-tracking
  - groups
  - saps
- i-vpls
- igmp-snooping
  - all
  - base
  - evpn-proxy-db
  - mrouter
  - mvr
  - port-db
  - proxy-db
  - querier
  - static
  - statistics
- interface
- ipoe
  - session
  - summary
- isid-policy
- l2-route-table
- l2pt
- labels
- log
  - filter-id
  - log-id
  - snmp-trap-group
  - syslog
- mac-move
- mac-notification
- mac-protect
- macsec
- managed-hosts
- mfib
- mld-snooping
  - all
  - base
  - evpn-proxy-db
  - mrouter
  - mvr
  - port-db
  - proxy-db
  - querier
  - static
  - statistics
- mmp
- mrp
- msap
- mstp-configuration
- mvrp
- pbr-steering
- pim-snooping
  - group
  - neighbor
  - port
  - statistics
  - status
- ppp
  - session
  - statistics
```



show service id ppp summary

```
    - summary
- pppoe
  - session
  - statistics
  - summary
- provider-tunnel
- proxy-arp
- proxy-arp
- proxy-nd
- ptp
  - peer
  - peers
  - unicast
- retailers
- sap
- sdp
- segment-routing-v6
  - micro
- site
- slaac
  - host
  - summary
- source-address
- spb
  - adjacency
  - base
  - database
  - fate-sharing
  - fdb
  - fid
  - hostname
  - interface
  - mfib
  - routes
  - spf
  - spf-log
  - statistics
  - status
- split-horizon-group
- spoke-sdp-fec
- static-host
- stp
- subscriber-hosts
- twamp-light
- vccv-bfd
- virtual-subnet
- vpls-group
- vxlan
- wholesalers
- ingress-label
- ingress-label
- ingress-label
- ingress-label
- ip-transport-using
- ipfix
  - ipfix-export-policy
- isid-using
- l2-route-table
- mac-list
- md-auto-id
- mrp-policy
- nat
  - deterministic-script
  - firewall-hosts
```

show service nat firewall-neighbors

```
- firewall-neighbors
- firewall-policy
- l2-aware-hosts
- l2-aware-subscribers
- lsn-subscribers
- map
  - frag-stats
  - map-domain
- nat-classifier
- nat-policy
- nat-prefix-list
- overview
- pcp-server-policy
- port-forwarding-entries
  - classic-lsn-sub
  - dslite-lsn-sub
  - l2-aware-sub
  - nat64-lsn-sub
- statistics
- syslog
  - syslog-export-policy
- up-nat-policy
- oper-group
- pbb
- ppp
  - summary
- provider-tunnel-using
- proxy-arp-nd
- pw-routing
- pw-sap-using
- pw-template
- pw-template-using
- sai-type2-using
- sap-using
- sap-using
- sap-using
  - aarp
  - app-profile
  - authentication-policy
  - encap-type
  - eth-cfm
    - collect-lmm-stats
    - facility
    - squelch-ingress-levels
  - eth-ring
  - eth-tunnel
  - ethernet-segment
  - interface
  - mc-ring
  - transit-policy
- sdp
- sdp
- sdp
- sdp
- sdp
- sdp-group
- sdp-group-using
- sdp-using
  - eth-cfm
    - collect-lmm-stats
    - squelch-ingress-levels
  - ethernet-segment
- segment-routing-v6
- service-name-using
```

show service service-using

```
- service-using
- site-using
- spoke-sdp-fec-using
- sub-services
- subscriber-using
- system
  - bgp-auto-rd
  - bgp-evpn
    - ethernet-segment
  - bgp-route-distinguisher
  - fdb-usage
  - gre-eth-bridged
  - pw-port-list
  - vxlan
- taii-type2-using
- template
  - epipe-sap-template
  - vpls-sap-template
  - vpls-sap-template-using
  - vpls-template
  - vpls-template-using
- upnp
  - upnp-policy
- vccv-bfd
- vlan-aware-bundle
- vxlan
- vxlan-instance-using
- sflow
- sfm
  - icport
- snmp
  - counters
  - streaming
    - counters
- srrp
- subscriber-mgmt
  - accu-stats
  - accu-stats-policy
  - accu-stats-subscribers
  - ancp-policy
  - ancp-policy
  - ancp-string
  - authentication
  - authentication-origin
  - bgp-peering-policy
  - category-map
  - credit-control-policy
  - diameter-application-policy
  - diameter-session
    - ccrt-replay
  - errors
    - mac
    - sap
    - sdp
    - unknown-origin
  - explicit-subscriber-map
- gtp
  - peer-profile
  - s11
    - session
  - statistics
  - summary
  - uplink
    - session
```

show subscr-mgmt host-lockout-policy

```
- host-lockout-policy
- host-tracking-policy
- http-redirect-policy
- igmp-policy
- interface-statistics
- ipoe-session-policy
- isa-filter
- isa-policer
- isa-service-chaining
  - mappings
  - vas-filter
- local-user-db
- mld-policy
- msap-policy
- pcc-rule
- pfc
  - association
  - peer
  - session
  - statistics
  - summary
  - up-resiliency
    - fate-sharing-group
    - health
- pim-policy
- ppp-policy
- ppp-policy
- pppoe-client-policy
- radius-accounting-policy
- rip-policy
- router-advertisement-policy
- shcv-policy
- sla-profile
- statistics
- status
  - system
- steering-profile
- sub-ident-policy
- sub-mcac-policy
- sub-profile
- svlan-statistics
- vrgw
  - brg
    - brg-hosts
    - brg-profile
    - gateway
      - bindings
      - ds-lite-b4
      - host
      - hosts
      - public-static-devices
      - standby-ip-addresses
    - gateways
    - pppoe-client
  - lanext
    - bd
- wlan-gw
  - gtp-statistics
  - ssid
  - statistics
  - tunnels
    - query-results
  - ue
    - query-results
```

show system

```
- system
  - alarm-contact-input
  - alarms
  - bluetooth
    - device
    - module
  - candidate
  - connections
  - cpu
  - cpu
  - cron
    - schedule
  - dhcp6
  - ethernet
    - efm-oam
  - file-transmission-profile
  - grpc
  - grpc-tunnel
    - tunnel
  - information
  - ip
  - l2tp
  - license
  - license-statistics
    - 24-hours
    - peak
    - week
  - lldp
  - lldp
  - load-balancing-alg
  - management-interface
    - commit-history
    - configuration-sessions
    - datastore-locks
    - remote-management
  - memory-pools
  - netconf
  - ntp
  - port-topology
  - ptp
    - peer
    - peers
    - performance-monitoring
    - port
    - standby
    - statistics
    - unicast
  - rollback
  - satellite
    - eth-sat
      - local-forward
      - port-map
      - sync-if-timing
    - local-forward
    - tdm-sat
      - port-map
      - sync-if-timing
  - script-control
    - script
    - script-policy
  - security
    - access-group
    - access-group
    - authentication
```

show system security cli-session-group

```
- cli-session-group
- cpm-filter
  - ip-filter
  - ipv6-filter
  - mac-filter
- cpm-queue
- cpu-protection
  - eth-cfm-monitoring
  - excessive-sources
  - policy
  - protocol-protection
  - violators
- dist-cpu-protection
  - policy
- dot1x
- hash-control
  - custom-hash
- keychain
- management
- management-access-filter
  - ip-filter
  - ipv6-filter
  - mac-filter
- password-options
- password-options
- per-peer-queuing
- per-peer-queuing
- profile
- profile
- snmp
  - community
  - src-access-list
- source-address
- ssh
- tls
  - cert-profile
  - client-tls-profile
  - server-tls-profile
  - trust-anchor-profile
- user
- view
- sntp
- software-repository
- switch-fabric
- sync-if-timing
- telemetry
  - grpc
    - subscription
  - persistent
    - subscription
  - sensor-group
- thresholds
- time
- test-oam
  - build-packet
    - packet
  - icmp
    - ping-template
    - ping-template-using
- ldp-treetrace
- link-measurement
  - interface
  - interfaces
  - measurement-template
```

show test-oam link-measurement measurement-template-using

```
    - measurement-template-using
  - lsp-bfd
  - oam-config-summary
  - oam-perf
  - service-activation-testhead
    - service-test
    - service-tests
  - twamp
    - client
    - server
    - twamp-light
      - reflectors
      - source-udp-port-pools
- time
- uptime
- users
- version
- video
  - channel
  - interface
  - perfect-stream
    - channel
  - rtp-session
- vrrp
  - policy
- xiom
```

## 2.4 tools Commands

The CLI **tools** commands provide two primary functions:

- dump
- perform

The **tools dump** commands provide additional detailed and enhanced information about the router.

The **tools perform** commands provide the ability to trigger a variety of actions in the router, such as a card power cycle ( **tools perform card power-cycle**), and APS switchovers.

```
- tools
  - dump
    - aaa
      - radius-acct-terminate-cause
      - radius-server-policy
    - anysec
  - application-assurance
    - aarp
    - esm-lease-state-no-aa
    - group
    - group
      - aa-anl-list
      - aa-sub
        - app-group
        - application
        - charging-group
        - count
        - summary
        - usage-monitor
      - aa-sub-list
      - aa-sub-search
      - admit-deny-stats
    - cflowd
      - template
    - dns-ip-cache
    - event-log
    - flow-record-search
    - http-host-recorder
    - ip-identification-assist
      - all-sources
      - applications
      - cache-contents
      - passive-dns
      - positive-app-id
    - policer
    - port-recorder
    - resources
    - summary
    - tethering
    - traffic-capture
  - resources
  - seen-ip
  - aps
  - auto-boot
  - cflowd
    - cache
    - packet-size
    - top-flows
    - top-protocols
```



tools dump dhcp-rx-stats

```
- dhcp-rx-stats
- epipe-map-access-to-egress-port
- epipe-map-to-network
- esa
  - port-connectivity
- eth-cfm
  - debug-packet
  - top-active-meps
- eth-ring
- eth-tunnel
- filter
  - cam-utilization
  - overload
  - resources
    - cpm
    - dest-tracking
      - ip
      - ipv6
      - sap
      - sdp
      - vprn-target
    - egress-pbr
    - gre-tunnel-template
    - http-redirect
    - iom
    - ip
    - ipv6
    - mac
    - pattern-match
    - sticky-dest
- ipsec
  - stats
    - ike-stats
  - transport-mode
    - stats
      - ike-stats
- lag
- ldp-treetrace
- li
  - wlan-gw
  - ue
- log
  - subscriptions
  - subscriptions
- map-to-phy-port
- mcast-path-mgr
- mda
- mpls-resources
- nat
  - deterministic-mapping
  - histogram
  - isa
    - performance
    - resources
  - l2-aware
    - dynamic-blocks
    - extended-blocks
  - sessions
- open-flow
  - of-switch
- ospf-overview
- persistence
  - ancp
  - application-assurance
```

tools dump persistence dhcp-server

```
    - dhcp-server
    - nat-port-forwarding
    - python
    - submgt
    - summary
- pfc
  - stale-session-audit-status
- port
  - gnss
  - pcs
  - rs-fec
- power-shelf
  - power-module
- pppoe
- python
  - python-policy
- qos
  - cam-state
  - match-criteria-overload
- reassembly-resources
- redundancy
  - multi-chassis
    - mc-endpoint
    - mc-endpoint
    - mc-ring
    - srrp-sync-database
    - sync-database
    - sync-database
  - src-bmac-lsb
- resource-usage
  - card
    - fp
    - mda
  - system
- router
  - autoconfigure
    - dhcp-client
    - dhcp6-client
  - bfd
    - lsp-ldp
    - lsp-rsvp
  - bgp
    - routes
  - bier
    - bift
    - birt
  - dhcp
    - group-if-mapping
    - group-if-stats
  - dhcp6
    - group-if-mapping
  - fib
  - icmp-stats
  - ipoe-session
    - migration
  - isis
    - rlfa-backup-info
    - sr-adjacencies
    - sr-database
  - ldp
    - fec
    - import-pmsi-routes
    - instance
    - interface
```

tools dump router ldp lsp-bfd

```
- lsp-bfd
  - bfd-templates-in-use
- memory-usage
- peer
- session
- sockets
- timers
- lsp-bfd
  - local-bfd-discrim
  - remote-bfd-discrim
- mcast-umh-red
- mpls
  - bypass-tunnel
  - forwarding-policies
  - ftn
  - ilm
  - logger-event-bundling
  - lsp-history
  - lspinfo
  - memory-usage
  - te-lspinfo
  - tp-interface
  - tp-tunnel
- mvpn
  - provider-tunnels
- ospf
  - abr
  - area-range
  - asbr
  - bad-packet
  - leaked-routes
  - memory-usage
  - request-list
  - retransmission-list
  - route-summary
  - route-table
  - sham-bad-packet
  - sr-adjacencies
  - sr-database
- ospf3
  - abr
  - area-range
  - asbr
  - bad-packet
  - leaked-routes
  - memory-usage
  - request-list
  - retransmission-list
  - route-summary
  - route-table
  - sr-adjacencies
  - sr-database
- pcep
  - pcc
    - lsp
    - p2mp-sr
- pim
  - iom-failures
- rib-api
  - label
  - tunnel
- rsvp
  - neighbor
  - psb
```

tools dump router rsvp rsb

```
    - rsb
    - tcsb
  - segment-routing
    - tunnel
  - segment-routing-v6
  - selective-fib-log
  - static-route
  - te-database
    - isis
    - ospf
    - ospf3
  - web-rd
    - http-client
- satellite
  - eth-sat
  - tdm-sat
- security
  - dist-cpu-protection
    - violators
- service
  - base-stats
  - dynamic-services
  - evpn
  - id
    - evpn
    - evpn-mpls
    - fdb
      - card-status
      - mac-status
    - ignore-sap-port-state
    - interface
      - ignore-sap-port-state
    - loopback
    - provider-tunnels
    - spb
      - default-multicast-list
      - fid
    - srv6
    - vxlan
  - ignore-sap-port-state
  - iom-stats
  - l2pt-diags
  - loopback
  - mc-endpoint
  - msap
  - ppp
  - proxy-arp
  - proxy-nd
  - system
    - bgp-evpn
    - ethernet-segment
  - vpls-fdb-stats
  - vpls-mfib-stats
  - vpls-pbb-mfib-stats
- subscriber-mgmt
  - mcs-radius-accounting-stats
  - pcc-rule
    - combinations
  - radius-attr-username
  - vrgw
    - brg
    - gateway
- system
  - congestion-status
```

tools dump system cpm-http-redirect

```
- cpm-http-redirect
  - redirect
  - summary
  - tcp
- security
  - secure-boot
  - uefi-vars
- telemetry
  - expand-wildcard-path
  - on-change-paths
- trim-mode
- test-oam
  - lsp-bfd
  - tail
- twamp
  - server
  - error-counters
- wlan-gw
  - isa
  - performance
  - resources
- lanext
  - bd
    - arp-table
    - flood-table
    - mac-table
    - neighbor-table
    - statistics
  - ue
- perform
  - aaa
    - acct-off
    - acct-on
    - route-downloader
    - start
  - application-assurance
    - aarp
    - group
      - aa-sub
      - load-balance
      - tethering
  - aps
    - clear
    - clear-lockout-annexb
    - exercise
    - force
    - lockout
    - lockout-annexb
    - request
  - auto-boot
- card
  - power-cycle
- cflowd
  - manual-export
- chassis
  - check-bp-eprom
  - link-check
  - set-role
- esa
  - fetch-ahs-log
  - reset-management-engine
- eth-ring
  - clear
  - force
```

tools perform eth-ring manual

```
- manual
- eth-tunnel
  - aps
    - clear
    - exercise
    - force
    - lockout
    - manual
  - filter
    - ip-filter
      - entry
        - activate-primary-action
    - ipv6-filter
      - entry
        - activate-primary-action
    - mac-filter
      - entry
        - activate-primary-action
    - redirect-policy
      - activate-best-dest
- firmware
  - audit
  - upgrade
    - all
    - card
    - mda
    - sfm
- ipsec
  - client-db
  - ike-initiate
  - transport-mode
    - ike-initiate
- isa
  - lns-group
- lag
  - clear-force
  - force
  - load-balance
- log
  - subscribe-to
  - test-event
  - unsubscribe-from
- mda
- nat
  - deterministic
    - calculate-maps
  - port-forwarding-action
    - l2-aware
    - lsn
  - recover-l2aw-bypass
- persistence
  - downgrade
- pfc
  - trigger-cpf-session-audit
- port
- power-shelf
  - power-module
- python-policy
- python-script
  - protect
  - reload
- redundancy
  - forced-single-sfm-overload
  - issu-post-process
```

tools perform redundancy mgmt-ethernet

```
- mgmt-ethernet
- multi-chassis
  - mc-ipsec
    - force-switchover
      - domain
      - tunnel-group
    - sync-database-reconcile
- router
  - autoconfigure
    - dhcp-client
    - dhcp6-client
  - bgp
    - next-hop-reprogram
  - dhcp
    - local-dhcp-server
      - failover
        - abort-startup-wait
        - force-partner-down
      - pool
        - create-sticky-lease
        - failover
          - abort-startup-wait
          - force-partner-down
      - send-force-renew
  - dhcp6
    - local-dhcp-server
      - failover
        - abort-startup-wait
        - force-partner-down
    - pool
      - failover
        - abort-startup-wait
        - force-partner-down
  - isis
    - ldp-sync-exit
    - overload
    - run-manual-spf
  - l2tp
    - group
      - drain
      - stop
      - tunnel
        - drain
        - start
        - stop
    - peer
      - drain
    - session
    - tunnel
      - drain
      - stop
  - mcac
    - recalc
  - mpls
    - adjust-autobandwidth
    - cspf
    - force-switch-path
    - manual-switch-path
    - resignal
    - resignal-bypass
    - revert
    - sr-te-cspf
    - switch-path
    - tp-tunnel
```

tools perform router mpls tp-tunnel clear

```
    - clear
    - force
    - lockout
    - manual
  - trap-suppress
  - update-path
- ospf
  - ldp-sync-exit
  - overLoad
  - refresh-lsas
  - run-manual-spf
- ospf3
  - ldp-sync-exit
  - overLoad
  - refresh-lsas
  - run-manual-spf
- pcp-server
  - set-epoch-value
- pim
  - mc-ecmp-rebalance
- satellite
  - force-uplink-switch
- security
  - authentication-server-check
  - dist-cpu-protection
    - release-hold-down
- service
  - dynamic-services
    - evaluate-script
  - eval-epipe-sap-template
  - eval-pw-template
  - eval-vpls-sap-template
  - eval-vpls-template
  - id
    - admin-lock
      - pw
        - sdp
    - endpoint
      - force-switchover
  - eval-epipe-sap-template
  - eval-pw-template
  - eval-vpls-sap-template
  - eval-vpls-template
  - instantiate-data-saps
  - interface
    - ignore-sap-port-state
  - loopback
    - eth
      - sap
      - sdp
    - pw
      - sdp
  - mcac
  - proxy-arp
    - dynamic-resolve
  - proxy-nd
    - dynamic-resolve
  - spb
    - run-manual-spf
- pw-routing
  - eval-expired-fec
  - spoke-sdp-fec-release
- subscriber-mgmt
  - bonding
```



tools perform subscr-mgmt bonding eval-rates

```
    - eval-rates
  - coa
  - credit-reset
  - edit-ipoe-session
  - edit-lease-state
  - edit-ppp-session
  - edit-slaac-host
  - eval-fate-sharing-group-template
  - eval-group-interface-template
  - eval-ipoe-session
  - eval-lease-state
  - eval-msap
  - eval-ppp-session
  - eval-sap-template
  - eval-slaac-host
  - forcerenew
  - local-user-db
    - ipoe
      - host-lookup
    - local-dhcp-db
    - ppp
      - authentication
      - host-lookup
      - host-lookup
  - ppp
    - ignore-ipv6cp-terminate-request
  - remap-lease-state
  - vrgw
    - brg
      - pppoe-client
      - restart
- system
  - auto-node-provisioning
    - file
    - ipv4
    - ipv6
  - bluetooth
    - module
  - cpm-http-redirect
    - tcp
      - settings
        - data-retransmissions
        - data-timeout
        - established-timeout
        - fin-ack-retransmissions
        - fin-ack-timeout
        - max-connections
        - max-connections-per-host
        - max-hosts
        - syn-ack-retransmissions
        - syn-ack-timeout
  - inter-chassis
    - sfm-interco-test
  - management-interface
    - configuration-mode
  - snmp
    - change-key
    - generate-key
  - script-control
    - script-policy
    - stop
  - set-fabric-speed
  - set-trim-mode
  - ssh
```

tools perform system ssh gen-keypair

```
    - gen-keypair
  - switch-fabric
    - failure-recovery
- test-oam
  - icmp
    - ping-template-sync
- wlan-gw
  - clear-ue
  - lanext
    - bd
      - clear-arp
      - clear-mac
      - clear-neighbor
      - clear-statistics
  - redundancy
    - force-switchover
```

## 3 2 Commands

### 3.1 24-hours

#### 24-hours

##### Syntax

**24-hours**

**24-hours application** *license-app*

**24-hours application** *license-app history*

**24-hours history**

##### Context

[\[Tree\]](#) (show>system>license-statistics 24-hours)

##### Full Context

show system license-statistics 24-hours

##### Description

This command displays application license statistics for the last 24 hours.

##### Parameters

***license-app***

Specifies the application license.

**Values**    Ins, nat, sub-mgmt, wlan-gw, aa, ipsec

**history**

Displays additional 24 hour statistics.

##### Platforms

VSR

## 4 a Commands

### 4.1 aa-anl-list

#### aa-anl-list

##### Syntax

**aa-anl-list** [**congested-only**] [**sort-type** { **top-by-subs** | **top-by-rate**}] [**isa** *mda-id*]

**aa-anl-list summary**

##### Context

**[Tree]** (tools>dump>app-assure>group aa-anl-list)

##### Full Context

tools dump application-assurance group aa-anl-list

##### Description

This command displays the list of active ANLs detected by AA along with the associated conditions (for example, congestion, measured rate, and number of subscribers).

##### Parameters

###### **congested-only**

Specifies only congested ANLs.

###### **sort-type**

Filters by the specified sub-type.

**Values** **top-by-subs** — Displays the top ANLs sorted by measured ANL bandwidth.

**top-by-rate** — Displays the top ANLs sorted by those ANLs that have the highest number of subscribers.

###### **mda-id**

Specifies the slot and MDA in the format *slot/mda*.

**Values** *slot*—1 to 10

*mda*—1 or 2

###### **summary**

Displays summary information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of aa-anl-list information.

### Output Example

```
A:Dut-C# tools dump application-assurance group 120:10 aa-anl-list
=====
Application-Assurance Access Network Location List: Group 120:10, ISA 3/1
=====
Type                Location                Congestion State    Rate (kbps)  Subscribers
-----
AP-MAC+VLAN        23:89:be:c2:64:50+1034  RTT Limits Exceeded  21961        113
AP-MAC+VLAN        83:2d:3d:73:c4:9a+4090  RTT Limits Exceeded  15963        86
AP-MAC+VLAN        f2:ee:cc:47:71:f7+0034  Not Congested        6147         12
=====
```

## 4.2 aa-interface

### aa-interface

#### Syntax

**aa-interface isa** *mda-id*

#### Context

[\[Tree\]](#) (show>app-assure>group aa-interface)

#### Full Context

show application-assurance group aa-interface

#### Description

This command displays AA interface information.

#### Parameters

***mda-id***

Specifies the MDA ID.

#### Values

<mda-id>	<slot>/<mda>
slot	[1 to 10] (depending on platform)
mda	[1 to 2]

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.3 aa-sub

### aa-sub

#### Syntax

**aa-sub esm** *sub-ident-string* [**snapshot**]

**aa-sub esm-mac** *esm-mac-name* [**snapshot**]

**aa-sub sap** *sap-id*

**aa-sub spoke-id** *sdp-id:vc-id* [**snapshot**]

**aa-sub transit** *transit-aasub-name* [**snapshot**]

#### Context

[\[Tree\]](#) (show>app-assure>group aa-sub)

#### Full Context

show application-assurance group aa-sub

#### Description

This command displays per-subscriber statistics.

#### Parameters

##### **esm sub-ident-string**

Specifies an existing subscriber identification string.

##### **esm-mac esm-mac-name**

Specifies an existing subscriber MAC.

##### **sap sap-id**

Specifies the physical port identifier portion of the SAP definition.

##### **spoke-id sdp-id:vc-id**

Specifies the spoke SDP ID and VC ID.

<b>Values</b>	1 to 17407
	1 to 4294967295

##### **snapshot**

Specifies that the statistics retrieved include the sum of the statistics from the previous collection windows, and the statistics for any closed flows since the last collection window.

**transit *transit-aasub-name***

Specifies an existing transit subscriber name string up to 32 characters in length.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of the **aa-sub** command information.

**Output Example**

```
*A:Dut-C# show application-assurance group 1 aa-sub spoke-sdp 1:1 snapshot application count
=====
Application-Assurance Subscriber 1:1 (spoke-sdp)
Application Statistics (snapshot)
=====
Application                Disc Octets                Packets                Flows
-----
Unknown                    0% 0                      0                      0
=====
*A:Dut-C#

show application-assurance group 1 aa-sub {esm <sub-ident-string> | esm-mac <esm-mac-name> |
  sap <sap-id> | spoke-sdp <sdp-id:vc-id> } summary
=====
Application-Assurance Subscriber summary (realtime | snapshot)
=====
AA-Subscriber              : <sub-ident-string> or <sap-id> or <sdp-id:vc-id>
ISA assigned                : <Slot/MDA> Unassigned
App-Profile                 : <app-profile-name>
App-Profile divert         : Yes or No
capacity-cost               : 100 // for sap/spoke-sdp & esm aa-sub)
Traffic                    Octets                Packets                Flows
-----
Admitted from subscriber:  0                      0                      0
Denied from subscriber:    0                      0                      0
Active flows from subscriber:
Admitted to subscriber:    0                      0                      0
Denied to subscriber:      0                      0                      0
Active flows to subscriber:
Total flow duration:       0 seconds
Terminated flows:         0
Short Duration flows:     0
Medium Duration flows:    0
Long Duration flows:      0

Top App-Groups            Octets                Packets                Flows
-----
<app-group-name>         100000                3000                  30
<app-group-name>         90000                  3000                  30
<app-group-name>         80000                  3000                  30
-----
Application Service Options (ASO)
-----
Characteristic            Value                Derived from
-----
Server                    Block                default
ServiceBw                  SuperUser            app-profile
Teleworker                  Yes                  override
VideoBoost                  Priority              override
```

```

Total characteristics      : 4
Total derived from aso defaults : 1
Total derived from app-profile : 1
Total derived from overrides  : 2
-----

A:ALA-IPD# show application-assurance group 1 aa-sub {esm <sub-ident-string>
| esm-mac <esm-mac-name> | sap <sap-id> | spoke-sdp <sdp-id:vc-id> | transit
<transit-aasub-name>} summary
=====
Application-Assurance Subscriber summary (realtime | snapshot)
=====
AA-Subscriber      : 1:1 (spoke-sdp)
ISA assigned       : 3/1
App-Profile        : app_prof_D_4
App-Profile divert : Yes
Capacity cost      : 1
-----

Traffic            Octets            Packets            Flows
-----
Admitted from subscriber: 0                0                0
Denied from subscriber: 0                0                0
Active flows from subscriber:
Admitted to subscriber: 0                0                0
Denied to subscriber: 0                0                0
Active flows to subscriber:
Total flow duration: 0 seconds
Terminated flows:
Short Duration flows:
Medium Duration flows:
Long Duration flows:

Top App-Groups      Octets            Packets            Flows
-----
<app-group-name>    100000            3000              30
<app-group-name>    90000             3000              30
<app-group-name>    80000             3000              30
=====

A:ALA-IPD#

A:ALA-IPD# show application-assurance group 1 aa-sub transit <transit-aasub-name>
summary
=====
Application-Assurance Subscriber summary (realtime | snapshot)
=====
AA-Subscriber      : <transit-aasub-name>
App-Profile        : <app-profile-name>

aa-filter          : aa-ip <aa-ip-filter-id> or aa-prefix <aa-prefix-filter-id>
  Parent           : SAP <sap-id> or Spoke-SDP <id> or N/A
  Parent ISA assigned : <Slot/MDA> or <None (fail-to-closed | fail-to-open)> or
Unassigned or N/A
  Parent app-profile : <app-profile-name> or N/A
  Parent divert      : Yes or No or N/A
  Parent capacity-cost : 2000 or N/A

Traffic            Octets            Packets            Flows
-----
Admitted from subscriber: 0                0                0
Denied from subscriber: 0                0                0
Active flows from subscriber:
Admitted to subscriber: 0                0                0
Denied to subscriber: 0                0                0
    
```



```

Active flows to subscriber:                                0
Total flow duration:      0 seconds
Terminated flows:        0
Short Duration flows:    0
Medium Duration flows:   0
Long Duration flows:     0

Top App-Groups      Octets      Packets      Flows
-----
<app-group-name>   100000      3000         30
<app-group-name>   90000       3000         30
<app-group-name>   80000       3000         30
=====

A:ALA-IPD#
show application-assurance group 1 aa-sub {esm <sub-ident-string> | esm-mac <esm-mac-name> | sap
<sap-id> | spoke-sdp <sdp-id:vc-id> | transit <transit-aasub-name>} count

A:ALA-IPD# show application-assurance group 1 aa-sub {esm <sub-ident-string> | esm-mac <esm-
mac-name> | sap <sap-id> | spoke-sdp <sdp-id:vc-id> | transit <transit-aasub-name>} snapshot
count
=====
Application-Assurance Subscriber esm|sap|spoke-sdp|transit <name>
Application Group, Application and Protocol Statistics (realtime | snapshot)
=====
Application Group      Disc Octets      Packets      Flows
-----
Games                  0% 0             0             0
Mail                   0% 0             0             0
Peer to Peer           0% 0             0             0
Unknown                0% 0             0             0
Web                    0% 0             0             0
=====
Application            Disc Octets      Packets      Flows
-----
SIP                    0% 0             0             0
-----
Protocol statistics are not configured in statistics>aa-sub
=====

A:ALA-IPD#

A:ALA-IPD# show application-assurance group 1 aa-sub {esm <sub-ident-string> | esm-mac <esm-
mac-name> | sap <sap-id> | spoke-sdp <sdp-id:vc-id> | transit <transit-aasub-name>}
application count detail
=====
Application-Assurance Subscriber esm|esm-mac|sap|spoke-sdp|transit <name>
Application Statistics (realtime | snapshot)
=====
Subscriber            Application:
Type                  Octets      Packets      Flows
-----
name
Admitted from subscriber: 0             0             0
Denied from subscriber:  0             0             0
Active flows from subscriber:
Admitted to subscriber:  0             0             0
Denied to subscriber:    0             0             0
Active flows to subscriber:
Max per min from sub:    1000         10
Max per min to sub:     2000         20
Total flow duration:    0 seconds
Terminated flows:      0
Short Duration flows:  0
    
```

```
Medium Duration flows:          0
Long Duration flows:           0
=====
A:ALA-IPD#
```

## aa-sub

### Syntax

**aa-sub dsm mac** *mac-address* [**snapshot**]

**aa-sub esm** *sub-ident-string*

**aa-sub esm-mac** *esm-mac-name*

**aa-sub transit** *transit-aasub-name*

### Context

[\[Tree\]](#) (tools>dump>app-assure>group aa-sub)

### Full Context

tools dump application-assurance group aa-sub

### Description

This command displays AA subscriber information for a specific ISA.

### Parameters

#### ***esm-mac-name***

Specifies the ESM MAC name; a maximum of 32 characters.

#### ***mac-address***

Specifies the MAC address in xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx format.

#### **snapshot**

Displays snapshot statistics.

#### ***sub-ident-string***

Specifies the AA subscriber identifier string, up to 32 characters.

#### ***transit-aasub-name***

Specifies the AA transit subscriber name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of AA subscriber information.

## Output Example

```
A:Dut-C# tools dump application-assurance group 120:10 aa-sub dsm mac 00:01:02:00:00:00
summary
=====
Application-Assurance Subscriber Summary (realtime)
=====
MAC                : 00:01:02:00:00:00 (dsm)
ISA assigned       : 3/1
Group              : 120:10
App-Profile        : AppPro1
HTTP URL Parameters : (Not Specified)
Access Network Location : 04:7d:be:fb:64:a8+0243 (Not Congested)
ANL Type           : AP-MAC+VLAN
Last HTTP Notified Time : N/A

-----
Traffic                Octets                Packets                Flows
-----
From subscriber:
  Admitted              0                    0                    0
  Denied                0                    0                    0
  Active flows          0                    0                    0
To subscriber:
  Admitted              0                    0                    0
  Denied                0                    0                    0
  Active flows          0                    0                    0
Flow counts:
  Short duration        0                    0                    0
  Med duration          0                    0                    0
  Long duration         0                    0                    0
Total flow duration : 0 seconds

-----
Application Service Options (ASO)
-----
Characteristic        Value                Derived from
-----
Char1                  val10               default
=====
```

## aa-sub

### Syntax

**aa-sub esm** *sub-ident-string*

**aa-sub esm-mac** *esm-mac-name*

**aa-sub sap** *sap-id*

**aa-sub spoke-id** *sdp-id:vc-id*

**aa-sub transit** *transit-aasub-name*

### Context

**[Tree]** (tools>perform>app-assure>group aa-sub)

## Full Context

tools perform application-assurance group aa-sub

## Description

This command performs application assurance group aa-sub operations.

## Parameters

### ***esm sub-ident-string***

Specifies an existing subscriber identification string.

### ***esm-mac esm-mac-name***

Specifies an existing subscriber MAC.

### ***sap sap-id***

Specifies the physical port identifier portion of the SAP definition.

### ***spoke-id sdp-id:vc-id***

Specifies the spoke SDP ID and VC ID.

**Values** 1 to 17407  
1 to 4294967295

### ***transit transit-aasub-name***

Specifies an existing transit subscriber name string up to 32 characters in length.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.4 aa-sub-list

### aa-sub-list

## Syntax

**aa-sub-list** [*isa mda-id*]

**aa-sub-list policers-exceeded**

**aa-sub-list summary**

## Context

**[Tree]** (show>app-assure>group aa-sub-list)

## Full Context

show application-assurance group aa-sub-list

## Description

This command displays AA subscriber lists.

## Parameters

### **isa mda-id**

Displays the slot and MDA ID.

**Values** 1 to 10 (depending on chassis model)  
 1, 2

### **summary**

Displays summary information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **aa-sub-list** command information.

### Output Example

```
*A:Dut-C# show application-assurance group 74:40346 aa-sub-list summary
=====
Application-Assurance Subscriber Summary for Group 74:40346
=====
      all      esm      sap      spoke-sdp  transit  esm-mac
-----
Total      100       0       0          0         0       100
Overrides  100       0       0          0         0       100
-----
Total number of aa-sub-s found           : 100
Total number of aa-sub-s with overrides found : 100
=====

*A:Dut-C# show application-assurance group 224:10559 aa-sub-list
=====
Application-Assurance Subscriber List for Group 224:10559
=====
type      aa-sub                ISA      App-Profile      divert
          assigned
-----
sap       1/1/1:113             3/2      prof_224_10559_1  Yes
sap       1/1/1:241             3/2      prof_224_10559_1  Yes
sap       1/1/1:369             3/2      prof_224_10559_1  Yes
sap       1/1/1:497             3/2      prof_224_10559_1  Yes
sap       1/1/4:113             3/2      prof_224_10559_2  Yes
sap       1/1/4:241             3/2      prof_224_10559_2  Yes
sap       1/1/4:369             3/2      prof_224_10559_2  Yes
sap       1/1/4:497             3/2      prof_224_10559_2  Yes
-----
Total number of aa-sub-s found           : 8
=====

*A:Dut-C#

A:Dut-C show application-assurance group 1 aa-sub-list
```

```

=====
Application-Assurance Subscriber List for Group 1
=====
type      aa-sub                ISA      App-Profile      divert
              assigned
-----
group 1:1
-----
sap      2/1/1:100              all      ap1               Yes
sap      2/1/1:200              esa-1/1  ap2               Yes
-----
Number of aa-subs found in group 1:1      : 2
Total number of aa-subs found              : 2
=====

*A:Dut-C#

*A:Dut-C# show application-assurance group 224:10559 aa-sub-list isa 3/2
=====
Application-Assurance Subscriber List for Group 224:10559, isa 3/2
=====
type      aa-sub                ISA      App-Profile      divert
              assigned
-----
sap      1/1/1:113              3/2     prof_224_10559_1  Yes
sap      1/1/1:241              3/2     prof_224_10559_1  Yes
sap      1/1/1:369              3/2     prof_224_10559_1  Yes
sap      1/1/1:497              3/2     prof_224_10559_1  Yes
sap      1/1/4:113              3/2     prof_224_10559_2  Yes
sap      1/1/4:241              3/2     prof_224_10559_2  Yes
sap      1/1/4:369              3/2     prof_224_10559_2  Yes
sap      1/1/4:497              3/2     prof_224_10559_2  Yes
-----
Total number of aa-subs found              : 8
=====

*A:Dut-C#

A:ALA-IPD# show application-assurance group 2 aa-sub-list [isa <mda-id>]
=====
Application-Assurance Subscriber List for Group 2, isa <slot/mda>
=====
type      aa-sub                ISA      App-Profile      divert
              assigned
-----
group 2:50
-----
esm      Bob                    3/1     Grp2P50appProf1  Yes
esm      Fred                    1/1     Grp2P50appProf2  Yes
sap      1/2/9                  3/1     Grp2P50appProf1  Yes
sap      1/2/10                 1/1     Grp2P50appProf2  Yes
spoke-sdp 1:7                    1/1     Grp2P50appProf1  Yes
spoke-sdp 2:101              3/1     Grp2P50appProf2  Yes
esm-mac  Sub3-000102030405     1/1     Grp2P50appProf2  Yes
-----
group 2:32656
-----
esm      Alex                    1/1     appProf1          Yes
esm      Sub1                    3/1     Lite               Yes
esm      Max                      3/1     appProf1          Yes
esm      tcpr_sub                1/1     appProf2          Yes
sap      1/2/5                    3/1     appProf1          Yes
sap      1/2/6                    1/1     appProf1          Yes
sap      2/2/4:111                1/1     Power              Yes
spoke-sdp 1:6                    1/1     appProf1          Yes
    
```

```

spoke-sdp 2:100          3/1    appProf2          Yes
esm-mac   Sub4-000203040506 3/1    appProf2          Yes
-----
Number of aa-subs found in group 2:50      : 6
Number of aa-subs found in group 2:32656   : 9
Total number of aa-subs found              : 15
=====
A:ALA-IPD#

A:ALA-IPD# show application-assurance group 2:32656 aa-sub-list [isa <mda-id>]
=====
Application-Assurance Subscriber List for Group 2:32656, isa <slot/mda>
=====
type      aa-sub                ISA      App-Profile      divert
           aa-sub                assigned
-----
esm       Alex                  1/1     appProf1         Yes
esm       Sub1                  3/1     Lite             Yes
esm       Max                   3/1     appProf1         Yes
esm       tcpr_sub             1/1     appProf2         Yes
sap       1/2/5                3/1     appProf1         Yes
sap       1/2/6                1/1     appProf1         Yes
sap       2/2/4:111            1/1     Power            Yes
spoke-sdp 2:100          1/1     appProf8         Yes
esm-mac   diameter_esm-000100000001 3/2     appProf2         Yes
esm-mac   diameter_esm-000100000002 3/2     appProf2         Yes
-----
Number of aa-subs : 8
=====
A:ALA-IPD#

*A:Dut-C# show application-assurance group 74 aa-sub-list isa 3/2
=====
Application-Assurance Subscriber List for Group 74, isa 3/2
=====
type      aa-sub                ISA      App-Profile      divert
           aa-sub                assigned
-----
group 74:40346
-----
esm-mac   diameter_esm-000100000001 3/2     appProf2         Yes
esm-mac   diameter_esm-000100000002 3/2     appProf2         Yes
    
```

## aa-sub-list

### Syntax

**aa-sub-list** [*filter-by-type sub-type*] [*isa mda-id*] **quarantined-only**  
**aa-sub-list** [*filter-by-type sub-type*] [*isa mda-id*] **policers-exceeded**  
**aa-sub-list summary**

### Context

**[Tree]** (tools>dump>app-assure>group aa-sub-list)

### Full Context

tools dump application-assurance group aa-sub-list

## Description

This command displays the AA subscriber list for a specific ISA.

## Parameters

### **filter-by-type** *sub-type*

Filters by the specified sub-type.

**Values** dsm, esm, esm-mac, sap, spoke-sdp, transit

### **mda-id**

Specifies the slot and MDA in the format *slot/mda*.

**Values** *slot*—1 to 10  
*mda*—1 or 2

### **summary**

Displays summary information.

### **quarantined-only**

Displays the AA subscribers that are under quarantine.

### **policers-exceeded**

Displays subscribers that have exceeded policer resources.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of AA subscriber list information.

### Output Example

```
*A:Dut-C# tools dump application-assurance group 1 aa-sub-list quarantined-only
=====
Application-Assurance Sub List (quarantined): Group 1, ISA 3/1
=====
Type          AA-Sub                               App Profile                               Part
              (Quarantined Since)                 (Last Quarantine Event)                  Id
-----
esm           Sub1                                  app-profile-1                              0
              (01/30/2018 14:25:22)                 (01/30/2018 15:27:3)
spoke-Sdp    1000:150                              app-profile-2                              0
              (01/30/2018 13:25:22)                 (01/30/2018 16:27:3)
esm-mac      Sub3-000102030405                     app-profile-1                              0
              (01/30/2018 12:25:22)                 (01/30/2018 17:27:3)
transit      t1                                      app-profile-4                              0
              (01/30/2018 11:25:22)                 (01/30/2018 18:27:3)
-----
Number of AA Subscribers : 4

*A:Dut-C# tools dump application-assurance group 1 aa-sub-list summary
=====
Application-Assurance Subscriber Summary for Group 1, ISA 5/2
```



```

=====
              all      esm      sap      spoke-  transit dsm      esm-mac
              -----
Total          0        0        0        0        0        0        0
Overrides     0        0        0        0        0        0        0
Pol Exceeded  0        0        0        0        0        0        0
Congested    0        0        0        0        0        0        0
Quarantined  0        0        0        0        0        0        0
-----
Total number of aa-subs found                : 0
Total number of aa-subs with overrides found  : 0
Total number of aa-subs with policer resources exceeded found : 0
Total number of congested aa-subs found      : 0
Total number of quarantined aa-subs found    : 0
=====
    
```

## 4.5 aa-sub-search

### aa-sub-search

#### Syntax

**aa-sub-search** *search-type* *granularity* [**direction** *direction*] [**max-count** *max-count*]

#### Context

**[Tree]** (tools>dump>app-assure>group aa-sub-search)

#### Full Context

tools dump application-assurance group aa-sub-search

#### Description

This command displays AA aa-sub information.

#### Parameters

##### **search-type**

Specifies the type of search.

**Values** top

##### **granularity**

Specifies the granularity of the search.

**Values** bytes, packets, flows

##### **direction direction**

Specifies the network/subscriber direction.

**Values** from-sub, to-sub, both

**max-count** *max-count*

Specifies the maximum flows to display.

**Values** 1 to 100

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of AA aa-sub information.

**Output Example**

```
A:Dut-C# tools dump application-assurance group 74 aa-sub-search top bytes
=====
Application-Assurance aa-sub search for Group 74: Top 10 by bytes (both)
=====
Entry isa SubType SubName
      From-sub-count To-sub-count Group:Partition Interval(UTC)
1 3/2 esm-mac "diameter_esm-000100000001"
  40 42 74:40346 "01/13/2017 14:39:18"
2 3/2 esm-mac "diameter_esm-000100000002"
  40 42 74:40346 "01/13/2017 14:39:18"
3 3/2 esm-mac "diameter_esm-000100000003"
  40 42 74:40346 "01/13/2017 14:39:18"
4 3/2 esm-mac "diameter_esm-000100000004"
  40 42 74:40346 "01/13/2017 14:39:18"
5 3/2 esm-mac "diameter_esm-000100000005"
  40 42 74:40346 "01/13/2017 14:39:18"
6 3/2 esm-mac "diameter_esm-000100000006"
  40 42 74:40346 "01/13/2017 14:39:18"
7 3/2 esm-mac "diameter_esm-000100000007"
  40 42 74:40346 "01/13/2017 14:39:18"
8 3/2 esm-mac "diameter_esm-000100000008"
  40 42 74:40346 "01/13/2017 14:39:18"
9 3/2 esm-mac "diameter_esm-000100000009"
  40 42 74:40346 "01/13/2017 14:39:18"
10 3/2 esm-mac "diameter_esm-00010000000a"
   40 42 74:40346 "01/13/2017 14:39:18"

Total number of aa-sub-s found: 10
```

## 4.6 aa-sub-study

### aa-sub-study

**Syntax**

**aa-sub-study esm** *sub-ident-string* [snapshot]

**aa-sub-study esm-mac** *esm-mac-name* [snapshot]

**aa-sub-study sap** *sap-id* [**snapshot**]  
**aa-sub-study spoke-sdp** *sdp-id:vc-id* [**snapshot**]  
**aa-sub-study transit** *transit-aasub-name* [**snapshot**]

## Context

[Tree] (show>app-assure>group aa-sub-study)

## Full Context

show application-assurance group aa-sub-study

## Description

This command displays per-subscriber special study statistics.

## Parameters

### **esm sub-ident-string**

Specifies an existing subscriber identification string.

### **esm-mac esm-mac-name**

Specifies an existing subscriber MAC.

### **sap sap-id**

Specifies the physical port identifier portion of the SAP definition.

### **spoke-id sdp-id:vc-id**

Specifies the spoke SDP ID and VC ID.

**Values** 1 to 17407  
1 to 4294967295

### **snapshot**

Specifies that the statistics retrieved include the sum of the statistics from the previous collection windows, and the statistics for any closed flows since the last collection window.

### **transit transit-aasub-name**

Specifies an existing transit subscriber name string.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.7 aa-sub-using

aa-sub-using

## Syntax

aa-sub-using

## **aa-sub-using app-profile *app-profile-name***

### **Context**

[\[Tree\]](#) (show>service aa-sub-using)

### **Full Context**

show service aa-sub-using

### **Description**

This command displays the subscribers and associated services diverted to Application Assurance using a specific app profile name.

### **Parameters**

#### ***app-profile-name***

Specifies the application profile name.

### **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### **Output**

The following output is an example of the **aa-sub-using** command information.

#### **Output Example**

```
*A:Dut-C# show service aa-sub-using
=====
Aa-Subscribers
=====
aa-sub-type  aa-sub-name                app-profile-name
-----
esm-mac      diameter_esm-000100000001    app-prof~%;&+-! ?
esm-mac      diameter_esm-000100000002    app-prof~%;&+-! ?
....
esm-mac      diameter_esm-000100000064    app-prof~%;&+-! ?
-----
Number of ESM subs           : 0
Number of ESM mac subs       : 100
Number of SAP subs           : 0
Number of Spoke-Sdp subs     : 0
Number of Transit subs       : 0
Total number of aa-sub      : 100
-----
```

## 4.8 aaa

```
aaa
```

### Syntax

```
aaa
```

### Context

[\[Tree\]](#) (clear aaa)

### Full Context

```
clear aaa
```

### Description

Commands in this context clear authentication, authorization, and accounting data.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
aaa
```

### Syntax

```
aaa
```

### Context

[\[Tree\]](#) (show aaa)

### Full Context

```
show aaa
```

### Description

Commands in this context display authentication, authorization, and accounting data.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

aaa

### Syntax

aaa

### Context

[\[Tree\]](#) (tools>dump aaa)

### Full Context

tools dump aaa

### Description

Commands in this context dump authentication, authorization, and accounting information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

aaa

### Syntax

aaa

### Context

[\[Tree\]](#) (tools>perform aaa)

### Full Context

tools perform aaa

### Description

Commands in this context perform AAA operations.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 4.9 aarp

```
aarp
```

### Syntax

```
aarp
```

```
aarp aarpld
```

### Context

```
[Tree] (show>app-assur aarp)
```

### Full Context

```
show application-assurance aarp
```

### Description

This command displays the Application Assurance Redundancy Protocol (AARP) instance status.

### Parameters

***aarpld***

Specifies an integer that identifies an AARP instance.

**Values** 1 to 65535

**detail**

Displays detailed information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

```
aarp
```

### Syntax

```
aarp aarpld event-history [clear]
```

### Context

```
[Tree] (tools>dump>application-assurance aarp)
```

### Full Context

```
tools dump application-assurance aarp
```

## Description

This command dumps application-assurance AARP information for a specified instance.

## Parameters

### *aarpld*

Specifies the AARP ID.

**Values** 1 to 65535

### *event-history*

Dumps historical information for the instance.

### *clear*

Clears the event history after reading.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## aarp

## Syntax

**aarp** *aarpld* **force-evaluate**

## Context

[\[Tree\]](#) (tools>perform>app-assure aarp)

## Full Context

tools perform application-assurance aarp

## Description

This command performs Application Assurance Redundancy Protocol instance operations.

## Parameters

### *aarpld*

Specifies an integer that identifies an AARP instance.

**Values** 1 to 65535

### *force-evaluate*

Forces a re-evaluation of the preferred AARP instance.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR



## 4.10 abort-startup-wait

### abort-startup-wait

#### Syntax

**abort-startup-wait**

#### Context

**[Tree]** (tools>perform>router>dhcp6>server>failover abort-startup-wait)

**[Tree]** (tools>perform>router>dhcp>server>failover abort-startup-wait)

**[Tree]** (tools>perform>router>dhcp6>server>pool>failover abort-startup-wait)

**[Tree]** (tools>perform>router>dhcp>server>pool>failover abort-startup-wait)

#### Full Context

tools perform router dhcp6 local-dhcp-server failover abort-startup-wait

tools perform router dhcp local-dhcp-server failover abort-startup-wait

tools perform router dhcp6 local-dhcp-server pool failover abort-startup-wait

tools perform router dhcp local-dhcp-server pool failover abort-startup-wait

#### Description

This command aborts the running start-up-wait time, forcing the DHCP server to transition immediately to the COMMUNICATIONS-INTERRUPTED state.

The start-up-wait time is started after a boot to enable two redundant routers to synchronize the DHCP server lease database before transitioning to the (PRE-)NORMAL state when the last state record from the peer is synchronized. If the last state record is not received before the start-up-wait time expires, it is assumed that the remote DHCP server is not operational and the DHCP server goes in COMMUNICATIONS-INTERRUPTED state.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 4.11 access-group

### access-group

#### Syntax

**access-group** [*group-name*]

## Context

[\[Tree\]](#) (show>system>security access-group)

## Full Context

show system security access-group

## Description

This command displays SNMP access group information.

## Parameters

**group-name**

This command displays information for the specified access group.

## Platforms

All

## Output

The following output is an example of access group information.

[Table 4: Show System Security Access Group Output Fields](#) describes security access group output fields.

### Output Example

```
A:ALA-4# show system security access-group
=====
Access Groups
=====
group name      security  security  read      write      notify
model           level     view      view      view
-----
snmp-ro         snmpv1   none      no-security      no-security
snmp-ro         snmpv2c  none      no-security      no-security
snmp-rw         snmpv1   none      no-security      no-security
snmp-rw         snmpv2c  none      no-security      no-security
snmp-rwa        snmpv1   none      iso              iso
snmp-rwa        snmpv2c  none      iso              iso
snmp-trap       snmpv1   none      iso              iso
snmp-trap       snmpv2c  none      iso              iso
=====
A:ALA-7#
```

Table 4: Show System Security Access Group Output Fields

Label	Description
Group name	The access group name.
Security model	The security model required to access the views configured in this node.
Security level	Specifies the required authentication and privacy levels to access the views configured in this node.

Label	Description
Read view	Specifies the variable of the view to read the MIB objects.
Write view	Specifies the variable of the view to configure the contents of the agent.
Notify view	Specifies the variable of the view to send a trap about MIB objects.

## access-group

### Syntax

**access-group** *group-name*

### Context

[\[Tree\]](#) (show>system>security access-group)

### Full Context

show system security access-group

### Description

This command displays access-group information.

### Platforms

All

### Output

The following output is an example of access group information.

[Table 5: Show System Security Access-Group Output Fields](#) describes the access-group output fields.

### Output Example

```
A:ALA-1# show system security access-group
=====
Access Groups
=====
group name      security  security  read      write      notify
model          level    view      view      view      view
-----
snmp-ro        snmpv1   none      no-security
snmp-ro        snmpv2c  none      no-security
snmp-rw        snmpv1   none      no-security  no-security
snmp-rw        snmpv2c  none      no-security  no-security
snmp-rwa       snmpv1   none      iso         iso         iso
snmp-rwa       snmpv2c  none      iso         iso         iso
snmp-trap      snmpv1   none      no-security
snmp-trap      snmpv2c  none      no-security
-----
No. of Access Groups: 8
=====
```

```

A:ALA-1#

A:ALA-1# show system security access-group detail
=====
Access Groups
=====
group name      security security  read      write      notify
                model    level    view      view      view
-----
snmp-ro        snmpv1  none     no-security      no-security
-----
No. of Access Groups:
...
=====
A:ALA-1#
    
```

Table 5: Show System Security Access-Group Output Fields

Label	Description
Group name	The access group name.
Security model	The security model required to access the views configured in this node.
Security level	Specifies the required authentication and privacy levels to access the views configured in this node.
Read view	Specifies the view to read the MIB objects.
Write view	Specifies the view to configure the contents of the agent.
Notify view	Specifies the view to send a trap about MIB objects.
No. of access groups	The total number of configured access groups.

## 4.12 accounting-policy

### accounting-policy

#### Syntax

accounting-policy [acct-policy-id] [access | network] [associations]

#### Context

[Tree] (show>log accounting-policy)

#### Full Context

show log accounting-policy

## Description

This command displays accounting policy information.

## Parameters

### *policy-id*

Specifies the policy ID that uniquely identifies the accounting policy, expressed as a decimal integer.

**Values** 1 to 99

### **access**

Specifies to only display access accounting policies.

### **network**

Specifies to only display network accounting policies.

### **association**

Displays accounting-policy associations.

## Platforms

All

## Output

The following output is an example of accounting policy information.

[Table 6: Show Accounting Policy Output Fields](#) describes accounting policy output fields.

### Output Example

```
A:ALA-1# show log accounting-policy
=====
Accounting Policies
=====
Policy Type   Def Admin Oper  Intvl   File Record Name
Id           State State      State   Id
-----
1     network No  Up    Up    15     1  network-ingress-packets
2     network Yes Up    Up    15     2  network-ingress-octets
10    access  Yes Up    Up    5      3  complete-service-ingress-egress
=====
A:ALA-1#

A:ALA-1# show log accounting-policy 10
=====
Accounting Policies
=====
Policy Type   Def Admin Oper  Intvl   File Record Name
Id           State State      State   Id
-----
10    access  Yes Up    Up    5      3  complete-service-ingress-egress

Description : (Not Specified)

This policy is applied to:
  Svc Id: 100  SAP : 1/1/8:0    Collect-Stats
  Svc Id: 101  SAP : 1/1/8:1    Collect-Stats
```

```

Svc Id: 102  SAP : 1/1/8:2    Collect-Stats
Svc Id: 103  SAP : 1/1/8:3    Collect-Stats
Svc Id: 104  SAP : 1/1/8:4    Collect-Stats
Svc Id: 105  SAP : 1/1/8:5    Collect-Stats
Svc Id: 106  SAP : 1/1/8:6    Collect-Stats
Svc Id: 107  SAP : 1/1/8:7    Collect-Stats
Svc Id: 108  SAP : 1/1/8:8    Collect-Stats
Svc Id: 109  SAP : 1/1/8:9    Collect-Stats
...
=====
A:ALA-1#

A:ALA-1# show log accounting-policy network
=====
Accounting Policies
=====
Policy Type   Def Admin Oper  Intvl   File Record Name
Id           State State          Id
-----
1    network No  Up    Up    15      1  network-ingress-packets
2    network Yes Up    Up    15      2  network-ingress-octets
=====
A:ALA-1#

A:ALA-1# show log accounting-policy access
=====
Accounting Policies
=====
Policy Type   Def Admin Oper  Intvl   File Record Name
Id           State State          Id
-----
10   access  Yes Up    Up    5       3  complete-service-ingress
=====
A:ALA-1#
    
```

Table 6: Show Accounting Policy Output Fields

Label	Description
Policy ID	The identifying value assigned to a specific policy.
Type	Identifies accounting record type forwarded to the configured accounting file.  access — Indicates that the policy is an access accounting policy.  network — Indicates that the policy is a network accounting policy.  none — Indicates no accounting record types assigned.
Def	Yes — Indicates that the policy is a default access or network policy.  No — Indicates that the policy is not a default access or network policy.
Admin State	Displays the administrative state of the policy.  Up — Indicates that the policy is administratively enabled.

Label	Description
	Down — Indicates that the policy is administratively disabled.
Oper State	Displays the operational state of the policy. Up — Indicates that the policy is operationally up. Down — Indicates that the policy is operationally down.
Intvl	Displays the interval, in minutes, in which statistics are collected and written to their destination. The default depends on the record name type.
File ID	The log destination.
Record Name	The accounting record name which represents the configured record type.
This policy is applied to	Specifies the entity where the accounting policy is applied.

## 4.13 accounting-records

### accounting-records

#### Syntax

accounting-records

#### Context

[\[Tree\]](#) (show>log accounting-records)

#### Full Context

show log accounting-records

#### Description

This command displays accounting policy record names.

#### Platforms

All

#### Output

The following output is an example of accounting records output information.

[Table 7: Accounting Policy Output Fields](#) describes accounting records output fields.

Table 7: Accounting Policy Output Fields

Label	Description
Record #	The record ID that uniquely identifies the accounting policy, expressed as a decimal integer.
Record Name	The accounting record name.
Def. Interval	The default interval, in minutes, in which statistics are collected and written to their destination.

**Output Example**



**Note:**

aa, video and subscriber records are not applicable to the 7950 XRS.

```
# show log accounting-records
=====
Accounting Policy Records
=====
Record # Record Name                Def. Interval
-----
1      service-ingress-octets           5
2      service-egress-octets            5
3      service-ingress-packets           5
4      service-egress-packets            5
5      network-ingress-octets            15
6      network-egress-octets             15
7      network-ingress-packets           15
8      network-egress-packets            15
9      compact-service-ingress-octets    5
10     combined-service-ingress          5
11     combined-network-ing-egr-octets   15
12     combined-service-ing-egr-octets   5
13     complete-service-ingress-egress   5
14     combined-sdp-ingress-egress       5
15     complete-sdp-ingress-egress       5
16     complete-subscriber-ingress-egress 5
17     aa-protocol                        15
18     aa-application                    15
19     aa-app-group                      15
20     aa-subscriber-protocol            15
21     aa-subscriber-application         15
23     custom-record-subscriber          5
24     custom-record-service             5
25     custom-record-aa-sub              15
26     queue-group-octets                15
27     queue-group-packets               15
28     combined-queue-group              15
29     combined-mpls-lsp-ingress         5
30     combined-mpls-lsp-egress          5
31     combined-ldp-lsp-egress           5
32     saa                               5
33     video                             10
34     kpi-system                        5
35     kpi-bearer-mgmt                   5
36     kpi-bearer-traffic                5
37     kpi-ref-point                     5
```



```

38      kpi-path-mgmt          5
39      kci-iom-3             5
40      kci-system            5
41      kci-bearer-mgmt      5
42      kci-path-mgmt        5
43      complete-kpi         5
44      complete-kci         5
45      kpi-bearer-group     5
46      kpi-ref-path-group   5
47      kpi-kci-bearer-mgmt  5
48      kpi-kci-path-mgmt    5
49      kpi-kci-system       5
50      complete-kpi-kci     5
51      aa-performance       15
52      complete-ethernet-port 15
53      extended-service-ingress-egress 5
54      complete-network-ing-egr 15
55      aa-partition         15
56      complete-pm          5
63      aa-admit-deny        15
0       nat-binding-port-block 0
65      network-interface-ingress-octets 15
66      network-interface-egress-octets 15
67      network-interface-ingress-packets 15
68      network-interface-egress-packets 15
69      combined-network-interface-ingress 15
70      combined-network-interface-egress 15
71      complete-network-interface-ing-egr 15
72      access-egress-octets 15
73      access-egress-packets 15
74      combined-access-egress 15
75      combined-network-egress 15
76      complete-service-activation-test 5
77      combined-mpls-srte-egress 5
=====
    
```

**Table 8: Default Collection Interval for Accounting Records** lists the accounting record names available and the default collection interval.

*Table 8: Default Collection Interval for Accounting Records*

Record Type	Accounting Record Name	Default Interval
1	service-ingress-octets	5
2	service-egress-octets	5
3	service-ingress-packets	5
4	service-egress-packets	5
5	network-ingress-octets	15
6	network-egress-octets	15
7	network-ingress-packets	15
8	network-egress-packets	15
9	compact-service-ingress-octets	5

Record Type	Accounting Record Name	Default Interval
10	combined-service-ingress	5
11	combined-network-ing-egr-octets	15
12	combined-service-ing-egr-octets	5
13	complete-service-ingress-egress	5
14	combined-sdp-ingress-egress	5
15	complete-sdp-ingress-egress	5
16	complete-subscriber-ingress-egress	5
17	aa-protocol	15
18	aa-application	15
19	aa-app-group	15
20	aa-subscriber-protocol	15
21	aa-subscriber-application	15
23	custom-record-subscriber	5
24	custom-record-service	5
25	custom-record-aa-sub	15
26	queue-group-octets	15
27	queue-group-packets	15
28	combined-queue-group	15
29	combined-mpls-lsp-ingress	5
30	combined-mpls-lsp-egress	5
31	combined-ldp-lsp-egress	5
32	saa	5
33	video	10
34	kpi-system	5
35	kpi-bearer-mgmt	5
36	kpi-bearer-traffic	5
37	kpi-ref-point	5

Record Type	Accounting Record Name	Default Interval
38	kpi-path-mgmt	5
39	kci-iom-3	5
40	kci-system	5
41	kci-bearer-mgmt	5
42	kci-path-mgmt	5
43	complete-kpi	5
44	complete-kci	5
45	kpi-bearer-group	5
46	kpi-ref-path-group	5
47	kpi-kci-bearer-mgmt	5
48	kpi-kci-path-mgmt	5
49	kpi-kci-system	5
50	complete-kpi-kci	5
51	aa-performance	15
52	complete-ethernet-port	15
53	extended-service-ingress-egress	5
54	complete-network-ing-egr	15
55	aa-partition	15
56	complete-pm	5
63	aa-admit-deny	15
0	nat-binding-port-block	0
65	network-interface-ingress-octets	15
66	network-interface-egress-octets	15
67	network-interface-ingress-packets	15
68	network-interface-egress-packets	15
69	combined-network-interface-ingress	15
70	combined-network-interface-egress	15

Record Type	Accounting Record Name	Default Interval
71	complete-network-interface-ing-egr	15
72	access-egress-octets	15
73	access-egress-packets	15
74	combined-access-egress	15
75	combined-network-egress	15
76	complete-service-activation-test	5
77	combined-mpls-srte-egress	5

## 4.14 acct-off

### acct-off

#### Syntax

**acct-off** [**radius-server-policy** *policy-name*] [**force**] [**acct-terminate-cause** *number*]

#### Context

[\[Tree\]](#) (tools>perform>aaa acct-off)

#### Full Context

tools perform aaa acct-off

#### Description

This command triggers a RADIUS Accounting-Off message:

- for all radius-server-policies that have acct-on-off configured
- for the specified radius-server-policy if the acct-on-off is configured

The Accounting-Off message is not sent when the last successful event for the radius server policy was an Accounting-Off message. In this case, an Accounting-On should be sent first. By specifying the keyword **force**, this is overruled.

#### Parameters

##### *policy-name*

Specifies the **radius-server-policy** for which the Accounting-Off should be sent.

##### **force**

Sends an Accounting-On also if the last successful event was an Accounting-Off.

***number***

Overrides the default Acct-Terminate-Cause (User-Request) in the Accounting-Off message.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 4.15 acct-on

### acct-on

**Syntax**

**acct-on** [**radius-server-policy** *policy-name*] [**force**]

**Context**

[\[Tree\]](#) (tools>perform>aaa acct-on)

**Full Context**

tools perform aaa acct-on

**Description**

This command triggers a RADIUS Accounting-On message:

- for all radius-server-policies that have acct-on-off configured.
- for the specified radius-server-policy if the acct-on-off is configured

The Accounting-On message is not sent when the last successful event for the RADIUS server policy was an Accounting-On message. In this case, an Accounting-Off should be sent first. By specifying the keyword **force**, this is overruled.

**Parameters**

***policy-name***

Specifies the **radius-server-policy** for which the Accounting-On should be sent.

**force**

Sends an Accounting-On also if the last successful event was an Accounting-On.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 4.16 acct-on-off-group

### acct-on-off-group

#### Syntax

**acct-on-off-group** *[group-name]*

#### Context

[\[Tree\]](#) (show>aaa acct-on-off-group)

#### Full Context

show aaa acct-on-off-group

#### Description

This command displays Acct-On-Off group information and the associated RADIUS server policies.

#### Parameters

***group-name***

Displays information pertaining to the specified acct-on-off group.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of AAA Acct-On-Off group information.

#### Output Example

```
# show aaa acct-on-off-group "group-1"
=====
Acct-On-Off-Group Information
=====
acct on off group name           : group-1
- controlling Radius-Server-policy :
  aaa-server-policy-3
- monitored by Radius-Server-policy :
  aaa-server-policy-4
-----
Nbr of Acct-on-off-groups displayed : 1
-----
=====
```

Table 9: WiFi Acct-On-Off Field Descriptions

Label	Description
acct on off group name	The name of a RADIUS server policy Accounting-On-Off-Group
controlling Radius-Server-policy	The controlling RADIUS server policy name
monitored by Radius-Server-policy	The policy monitored a RADIUS server policy.
Nbr of Acct-on-off-groups displayed	The RADIUS policy that controls the Acct-On-Off group

## 4.17 accu-stats

### accu-stats

#### Syntax

**accu-stats subscriber** *subscriber-id*

#### Context

[\[Tree\]](#) (show>subscriber-mgmt accu-stats)

#### Full Context

show subscriber-mgmt accu-stats

#### Description

This command displays the accumulated statistics for both online and offline statistics.

#### Parameters

***subscriber-id***

Specifies the subscriber ID, up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of subscriber statistics.

### Output Example

```
A:active# show subscriber-mgmt accu-stats subscriber home-1
=====
Subscriber accumulated statistics for "home-1"
=====

-----
Subscriber accumulated statistics ingress queue 1
-----
                                packets          octets
-----
Offered high priority           0              0
Offered low priority            0              0
Dropped high priority           0              0
Dropped low priority            0              0
Forwarded in-profile            0              0
Forwarded out-of-profile        0              0
-----

-----
Subscriber accumulated statistics egress queue 1
-----
                                packets          octets
-----
Forwarded in-profile            0              0
Forwarded out-of-profile        0              0
Dropped in-profile              0              0
Dropped out-of-profile          0              0
-----
=====
```

[Table 10: Accumulated Statistics Field Descriptions](#) describes accumulated statistics output fields.

*Table 10: Accumulated Statistics Field Descriptions*

Field	Description
packets	The number of packets associated with this policy
octets	The number of octets associated with this policy
Offered high priority	The number of offered high priority packets or octets
Offered low priority	The number of offered low priority packets or octets
Dropped high priority	The number of dropped high priority packets or octets
Forwarded in-profile	The number of forwarded in-profile packets or octets
Forwarded out-of-profile	The number of forwarded out-of-profile packets or octets
Dropped in-profile	The number of dropped in-profile packets or octets
Dropped out-of-profile	The number of dropped out-of-profile packets or octets



## accu-stats

### Syntax

```
accu-stats active subs no-accu-stats-policy
accu-stats active subs sub-profile profile-name
accu-stats inactive subs
accu-stats subscriber subscriber-id
```

### Context

[\[Tree\]](#) (clear>subscriber-mgmt accu-stats)

### Full Context

```
clear subscriber-mgmt accu-stats
```

### Description

This command removes the accumulated statistics for a subscriber.

### Parameters

#### **active subs no-accu-stats-policy**

Removes the accumulated statistics that are no longer associated with an **accu-stats-policy**. These are active subscribers that are referencing a subscriber profile that removed an **accu-stats-policy**.

#### **active subs sub-profile *profile-name***

Removes the accumulated statistics for the specified subscriber profile.

#### **inactive subs**

Removes the accumulated statistics from all inactive subscribers.

#### ***profile-name***

Specifies the subscriber profile up to 32 characters.

#### ***subscriber-id***

Specifies the subscriber up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 4.18 accu-stats-policy

### accu-stats-policy

#### Syntax

**accu-stats-policy**

**accu-stats-policy** *policy-name* [**associations**]

#### Context

**[Tree]** (show>subscriber-mgmt accu-stats-policy)

#### Full Context

show subscriber-mgmt accu-stats-policy

#### Description

This command displays the configuration of the accumulated statistics policy for the subscriber profile that referenced the accumulated statistics policy.

#### Parameters

##### *policy-name*

Specifies the policy name, up to 32 characters.

##### **associations**

Lists the sub-profile that referenced the policy.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of subscriber management accumulated statistics information.

#### Output Example

```
A:active# show subscriber-mgmt accu-stats-policy "accu-stats-policy-01" associations
=====
Subscriber profile associations
=====
no-prof
sub-prof
-----
=====
No. of subscriber profiles: 2
=====
```

```
A:active# show subscriber-mgmt accu-stats-policy "accu-stats-policy-01"
=====
Subscriber accumulated statistics policy accu-stats-policy-01
```

```

=====
Description                : (Not Specified)
Last management change     : 09/23/2016 16:48:46
=====

Entries
=====
Direction Type    Id
-----
ingress  queue    1
egress   queue    1
=====
    
```

**Table 11: Accumulated Statistics Policy Field Descriptions** describes subscriber management accumulated statistics policy fields.

*Table 11: Accumulated Statistics Policy Field Descriptions*

Field	Description
Description	The user provided description of this policy
Last management change	The date and time of the last management change
Direction Type	The specific direction for the policer or the queue to be stored, ingress or egress
ID	The queue ID
No. of subscriber profiles	The number of entries matching the search criteria

## 4.19 accu-stats-subscribers

### accu-stats-subscribers

#### Syntax

**accu-stats-subscribers** [**subscriber** *sub-ident*] [**sub-profile** *name*]

#### Context

[\[Tree\]](#) (show>subscriber-mgmt accu-stats-subscribers)

#### Full Context

show subscriber-mgmt accu-stats-subscribers

#### Description

This command lists all subscribers on the system that had referenced an accumulated statistics policy. The list contains subscribers that are currently referencing an **accu-stats-policy** as well as subscribers that no longer reference an **accu-stats-policy** (due to removal of the policy from the subscriber profile).

## Parameters

### *sub-ident*

Specifies a specific subscriber ID, up to 32 characters.

### *sub-profile name*

Lists all subscribers that are referencing the specified subscriber profile, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management accumulated statistics information.

### Output Example

```
*DUT# show subscriber-mgmt accu-stats-subscribers
=====
Subscribers with accumulated statistics
=====
Subscriber                : home-1
Subscriber profile        : no-prof
Accumulated-stats policy  : accu-stats-policy-01
-----
Subscriber                : home-2
Subscriber profile        : no-prof
Accumulated-stats policy  : accu-stats-policy-02
-----
Subscriber                : twamp-host
Subscriber profile        : no-prof
Accumulated-stats policy  : (Unknown)
-----
No. of Subscribers with accumulated statistics: 3
=====
```

### Output Example

The **show subscriber-mgmt status system** command shows the number of subscribers using accumulated statistics and whether the statistics usage has reached the peak value.

```
*A:Dut-C# show subscriber-mgmt status system
=====
Subscriber Management System Status
=====
Chassis 1
-----
Memory usage high                : No
DHCP message processing overload  : No
Statistics usage high             : Yes
Number of subscribers using statistics : 131072
Data-trigger statistics
-----
Packets received                  : 0
Packets dropped                   : 0
Packets in queue (actual)        : 0
Packets in queue (peak)         : 0
Bridged Residential Gateway statistics
-----
```

```
BRG initialized : 0
BRG operational : 0
BRG in connectivity verification : 0
BRG on hold : 0
BRG authenticated by proxy : 0
=====
```

**Table 12: Status System Field Descriptions** describes subscriber management status system fields.

*Table 12: Status System Field Descriptions*

Field	Description
Chassis	The chassis number
Memory usage high	The memory usage of the subscriber management function on this chassis is near the limit; Yes or No
DHCP message processing overload	The subscriber management DHCP message processing function is in overload; Yes or No
Statistics usage high	The memory used for subscriber statistics on this chassis is near the limit; Yes or No
Number of subscribers using statistics	The number of subscribers using memory to store accumulated statistics
Packets received	The number of data packets received that may trigger creation of data-triggered subscriber hosts on this system
Packets dropped	The number of data packets dropped that could have triggered creation of data-triggered subscriber hosts on this system
Packets in queue (actual)	The number of data packets currently in the waiting queue that may trigger creation of data-triggered subscriber hosts on this system
Packets in queue (peak)	The maximum value of the packets in queue object since the start up of this system or the last time that the value of packets in queue was reset
BRG initialized	The number of BRGs with the init timer running; waiting for the first host
BRG operational	The number of BRGs in the normal operating state, with dynamic hosts
BRG in connectivity verification	The number of BRGs with no hosts, pinging the residential gateway
BRG on hold	The number of BRGs with no hosts attached, in hold
BRG authenticated by proxy	The number of BRGs in this system

## 4.20 activate-best-dest

### activate-best-dest

#### Syntax

**activate-best-dest**

#### Context

[\[Tree\]](#) (tools>perform>filter>redirect-policy activate-best-dest)

#### Full Context

tools perform filter redirect-policy activate-best-dest

#### Description

This command allows the operator to force a PBR switch to the best destination selected by the redirect policy when that destination is not currently active as result of sticky destination functionality being enabled for the specified redirect policy. If **hold-time-up** is running, the timer is also expired.

#### Platforms

All

## 4.21 activate-primary-action

### activate-primary-action

#### Syntax

**activate-primary-action**

#### Context

[\[Tree\]](#) (tools>perform>filter>ipv6-filter>entry activate-primary-action)

[\[Tree\]](#) (tools>perform>filter>mac-filter>entry activate-primary-action)

[\[Tree\]](#) (tools>perform>filter>ip-filter>entry activate-primary-action)

#### Full Context

tools perform filter ipv6-filter entry activate-primary-action

tools perform filter mac-filter entry activate-primary-action

tools perform filter ip-filter entry activate-primary-action

## Description

This command allows an operator to activate the primary action for the given filter policy entry. If the primary action is already active, the command has no effect. If a secondary action is active, the primary action will be activated unless the primary target is down. If the sticky destination timer is running for the primary action entry, it will expire.

## Platforms

All

## 4.22 active

### active

#### Syntax

**active egress-lsp** [*tunnel-id*]

**active detail** [*family*] [**egress-if** *port-id*]

**active detail** [*family*] [**egress-lsp** *tunnel-id*]

**active detail** [**egress-nh** *ip-address*] [*family*]

**active egress-if** *port-id* [**summary** | **detail**] [*family*]

**active egress-lsp** *tunnel-id* [**summary** | **detail**] [*family*]

**active egress-nh** [*family*] [**summary** | **detail**] *ip-address*

**active ipv4** [**summary** | **detail**] [**egress-if** *port-id*]

**active ipv4** [**summary** | **detail**] [**egress-lsp** *tunnel-id*]

**active ipv4** [**summary** | **detail**] [**egress-nh** *ip-address*]

**active ipv6** [**summary** | **detail**] [**egress-if** *port-id*]

**active ipv6** [**summary** | **detail**] [**egress-nh** *ip-address*]

**active ipv6** [**summary** | **detail**] [**egress-lsp** *tunnel-id*]

**active p2mp p2mp-id** *identifier* **root** *ip-address* [**summary** | **detail**] [**egress-if** *port-id*]

**active p2mp p2mp-id** *identifier* **root** *ip-address* [**summary** | **detail**] [**egress-lsp** *tunnel-id*]

**active p2mp p2mp-id** *identifier* **root** *ip-address* [**summary** | **detail**] [**egress-nh** *ip-address*]

**active p2mp p2mp-id** *identifier* **root** *ip-address* [**rd** *rd*] [**summary** | **detail**] [**egress-if** *port-id*] **inner-root** *ip-address*

**active p2mp p2mp-id** *identifier* **root** *ip-address* [**rd** *rd*] [**summary** | **detail**] [**egress-lsp** *tunnel-id*] **inner-root** *ip-address*

**active p2mp p2mp-id** *identifier* **root** *ip-address* [**rd** *rd*] [**summary** | **detail**] [**egress-nh** *ip-address*] **inner-root** *ip-address*

**active p2mp** [*family*] [**summary** | **detail**] [**egress-if** *port-id*] [**opaque-type** *opaque-type*]

**active p2mp** [*family*] [**summary** | **detail**] [**egress-lsp** *tunnel-id*] [**opaque-type** *opaque-type*]

**active p2mp** [*family*] [**summary** | **detail**] [**egress-nh** *ip-address*] [**opaque-type** *opaque-type*]

**active p2mp source** *ip-address* **group** *mcast-address* **root** *ip-address* [**summary** | **detail**] [**egress-if** *port-id*] **inner-root** *ip-address*

**active p2mp source** *ip-address* **group** *mcast-address* **root** *ip-address* [**summary** | **detail**] [**egress-lsp** *tunnel-id*] **inner-root** *ip-address*

**active p2mp source** *ip-address* **group** *mcast-address* **root** *ip-address* [**summary** | **detail**] [**egress-nh** *ip-address*] **inner-root** *ip-address*

**active p2mp source** *ip-address* **group** *mcast-address* **root** *ip-address* [**rd** *rd*] [**summary** | **detail**] [**egress-if** *port-id*]

**active p2mp source** *ip-address* **group** *mcast-address* **root** *ip-address* [**rd** *rd*] [**summary** | **detail**] [**egress-lsp** *tunnel-id*]

**active p2mp source** *ip-address* **group** *mcast-address* **root** *ip-address* [**rd** *rd*] [**summary** | **detail**] [**egress-nh** *ip-address*]

**active p2mp source** *ip-address* **group** *mcast-address* **root** *ip-address* [**rd** *rd*] [**summary** | **detail**] [**innermost-root** *ip-address*]

**active prefixes** [*family*] [**summary** | **detail**] [**egress-if** *port-id*] [**community** *community*]

**active prefixes** [*family*] [**summary** | **detail**] [**egress-lsp** *tunnel-id*] [**community** *community*]

**active prefixes** [**egress-nh** *ip-address*] [**family**] [**summary** | **detail**] [**community** *community*]

**active prefixes prefix** *ip-prefix/ip-prefix-length* [**summary** | **detail**] [**egress-if** *port-id*] [**community** *community*]

**active prefixes prefix** *ip-prefix/ip-prefix-length* [**summary** | **detail**] [**egress-lsp** *tunnel-id*] [**community** *community*]

**active prefixes prefix** *ip-prefix/ip-prefix-length* [**egress-nh** *ip-address*] [**summary** | **detail**] [**community** *community*]

**active summary** [*family*] [**egress-if** *port-id*]

**active summary** [*family*] [**egress-lsp** *tunnel-id*]

**active summary** [**egress-nh** *ip-address*] [**family**]

## Context

[\[Tree\]](#) (show>router>ldp>bindings active)

## Full Context

show router ldp bindings active

## Description

This command display information about LDP active bindings.

## Parameters

### detail

Displays detailed information.

### summary

Displays information in a summarized format.



### family

Displays either IPv4 or IPv6 active LDP information.

### opaque-type *opaque-type*

Specifies the type of a Multi-Point Opaque Value Element.

**Values** generic, ssm, vpn-ssm, recursive-ssm

### egress-lsp *tunnel-id*

Displays LDP active bindings by matching on the egress RSVP-TE LSP *tunnel-id* for LDP FECs which are tunneled over a RSVP-TE LSP. The *tunnel-id* for the RSVP-TE LSP can be found in the output of the **show router mpls lsp detail** command and in the **show router tunnel-table** command. It is not the *path LSP ID* shown in the output of the **show router mpls lsp path detail** command.

**Values** 0 to 4294967295

### egress-nh *ip-address*

Displays LDP active bindings by matching egress-nh.

**Values**

ipv4-address	- a.b.c.d
ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x - [0 to FFFF]H
	d - [0 to 255]D

### egress-if *port-id*

Displays LDP active bindings by matching egress-if.

### inner-root *ip-address*

Displays recursive FECs whose inner root address matches the specified address.

### innermost-root *ip-address*

Displays recursive FECs whose inner root address matches the specified address and non-recursive FECs that have a root address that matches the specified address.

### p2mp source *ip-address*

Displays LDP active P2MP source bindings.

**Values**

ipv4-address	- a.b.c.d
ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x - [0 to FFFF]H
	d - [0 to 255]D

**p2mp-id identifier**

Displays LDP active P2MP identifier bindings.

**Values** 0 to 4294 967 295

**group mcast-address**

Displays the P2MP group multicast address bindings.

**root ip-address**

Displays root IP address information.

**rd rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

**prefix ip-prefix/ip-prefix-length**

Specifies information for the specified IP prefix and mask length.

**Values**

ipv4-address	- a.b.c.d
ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x - [0 to FFFF]H
	d - [0 to 255]D

**community**

The string defining the LDP community assigned to the session. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters excluding double quotes. If the string contains spaces, use double quotes to delimit the start and end of the string.

**Platforms**

All

**Output**

**Output Example**

```
*A:Dut-C# show router ldp bindings active
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
              (IPv6 LSR ID 3ffe::a14:103[0])
=====
Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, M - Community Mismatch, BA - ASBR Backup FEC
```

```

(S) - Static          (M) - Multi-homed Secondary Support
(B) - BGP Next Hop   (BU) - Alternate Next-hop for Fast Re-Route
(I) - SR-ISIS Next Hop (O) - SR-OSPF Next Hop
(C) - FEC resolved with class-based-forwarding
  
```

---

LDP IPv4 Prefix Bindings (Active)

---

Prefix EgrNextHop	Op EgrIf/LspId	IngLbl	EgrLbl
10.20.1.1/32 10.10.2.1	Push 1/1/1	--	262143
10.20.1.1/32 10.10.2.1	Swap 1/1/1	262141	262143
10.20.1.2/32 10.10.12.2	Push lag-1	--	262143
10.20.1.2/32 10.10.12.2	Swap lag-1	262140	262143
10.20.1.3/32 --	Pop --	262143	--
10.20.1.4/32 10.10.11.4	Push 2/1/2	--	262143
10.20.1.4/32 10.10.11.4	Swap 2/1/2	262139	262143
10.20.1.5/32 10.10.5.5	Push 2/1/1	--	262143
10.20.1.5/32 10.10.5.5	Swap 2/1/1	262137	262143
10.20.1.6/32 10.10.11.4	Push 2/1/2	--	262137
10.20.1.6/32 10.10.11.4	Swap 2/1/2	262135	262137

---

No. of IPv4 Prefix Active Bindings: 11

---

LDP IPv6 Prefix Bindings (Active)

---

Prefix EgrNextHop	Op EgrIf/LspId	IngLbl	EgrLbl
3ffe::a14:101/128 fe80::21	Push 1/1/1	--	262142
3ffe::a14:101/128 fe80::21	Swap 1/1/1	262136	262142
3ffe::a14:102/128 fe80::122	Push lag-1	--	262142
3ffe::a14:102/128 fe80::122	Swap lag-1	262138	262142

```

3ffe::a14:103/128      Pop      262142  --
--                    --
3ffe::a14:104/128      Push      --    262142
fe80::114             2/1/2

3ffe::a14:104/128      Swap      262134  262142
fe80::114             2/1/2

3ffe::a14:105/128      Push      --    262142
fe80::55              2/1/1

3ffe::a14:105/128      Swap      262132  262142
fe80::55              2/1/1

3ffe::a14:106/128      Push      --    262136
fe80::114             2/1/2

3ffe::a14:106/128      Swap      262133  262136
fe80::114             2/1/2

-----
No. of IPv6 Prefix Active Bindings: 11
=====

LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface
RootAddr     Op          IngLbl     EgrLbl
EgrNH        EgrIf/LspId
-----
No Matching Entries Found
=====

LDP Generic IPv6 P2MP Bindings (Active)
=====
P2MP-Id      Interface
RootAddr     Op          IngLbl     EgrLbl
EgrNH        EgrIf/LspId
-----
No Matching Entries Found
=====

LDP In-Band-SSM IPv4 P2MP Bindings (Active)
=====
Source      Interface
Group       Op          IngLbl     EgrLbl
RootAddr   EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====

LDP In-Band-SSM IPv6 P2MP Bindings (Active)
=====
Source      Interface
Group       Op          IngLbl     EgrLbl
RootAddr   EgrIf/LspId
EgrNH
    
```

```

-----
No Matching Entries Found
=====

=====
LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
=====
Source
Group                                RD          Op          EgrLbl
RootAddr                            Interface  IngLbl
EgrNH                               EgrIf/LspId
-----
No Matching Entries Found
=====

=====
LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)
=====
Source
Group                                RD          Op          EgrLbl
RootAddr                            Interface  IngLbl
EgrNH                               EgrIf/LspId
-----
No Matching Entries Found
=====

*A:Dut-C# show router ldp bindings active detail

=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
(IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix      : 10.20.1.1/32
Op          : Push
Ing Lbl     : --          Egr Lbl   : 262143
Egr Int/LspId : 1/1/1
EgrNextHop  : 10.10.2.1
Egr. Flags  : None       Ing. Flags : None
Egr If Name : ip-10.10.2.3
Metric      : 1000       Mtu       : 1500
-----
Prefix      : 10.20.1.1/32
Op          : Swap
Ing Lbl     : 262141     Egr Lbl   : 262143
Egr Int/LspId : 1/1/1
EgrNextHop  : 10.10.2.1
Egr. Flags  : None       Ing. Flags : None
Egr If Name : ip-10.10.2.3
Metric      : 1000       Mtu       : 1500
-----
Prefix      : 10.20.1.2/32
Op          : Push
Ing Lbl     : --          Egr Lbl   : 262143
Egr Int/LspId : lag-1
EgrNextHop  : 10.10.12.2
Egr. Flags  : None       Ing. Flags : None
  
```

```

Egr If Name   : ip-10.10.12.3
Metric       : 333                               Mtu        : 1500
-----
Prefix       : 10.20.1.2/32
Op           : Swap
Ing Lbl      : 262140                             Egr Lbl    : 262143
Egr Int/LspId : lag-1
EgrNextHop   : 10.10.12.2
Egr. Flags   : None                               Ing. Flags : None
Egr If Name   : ip-10.10.12.3
Metric       : 333                               Mtu        : 1500
-----
Prefix       : 10.20.1.3/32
Op           : Pop
Ing Lbl      : 262143                             Egr Lbl    :  --
Egr Int/LspId :  --
EgrNextHop   :  --
Egr. Flags   : None                               Ing. Flags : None
-----
Prefix       : 10.20.1.4/32
Op           : Push
Ing Lbl      :  --                               Egr Lbl    : 262143
Egr Int/LspId : 2/1/2
EgrNextHop   : 10.10.11.4
Egr. Flags   : None                               Ing. Flags : None
Egr If Name   : ip-10.10.11.3
Metric       : 1000                              Mtu        : 1500
-----
Prefix       : 10.20.1.4/32
Op           : Swap
Ing Lbl      : 262139                             Egr Lbl    : 262143
Egr Int/LspId : 2/1/2
EgrNextHop   : 10.10.11.4
Egr. Flags   : None                               Ing. Flags : None
Egr If Name   : ip-10.10.11.3
Metric       : 1000                              Mtu        : 1500
-----
Prefix       : 10.20.1.5/32
Op           : Push
Ing Lbl      :  --                               Egr Lbl    : 262143
Egr Int/LspId : 2/1/1
EgrNextHop   : 10.10.5.5
Egr. Flags   : None                               Ing. Flags : None
Egr If Name   : ip-10.10.5.3
Metric       : 1000                              Mtu        : 1500
-----
Prefix       : 10.20.1.5/32
Op           : Swap
Ing Lbl      : 262137                             Egr Lbl    : 262143
Egr Int/LspId : 2/1/1
EgrNextHop   : 10.10.5.5
Egr. Flags   : None                               Ing. Flags : None
Egr If Name   : ip-10.10.5.3
Metric       : 1000                              Mtu        : 1500
-----
Prefix       : 10.20.1.6/32
Op           : Push
Ing Lbl      :  --                               Egr Lbl    : 262137
Egr Int/LspId : 2/1/2
EgrNextHop   : 10.10.11.4
Egr. Flags   : None                               Ing. Flags : None
Egr If Name   : ip-10.10.11.3
Metric       : 2000                              Mtu        : 1500
-----
    
```

```

Prefix      : 10.20.1.6/32
Op          : Swap
Ing Lbl     : 262135          Egr Lbl      : 262137
Egr Int/LspId : 2/1/2
EgrNextHop  : 10.10.11.4
Egr. Flags  : None          Ing. Flags   : None
Egr If Name : ip-10.10.11.3
Metric      : 2000          Mtu         : 1500
    
```

```

=====
No. of IPv4 Prefix Active Bindings: 11
=====
    
```

```

=====
LDP IPv6 Prefix Bindings (Active)
=====
    
```

```

-----
Prefix      : 3ffe::a14:101/128
Op          : Push
Ing Lbl     : --          Egr Lbl      : 262142
Egr Int/LspId : 1/1/1
EgrNextHop  : fe80::21
Egr. Flags  : None          Ing. Flags   : None
Egr If Name : ip-10.10.2.3
Metric      : 1000          Mtu         : 1500
    
```

```

-----
Prefix      : 3ffe::a14:101/128
Op          : Swap
Ing Lbl     : 262136          Egr Lbl      : 262142
Egr Int/LspId : 1/1/1
EgrNextHop  : fe80::21
Egr. Flags  : None          Ing. Flags   : None
Egr If Name : ip-10.10.2.3
Metric      : 1000          Mtu         : 1500
    
```

```

-----
Prefix      : 3ffe::a14:102/128
Op          : Push
Ing Lbl     : --          Egr Lbl      : 262142
Egr Int/LspId : lag-1
EgrNextHop  : fe80::122
Egr. Flags  : None          Ing. Flags   : None
Egr If Name : ip-10.10.12.3
Metric      : 333          Mtu         : 1500
    
```

```

-----
Prefix      : 3ffe::a14:102/128
Op          : Swap
Ing Lbl     : 262138          Egr Lbl      : 262142
Egr Int/LspId : lag-1
EgrNextHop  : fe80::122
Egr. Flags  : None          Ing. Flags   : None
Egr If Name : ip-10.10.12.3
Metric      : 333          Mtu         : 1500
    
```

```

-----
Prefix      : 3ffe::a14:103/128
Op          : Pop
Ing Lbl     : 262142          Egr Lbl      : --
Egr Int/LspId : --
EgrNextHop  : --
Egr. Flags  : None          Ing. Flags   : None
    
```

```

-----
Prefix      : 3ffe::a14:104/128
Op          : Push
Ing Lbl     : --          Egr Lbl      : 262142
Egr Int/LspId : 2/1/2
EgrNextHop  : fe80::114
    
```

```

Egr. Flags      : None          Ing. Flags : None
Egr If Name     : ip-10.10.11.3
Metric          : 1000          Mtu         : 1500
-----
Prefix          : 3ffe::a14:104/128
Op              : Swap
Ing Lbl         : 262134          Egr Lbl     : 262142
Egr Int/LspId   : 2/1/2
EgrNextHop      : fe80::114
Egr. Flags      : None          Ing. Flags : None
Egr If Name     : ip-10.10.11.3
Metric          : 1000          Mtu         : 1500
-----
Prefix          : 3ffe::a14:105/128
Op              : Push
Ing Lbl         : --           Egr Lbl     : 262142
Egr Int/LspId   : 2/1/1
EgrNextHop      : fe80::55
Egr. Flags      : None          Ing. Flags : None
Egr If Name     : ip-10.10.5.3
Metric          : 1000          Mtu         : 1500
-----
Prefix          : 3ffe::a14:105/128
Op              : Swap
Ing Lbl         : 262132          Egr Lbl     : 262142
Egr Int/LspId   : 2/1/1
EgrNextHop      : fe80::55
Egr. Flags      : None          Ing. Flags : None
Egr If Name     : ip-10.10.5.3
Metric          : 1000          Mtu         : 1500
-----
Prefix          : 3ffe::a14:106/128
Op              : Push
Ing Lbl         : --           Egr Lbl     : 262136
Egr Int/LspId   : 2/1/2
EgrNextHop      : fe80::114
Egr. Flags      : None          Ing. Flags : None
Egr If Name     : ip-10.10.11.3
Metric          : 2000          Mtu         : 1500
-----
Prefix          : 3ffe::a14:106/128
Op              : Swap
Ing Lbl         : 262133          Egr Lbl     : 262136
Egr Int/LspId   : 2/1/2
EgrNextHop      : fe80::114
Egr. Flags      : None          Ing. Flags : None
Egr If Name     : ip-10.10.11.3
Metric          : 2000          Mtu         : 1500
=====
No. of IPv6 Prefix Active Bindings: 11
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
No Matching Entries Found
=====
LDP Generic IPv6 P2MP Bindings (Active)
=====
No Matching Entries Found
=====
LDP In-Band-SSM IPv4 P2MP Bindings (Active)
=====
    
```



```

No Matching Entries Found
=====
LDP In-Band-SSM IPv6 P2MP Bindings (Active)
=====
No Matching Entries Found
=====
LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
=====
No Matching Entries Found
=====
LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)
=====
No Matching Entries Found
=====
*A:Dut-C# show router ldp bindings active egress-if 2/1/2
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
              (IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix          Op          IngLbl   EgrLbl
EgrNextHop      EgrIf/LspId
-----
10.20.1.4/32    Push         --       262143
10.10.11.4      2/1/2
10.20.1.4/32    Swap        262139   262143
10.10.11.4      2/1/2
10.20.1.6/32    Push         --       262137
10.10.11.4      2/1/2
10.20.1.6/32    Swap        262135   262137
10.10.11.4      2/1/2
-----
No. of IPv4 Prefix Active Bindings: 4
=====
LDP IPv6 Prefix Bindings (Active)
=====
Prefix          Op          IngLbl   EgrLbl
EgrNextHop      EgrIf/LspId
-----
3ffe::a14:104/128 Push         --       262142
fe80::114       2/1/2
3ffe::a14:104/128 Swap        262134   262142
fe80::114       2/1/2
3ffe::a14:106/128 Push         --       262136
fe80::114       2/1/2
3ffe::a14:106/128 Swap        262133   262136
fe80::114       2/1/2
    
```

```

-----
No. of IPv6 Prefix Active Bindings: 4
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id          Interface
RootAddr         Op          IngLbl    EgrLbl
EgrNH           EgrIf/LspId
-----
No Matching Entries Found
=====
LDP Generic IPv6 P2MP Bindings (Active)
=====
P2MP-Id          Interface
RootAddr         Op          IngLbl    EgrLbl
EgrNH           EgrIf/LspId
-----
No Matching Entries Found
=====
LDP In-Band-SSM IPv4 P2MP Bindings (Active)
=====
Source          Interface
Group           Op          IngLbl    EgrLbl
RootAddr       EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====
LDP In-Band-SSM IPv6 P2MP Bindings (Active)
=====
Source          Interface
Group           Op          IngLbl    EgrLbl
RootAddr       EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====
LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
=====
Source          RD          Op
Group           Interface  IngLbl    EgrLbl
RootAddr       EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====
LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)
=====
Source          RD          Op
Group           Interface  IngLbl    EgrLbl
RootAddr       EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====
*A:Dut-C# show router ldp bindings active egress-nh 10.10.11.4
    
```

```

=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
(IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
10.20.1.4/32                          Push         --          262143
10.10.11.4                             2/1/2
-----
10.20.1.4/32                          Swap         262139     262143
10.10.11.4                             2/1/2
-----
10.20.1.6/32                          Push         --          262137
10.10.11.4                             2/1/2
-----
10.20.1.6/32                          Swap         262135     262137
10.10.11.4                             2/1/2
-----
No. of IPv4 Prefix Active Bindings: 4
=====
LDP IPv6 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
No Matching Entries Found
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id                               Interface
RootAddr                              Op           IngLbl      EgrLbl
EgrNH                                  EgrIf/LspId
-----
No Matching Entries Found
=====
LDP Generic IPv6 P2MP Bindings (Active)
=====
P2MP-Id                               Interface
RootAddr                              Op           IngLbl      EgrLbl
EgrNH                                  EgrIf/LspId
-----
No Matching Entries Found
=====
LDP In-Band-SSM IPv4 P2MP Bindings (Active)
=====
Source                               Interface
Group                                 Op           IngLbl      EgrLbl
RootAddr                              EgrIf/LspId
EgrNH                                  EgrIf/LspId
-----
No Matching Entries Found
    
```

```

=====
LDP In-Band-SSM IPv6 P2MP Bindings (Active)
=====
Source
Group                               Interface
RootAddr                            Op          IngLbl     EgrLbl
EgrNH                               EgrIf/LspId
-----
No Matching Entries Found
=====

LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
=====
Source
Group                               RD          Op
RootAddr                            Interface   IngLbl     EgrLbl
EgrNH                               EgrIf/LspId
-----
No Matching Entries Found
=====

LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)
=====
Source
Group                               RD          Op
RootAddr                            Interface   IngLbl     EgrLbl
EgrNH                               EgrIf/LspId
-----
No Matching Entries Found
=====

*A:Dut-C# show router ldp bindings active ipv4
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
              (IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix                               Op          IngLbl     EgrLbl
EgrNextHop                           EgrIf/LspId
-----
10.20.1.1/32                          Push        --         262143
10.10.2.1                              1/1/1
10.20.1.1/32                          Swap        262141    262143
10.10.2.1                              1/1/1
10.20.1.2/32                          Push        --         262143
10.10.12.2                             lag-1
10.20.1.2/32                          Swap        262140    262143
10.10.12.2                             lag-1
10.20.1.3/32                          Pop         262143    --
--                                     --
10.20.1.4/32                          Push        --         262143
10.10.11.4                             2/1/2
    
```

```

10.20.1.4/32          Swap          262139    262143
10.10.11.4           2/1/2

10.20.1.5/32          Push          --         262143
10.10.5.5            2/1/1

10.20.1.5/32          Swap          262137    262143
10.10.5.5            2/1/1

10.20.1.6/32          Push          --         262137
10.10.11.4           2/1/2

10.20.1.6/32          Swap          262135    262137
10.10.11.4           2/1/2

-----
No. of IPv4 Prefix Active Bindings: 11
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id              Interface
RootAddr             Op              IngLbl         EgrLbl
EgrNH                EgrIf/LspId
-----
No Matching Entries Found
=====
LDP In-Band-SSM IPv4 P2MP Bindings (Active)
=====
Source              Interface
Group              Op              IngLbl         EgrLbl
RootAddr           EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====
LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
=====
Source              RD              Op
Group              Interface      IngLbl         EgrLbl
RootAddr           EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====
*A:Dut-C# show router ldp bindings active ipv6
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
              (IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv6 Prefix Bindings (Active)
=====
Prefix              Op              IngLbl         EgrLbl
EgrNextHop         EgrIf/LspId
-----

```

3ffe::a14:101/128 fe80::21	Push 1/1/1	--	262142
3ffe::a14:101/128 fe80::21	Swap 1/1/1	262136	262142
3ffe::a14:102/128 fe80::122	Push lag-1	--	262142
3ffe::a14:102/128 fe80::122	Swap lag-1	262138	262142
3ffe::a14:103/128 --	Pop --	262142	--
3ffe::a14:104/128 fe80::114	Push 2/1/2	--	262142
3ffe::a14:104/128 fe80::114	Swap 2/1/2	262134	262142
3ffe::a14:105/128 fe80::55	Push 2/1/1	--	262142
3ffe::a14:105/128 fe80::55	Swap 2/1/1	262132	262142
3ffe::a14:106/128 fe80::114	Push 2/1/2	--	262136
3ffe::a14:106/128 fe80::114	Swap 2/1/2	262133	262136
-----			
No. of IPv6 Prefix Active Bindings: 11			
=====			
LDP Generic IPv6 P2MP Bindings (Active)			
=====			
P2MP-Id	Interface		
RootAddr	Op	IngLbl	EgrLbl
EgrNH	EgrIf/LspId		
-----			
No Matching Entries Found			
=====			
LDP In-Band-SSM IPv6 P2MP Bindings (Active)			
=====			
Source	Interface		
Group	Op	IngLbl	EgrLbl
RootAddr	EgrIf/LspId		
EgrNH			
-----			
No Matching Entries Found			
=====			
LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)			
=====			
Source	RD	Op	
Group	Interface	IngLbl	EgrLbl
RootAddr	EgrIf/LspId		
EgrNH			
-----			
No Matching Entries Found			

```

=====
*A:Dut-C# show router ldp bindings active summary
No. of IPv4 Prefix Active Bindings: 11
No. of IPv6 Prefix Active Bindings: 11
No. of Generic IPv4 P2MP Active Bindings: 0
No. of Generic IPv6 P2MP Active Bindings: 0
No. of In-Band-SSM IPv4 P2MP Active Bindings: 0
No. of In-Band-SSM IPv6 P2MP Active Bindings: 0
No. of In-Band-VPN-SSM IPv4 P2MP Active Bindings: 0
No. of In-Band-VPN-SSM IPv6 P2MP Active Bindings: 0
*A:Dut-C#

*A:Dut-C# show router ldp bindings active prefixes
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
(IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
      (S) - Static      (M) - Multi-homed Secondary Support
      (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
10.20.1.1/32                          Push         --         262143
10.10.2.1                              1/1/1
10.20.1.1/32                          Swap         262141     262143
10.10.2.1                              1/1/1
10.20.1.2/32                          Push         --         262143
10.10.12.2                             lag-1
10.20.1.2/32                          Swap         262140     262143
10.10.12.2                             lag-1
10.20.1.3/32                          Pop          262143     --
--                                     --
10.20.1.4/32                          Push         --         262143
10.10.11.4                             2/1/2
10.20.1.4/32                          Swap         262139     262143
10.10.11.4                             2/1/2
10.20.1.5/32                          Push         --         262143
10.10.5.5                              2/1/1
10.20.1.5/32                          Swap         262137     262143
10.10.5.5                              2/1/1
10.20.1.6/32                          Push         --         262137
10.10.11.4                             2/1/2
10.20.1.6/32                          Swap         262135     262137
10.10.11.4                             2/1/2
-----
No. of IPv4 Prefix Active Bindings: 11
=====
    
```

```

LDP IPv6 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
3ffe::a14:101/128                     Push         --          262142
fe80::21                              1/1/1

3ffe::a14:101/128                     Swap         262136     262142
fe80::21                              1/1/1

3ffe::a14:102/128                     Push         --          262142
fe80::122                             lag-1

3ffe::a14:102/128                     Swap         262138     262142
fe80::122                             lag-1

3ffe::a14:103/128                     Pop          262142     --
--                                     --

3ffe::a14:104/128                     Push         --          262142
fe80::114                             2/1/2

3ffe::a14:104/128                     Swap         262134     262142
fe80::114                             2/1/2

3ffe::a14:105/128                     Push         --          262142
fe80::55                              2/1/1

3ffe::a14:105/128                     Swap         262132     262142
fe80::55                              2/1/1

3ffe::a14:106/128                     Push         --          262136
fe80::114                             2/1/2

3ffe::a14:106/128                     Swap         262133     262136
fe80::114                             2/1/2

-----
No. of IPv6 Prefix Active Bindings: 11
=====
*A:Dut-C#

*A:Dut-C# show router ldp bindings active prefixes ipv4
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
(IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
10.20.1.1/32                          Push         --          262143
10.10.2.1                              1/1/1

10.20.1.1/32                          Swap         262141     262143
10.10.2.1                              1/1/1
    
```



```

10.20.1.2/32          Push          --          262143
10.10.12.2           lag-1

10.20.1.2/32          Swap          262140      262143
10.10.12.2           lag-1

10.20.1.3/32          Pop           262143      --
--                  --

10.20.1.4/32          Push          --          262143
10.10.11.4           2/1/2

10.20.1.4/32          Swap          262139      262143
10.10.11.4           2/1/2

10.20.1.5/32          Push          --          262143
10.10.5.5            2/1/1

10.20.1.5/32          Swap          262137      262143
10.10.5.5            2/1/1

10.20.1.6/32          Push          --          262137
10.10.11.4           2/1/2

10.20.1.6/32          Swap          262135      262137
10.10.11.4           2/1/2

-----
No. of IPv4 Prefix Active Bindings: 11
=====
*A:Dut-C#

*A:Dut-C# show router ldp bindings active prefixes ipv6

=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
              (IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv6 Prefix Bindings (Active)
=====
Prefix          Op          IngLbl      EgrLbl
EgrNextHop     EgrIf/LspId
-----
3ffe::a14:101/128 Push        --          262142
fe80::21       1/1/1

3ffe::a14:101/128 Swap        262136      262142
fe80::21       1/1/1

3ffe::a14:102/128 Push        --          262142
fe80::122     lag-1

3ffe::a14:102/128 Swap        262138      262142
fe80::122     lag-1

3ffe::a14:103/128 Pop         262142      --
--          --

3ffe::a14:104/128 Push        --          262142
    
```

```

fe80::114                                2/1/2
3ffe::a14:104/128                        Swap          262134    262142
fe80::114                                2/1/2
3ffe::a14:105/128                        Push          --        262142
fe80::55                                 2/1/1
3ffe::a14:105/128                        Swap          262132    262142
fe80::55                                 2/1/1
3ffe::a14:106/128                        Push          --        262136
fe80::114                                2/1/2
3ffe::a14:106/128                        Swap          262133    262136
fe80::114                                2/1/2
    
```

-----  
 No. of IPv6 Prefix Active Bindings: 11  
 =====

\*A:Dut-C#

\*A:Dut-C# show router ldp bindings active prefixes prefix 3ffe::a14:101/128 detail egress-if 1/1/1

=====

```

LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
              (IPv6 LSR ID 3ffe::a14:103[0])
    
```

-----

```

Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
    
```

=====

```

LDP IPv6 Prefix Bindings (Active)
    
```

-----

```

Prefix       : 3ffe::a14:101/128
Op           : Push
Ing Lbl      : --                Egr Lbl   : 262142
Egr Int/LspId : 1/1/1
EgrNextHop   : fe80::21
Egr. Flags   : None              Ing. Flags : None
Egr If Name  : ip-10.10.2.3
Metric       : 1000              Mtu       : 1500
    
```

-----

```

Prefix       : 3ffe::a14:101/128
Op           : Swap
Ing Lbl      : 262136            Egr Lbl   : 262142
Egr Int/LspId : 1/1/1
EgrNextHop   : fe80::21
Egr. Flags   : None              Ing. Flags : None
Egr If Name  : ip-10.10.2.3
Metric       : 1000              Mtu       : 1500
    
```

=====

No. of IPv6 Prefix Active Bindings: 2  
 =====

\*A:Dut-C#

\*A:Dut-C# show router ldp bindings active prefixes prefix 3ffe::a14:101/128 egress-nh fe80::21

=====

```

LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
              (IPv6 LSR ID 3ffe::a14:103[0])
    
```

```

Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static          (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv6 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
3ffe::a14:101/128                    Push        --          262142
fe80::21                              1/1/1
3ffe::a14:101/128                    Swap        262136     262142
fe80::21                              1/1/1
-----
No. of IPv6 Prefix Active Bindings: 2
=====
*A:Dut-C#

*A:SRU4# show router ldp bindings active p2mp
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
              (IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface      IngLbl      EgrLbl
RootAddr     Op             EgrIf/LspId
EgrNH
-----
8193         77156
192.168.1.1  Pop           255042      --
--          --
8193         77156
192.168.1.1  Swap         255042      259773
192.168.110.110 3/1/5:1
8193         77156
192.168.1.1  Pop           258780BU    --
--          --
8193         77156
192.168.1.1  Swap         258780BU    259773
192.168.110.110 3/1/5:1
8194         77157
192.168.1.1  Pop           255041      --
--          --
8194         77157
192.168.1.1  Swap         255041      259772
192.168.110.110 3/1/5:1
8194         77157
192.168.1.1  Pop           258779BU    --
--          --
8194         77157
    
```

```

192.168.1.1          Swap          258779BU  259772
192.168.110.110    3/1/5:1

8195                77158
192.168.1.1        Pop          255040    --
--                --

8195                77158
192.168.1.1        Swap          255040    259769
192.168.110.110    3/1/5:1

8195                77158
192.168.1.1        Pop          258777BU  --
--                --

8195                77158
192.168.1.1        Swap          258777BU  259769
*A:SRU4#
    
```

The following show output displays recursive FECs.

```

A:Dut-C# show router ldp bindings active p2mp
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
(IPv6 LSR ID ::)
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
       WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
       LF - Lower FEC, UF - Upper FEC
=====
LDP Recursive with In-Band-SSM IPv4 P2MP Bindings (Active)
=====
RootAddr
InnerRootAddr
Source          Interface
Group           Op          IngLbl    EgrLbl
EgrNH          EgrIf/LspId
-----
10.4.0.2
10.20.1.6
10.0.101.10
192.168.1.1    73728
--            Pop          262135    --
--            --

10.4.0.2 (UF)
10.20.1.6
10.0.101.10
192.168.1.1    73728
--            Swap          262135    Stitched
--            --

10.20.1.3 (LF)
10.20.1.6
10.0.101.10
192.168.1.1    Unknw
10.3.0.1       Push         --        262139
10.20.1.3 (LF) lag-1

10.20.1.6
10.0.101.10
192.168.1.1    Unknw
10.33.0.1     Push         --        262139
10.33.0.1     1/1/2:2
-----
No. of In-Band-SSM IPv4 P2MP Active Bindings: 4
=====
    
```

```

*A:SRU4# show router ldp bindings active p2mp p2mp-id 1 root 192.168.1.2
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
      (IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface
RootAddr     Op          IngLbl      EgrLbl
EgrNH        EgrIf/LspId
-----
1            73728
192.168.1.2  Pop          253348      --
--          --

1            73728
192.168.1.2  Swap         253348      256245
192.168.58.6 3/2/3:8

1            73728
192.168.1.2  Pop          260103BU    --
--          --

1            73728
192.168.1.2  Swap         260103BU    256245
192.168.58.6 3/2/3:8

-----
No. of Generic IPv4 P2MP Active Bindings: 4
=====
*A:SRU4#

*A:SRU4# show router ldp bindings active p2mp p2mp-id 1 root 192.168.1.2 summary
No. of Generic IPv4 P2MP Active Bindings: 4
*A:SRU4# show router ldp bindings active p2mp p2mp-id 1 root 192.168.1.2 detail
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
      (IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
-----
P2MP Type      : 1          P2MP-Id      : 1
Root-Addr      : 192.168.1.2
-----
Op             : Pop
Ing Lbl        : 253348
Egr Lbl        : --
Egr Int/LspId  : --
EgrNextHop     : --
Egr. Flags     : None          Ing. Flags   : None
-----
P2MP Type      : 1          P2MP-Id      : 1
Root-Addr      : 192.168.1.2
-----
Op             : Swap
Ing Lbl        : 253348
    
```

```

Egr Lbl      : 256245
Egr Int/LspId : 3/2/3:8
EgrNextHop   : 192.168.58.6
Egr. Flags   : None           Ing. Flags : None
Egr If Name  : src-1.8
Metric       : 1              Mtu        : 1500
-----
P2MP Type    : 1              P2MP-Id   : 1
Root-Addr    : 192.168.1.2
-----
Op           : Pop
Ing Lbl      : 260103BU
Egr Lbl      : --
Egr Int/LspId : --
EgrNextHop   : --
Egr. Flags   : None           Ing. Flags : None
-----
P2MP Type    : 1              P2MP-Id   : 1
Root-Addr    : 192.168.1.2
-----
Op           : Swap
Ing Lbl      : 260103BU
Egr Lbl      : 256245
Egr Int/LspId : 3/2/3:8
EgrNextHop   : 192.168.58.6
Egr. Flags   : None           Ing. Flags : None
Egr If Name  : src-1.8
Metric       : 1              Mtu        : 1500
=====
No. of Generic IPv4 P2MP Active Bindings: 4
=====
*A:SRU4#

*A:SRU4# show router ldp bindings active p2mp p2mp-
id 1 root 192.168.1.2 detail egress-
if 3/2/3:8
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
      (IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
-----
P2MP Type    : 1              P2MP-Id   : 1
Root-Addr    : 192.168.1.2
-----
Op           : Swap
Ing Lbl      : 253348
Egr Lbl      : 256245
Egr Int/LspId : 3/2/3:8
EgrNextHop   : 192.168.58.6
Egr. Flags   : None           Ing. Flags : None
Egr If Name  : src-1.8
Metric       : 1              Mtu        : 1500
-----
P2MP Type    : 1              P2MP-Id   : 1
Root-Addr    : 192.168.1.2
-----
Op           : Swap
Ing Lbl      : 260103BU
Egr Lbl      : 256245
    
```

```

Egr Int/LspId : 3/2/3:8
EgrNextHop    : 192.168.58.6
Egr. Flags    : None          Ing. Flags : None
Egr If Name   : src-1.8
Metric        : 1             Mtu         : 1500
=====
No. of Generic IPv4 P2MP Active Bindings: 2
=====
*A:SRU4#

*A:SRU4# show router ldp bindings active p2mp p2mp-id 1 root 192.168.1.2 egress-nh
192.168.58.6
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
(IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface
RootAddr     Op          IngLbl   EgrLbl
EgrNH        EgrIf/LspId
-----
1            73728
192.168.1.2 Swap          253348   256245
192.168.58.6 3/2/3:8
-----
1            73728
192.168.1.2 Swap          260103BU 256245
192.168.58.6 3/2/3:8
-----
No. of Generic IPv4 P2MP Active Bindings: 2
=====
*A:SRU4#

*A:SRU4# show router ldp bindings active p2mp ipv4 summary
No. of Generic IPv4 P2MP Active Bindings: 8870
No. of In-Band-SSM IPv4 P2MP Active Bindings: 182
No. of In-Band-VPN-SSM IPv4 P2MP Active Bindings: 0
*A:SRU4#
*A:SRU4# show router ldp bindings active p2mp ipv4 detail
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
(IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP Type    : 1          P2MP-Id     : 8193
Root-Addr    : 192.168.1.1
-----
Op           : Pop
Ing Lbl      : 255042
Egr Lbl     : --
Egr Int/LspId : --
EgrNextHop  : --
    
```

```

Egr. Flags      : None                Ing. Flags : None
-----
P2MP Type       : 1                  P2MP-Id    : 8193
Root-Addr      : 192.168.1.1
-----
Op              : Swap
Ing Lbl        : 255042
Egr Lbl       : 259773
Egr Int/LspId : 3/1/5:1
EgrNextHop    : 192.168.110.110
Egr. Flags    : None                Ing. Flags : None
Egr If Name    : sicily1-1:1
Metric        : 1                   Mtu        : 9194
-----
P2MP Type       : 1                  P2MP-Id    : 8193
Root-Addr      : 192.168.1.1
-----
Op              : Pop
Ing Lbl        : 258780BU
Egr Lbl       : --
Egr Int/LspId : --
EgrNextHop    : --
Egr. Flags    : None                Ing. Flags : None
-----
P2MP Type       : 1                  P2MP-Id    : 8193
Root-Addr      : 192.168.1.1
-----
Op              : Swap
Ing Lbl        : 258780BU
Egr Lbl       : 259773
Egr Int/LspId : 3/1/5:1
EgrNextHop    : 192.168.110.110
Egr. Flags    : None                Ing. Flags : None
Egr If Name    : sicily1-1:1
Metric        : 1                   Mtu        : 9194
-----
P2MP Type       : 1                  P2MP-Id    : 8194
Root-Addr      : 192.168.1.1
-----
Op              : Pop
Ing Lbl        : 255041
*A:SRU4#

*A:SRU4# show router ldp bindings active p2mp ipv4 egress-if 3/1/5:1
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
          (IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
       WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface
RootAddr    Op      IngLbl  EgrLbl
EgrNH      EgrIf/LspId
-----
8193        77156
192.168.1.1 Swap      255042  259773
192.168.110.110 3/1/5:1
8193        77156
192.168.1.1 Swap      258780BU 259773
    
```



```

192.168.110.110          3/1/5:1
8194                    77157
192.168.1.1             Swap          255041    259772
192.168.110.110        3/1/5:1

8194                    77157
192.168.1.1             Swap          258779BU  259772
192.168.110.110        3/1/5:1

8195                    77158
192.168.1.1             Swap          255040    259769
192.168.110.110        3/1/5:1

8195                    77158
192.168.1.1             Swap          258777BU  259769
192.168.110.110        3/1/5:1

8196                    77159
192.168.1.1             Swap          255039    259768
192.168.110.110        3/1/5:1

8196                    77159
192.168.1.1             Swap          258772BU  259768
192.168.110.110        3/1/5:1

8197                    77160
192.168.1.1             Swap          255034    259762
192.168.110.110        3/1/5:1

8197                    77160
192.168.1.1             Swap          258758BU  259762
192.168.110.110        3/1/5:1

8198                    77161
192.168.1.1             Swap          255033    259761
192.168.110.110        3/1/5:1

8198                    77161
192.168.1.1             Swap          258755BU  259761
*A:SRU4#

*A:SRU4# show router ldp bindings active p2mp ipv4 egress-nh 192.168.110.110
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
              (IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
       WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface      IngLbl      EgrLbl
RootAddr     Op             EgrIf/LspId
EgrNH
-----
8193         77156
192.168.1.1  Swap          255042      259773
192.168.110.110  3/1/5:1

8193         77156
192.168.1.1  Swap          258780BU    259773
192.168.110.110  3/1/5:1
    
```

```

8194          77157          255041  259772
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8194          77157          258779BU 259772
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8195          77158          255040  259769
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8195          77158          258777BU 259769
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8196          77159          255039  259768
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8196          77159          258772BU 259768
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8197          77160          255034  259762
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8197          77160          258758BU 259762
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8198          77161          255033  259761
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8198          77161          258755BU 259761
192.168.1.1  Swap
*A:SRU4#

*A:SRU4# show router ldp bindings active p2mp ipv4 egress-if 3/1/5:1 opaque-type
generic
=====
LDP Bindings (IPv4 LSR ID 192.168.1.4:0)
              (IPv6 LSR ID 3ffe::6e14:104[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
       WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface      IngLbl      EgrLbl
RootAddr     Op             EgrIf/LspId
EgrNH
-----
8193          77156          255042  259773
192.168.1.1  Swap
192.168.110.110  3/1/5:1

8193          77156          258780BU 259773
192.168.1.1  Swap
192.168.110.110  3/1/5:1
    
```

8194 192.168.1.1 192.168.110.110	77157 Swap 3/1/5:1	255041	259772
8194 192.168.1.1 192.168.110.110	77157 Swap 3/1/5:1	258779BU	259772
8195 192.168.1.1 192.168.110.110	77158 Swap 3/1/5:1	255040	259769
8195 192.168.1.1 192.168.110.110	77158 Swap 3/1/5:1	258777BU	259769
8196 192.168.1.1 192.168.110.110	77159 Swap 3/1/5:1	255039	259768
8196 192.168.1.1 192.168.110.110	77159 Swap 3/1/5:1	258772BU	259768
8197 192.168.1.1 192.168.110.110	77160 Swap 3/1/5:1	255034	259762
8197 192.168.1.1 192.168.110.110	77160 Swap 3/1/5:1	258758BU	259762
8198 192.168.1.1 192.168.110.110	77161 Swap 3/1/5:1	255033	259761
8198 192.168.1.1 *A:SRU4#	77161 Swap	258755BU	259761

The following show output displays recursive FECs.

```
A:Dut-C# show router ldp bindings active p2mp source 10.0.101.10 group 192.168.1.1
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
(IPv6 LSR ID ::)
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        LF - Lower FEC, UF - Upper FEC
=====
LDP Recursive with In-Band-SSM IPv4 P2MP Bindings (Active)
=====
RootAddr
InnerRootAddr
Source          Interface
Group           Op           IngLbl      EgrLbl
EgrNH           EgrIf/LspId
-----
10.4.0.2
```

```

10.20.1.6
10.0.101.10          73728
192.168.1.1          Pop           262135    --
--
10.4.0.2 (UF)
10.20.1.6
10.0.101.10          73728
192.168.1.1          Swap           262135    Stitched
--
10.20.1.3 (LF)
10.20.1.6
10.0.101.10          Unknw
192.168.1.1          Push           --        262139
10.3.0.1              lag-1
10.20.1.3 (LF)
10.20.1.6
10.0.101.10          Unknw
192.168.1.1          Push           --        262139
10.33.0.1              1/1/2:2
-----
No. of In-Band-SSM IPv4 P2MP Active Bindings: 4
=====

A:Dut-C# show router ldp bindings active p2mp source 10.0.101.10 group 192.168.1.1
innermost-root 10.20.1.6
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
(IPv6 LSR ID ::)
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        LF - Lower FEC, UF - Upper FEC
=====
LDP Recursive with In-Band-SSM IPv4 P2MP Bindings (Active)
=====
RootAddr
InnerRootAddr
Source          Interface
Group           Op           IngLbl    EgrLbl
EgrNH           EgrIf/LspId
-----
10.4.0.2
10.20.1.6
10.0.101.10     73728
192.168.1.1     Pop           262135    --
--
10.4.0.2 (UF)
10.20.1.6
10.0.101.10     73728
192.168.1.1     Swap           262135    Stitched
--
10.20.1.3 (LF)
10.20.1.6
10.0.101.10     Unknw
192.168.1.1     Push           --        262139
10.3.0.1         lag-1
10.20.1.3 (LF)
10.20.1.6
10.0.101.10     Unknw
192.168.1.1     Push           --        262139
10.33.0.1         1/1/2:2
-----
No. of In-Band-SSM IPv4 P2MP Active Bindings: 4
    
```

```

=====
A:Dut-C# show router ldp bindings active p2mp source 10.0.101.10 group 192.168.1.1
inner-root 10.20.1.6 root 10.20.1.3
=====
    
```

```

=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
(IPv6 LSR ID ::)
=====
    
```

```

=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        LF - Lower FEC, UF - Upper FEC
=====
    
```

```

=====
LDP Recursive with In-Band-SSM IPv4 P2MP Bindings (Active)
=====
    
```

RootAddr	Interface		
InnerRootAddr	Op	IngLbl	EgrLbl
Source	EgrIf/LspId		
Group			
EgrNH			
10.20.1.3 (LF)			
10.20.1.6			
10.0.101.10	Unknw		
192.168.1.1	Push	--	262139
10.3.0.1	lag-1		
10.20.1.3 (LF)			
10.20.1.6			
10.0.101.10	Unknw		
192.168.1.1	Push	--	262139
10.33.0.1	1/1/2:2		

```

-----
No. of In-Band-SSM IPv4 P2MP Active Bindings: 2
    
```

```

*A:Dut-C# show router ldp bindings active prefixes prefix 3ffe::a14:101/128
=====
    
```

```

=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
(IPv6 LSR ID 3ffe::a14:103[0])
=====
    
```

```

=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
        (S) - Static (M) - Multi-homed Secondary Support
        (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
    
```

```

=====
LDP IPv6 Prefix Bindings (Active)
=====
    
```

Prefix	Op	IngLbl	EgrLbl
EgrNextHop	EgrIf/LspId		
3ffe::a14:101/128	Push	--	262142
fe80::21	1/1/1		
3ffe::a14:101/128	Swap	262136	262142
fe80::21	1/1/1		

```

-----
No. of IPv6 Prefix Active Bindings: 2
=====
    
```

```

*A:Dut-C# show router ldp bindings active prefixes prefix 3ffe::a14:101/128 detail
=====
    
```

```

=====
LDP Bindings (IPv4 LSR ID 10.20.1.3:0)
    
```

```

(IPv6 LSR ID 3ffe::a14:103[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
      (S) - Static          (M) - Multi-homed Secondary Support
      (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv6 Prefix Bindings (Active)
=====
Prefix      : 3ffe::a14:101/128
Op          : Push
Ing Lbl     : --          Egr Lbl   : 262142
Egr Int/LspId : 1/1/1
EgrNextHop  : fe80::21
Egr. Flags  : None       Ing. Flags : None
Egr If Name : ip-10.10.2.3
Metric      : 1000       Mtu       : 1500
-----
Prefix      : 3ffe::a14:101/128
Op          : Swap
Ing Lbl     : 262136     Egr Lbl   : 262142
Egr Int/LspId : 1/1/1
EgrNextHop  : fe80::21
Egr. Flags  : None       Ing. Flags : None
Egr If Name : ip-10.10.2.3
Metric      : 1000       Mtu       : 1500
=====
No. of IPv6 Prefix Active Bindings: 2
=====
*A:Dut-C#

*A:Dut-C>config>router>isis# show router ldp bindings active prefixes prefix
10.20.1.1/32
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
              (IPv6 LSR ID 3ffe::a14:103)
=====
Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, BA - ASBR Backup FEC
  (S) - Static          (M) - Multi-homed Secondary Support
  (B) - BGP Next Hop   (BU) - Alternate Next-hop for Fast Re-Route
  (I) - SR-ISIS Next Hop (O) - SR-OSPF Next Hop
  (C) - FEC resolved with class-based-forwarding
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix      Op          IngLbl  EgrLbl
EgrNextHop  EgrIf/LspId
-----
10.20.1.1/32(I)  Swap          262122  474387
10.10.2.1        1/1/1
-----
No. of IPv4 Prefix Active Bindings: 1
=====
*A:Dut-C>config>router>isis# show router ldp bindings prefixes prefix 10.20.1.1/32
    
```

```
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
              (IPv6 LSR ID 3ffe::a14:103)
=====
Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, BA - ASBR Backup FEC
=====
LDP IPv4 Prefix Bindings
=====
Prefix                IngLbl                EgrLbl
Peer                  EgrIntf/LspId
EgrNextHop
-----
10.20.1.1/32          262122U              262131
10.20.1.2:0          --
--
10.20.1.1/32          262122U              262140
10.20.1.4:0          --
--
10.20.1.1/32          262122U              262139
10.20.1.5:0          --
--
-----
No. of IPv4 Prefix Bindings: 3
=====

*A:Dut-C# show router ldp bindings prefixes prefix 10.20.1.6/32
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
              (IPv6 LSR ID ::)
=====
Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, BA - ASBR Backup FEC
=====
LDP IPv4 Prefix Bindings
=====
Prefix                IngLbl                EgrLbl
Peer                  EgrIntf/LspId
EgrNextHop
-----
10.20.1.6/32          262142U              262142
10.20.1.1:0          --
--
10.20.1.6/32          262142U              --
10.20.1.2:0          --
--
-----
No. of IPv4 Prefix Bindings: 2
=====
```

```
*A:Dut-C# show router ldp bindings active prefixes prefix 10.20.1.6/32
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
(IPv6 LSR ID ::)
=====
Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, BA - ASBR Backup FEC
  (S) - Static (M) - Multi-homed Secondary Support
  (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
  (I) - SR-ISIS Next Hop (O) - SR-OSPF Next Hop
  (C) - FEC resolved with class-based-forwarding
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
10.20.1.6/32(B)                       Swap         262142     262142
10.20.1.2                             LspId 65545
-----
No. of IPv4 Prefix Active Bindings: 1

*A:Dut-C# show router ldp bindings active prefixes prefix 10.20.1.3/32
=====
LDP Bindings (IPv4 LSR ID 10.20.1.2:0)
(IPv6 LSR ID ::[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  (S) - Static (M) - Multi-homed Secondary Support
  (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
  (C) - FEC resolved with class-based-forwarding
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix                               Op           IngLbl      EgrLbl
EgrNextHop                           EgrIf/LspId
-----
10.20.1.3/32                           Push         --          262143
10.20.1.3                             LspId 5
10.20.1.3/32                           Push         --          262143
10.20.1.3                             LspId 6
10.20.1.3/32                           Push         --          262143
10.20.1.3                             LspId 7
10.20.1.3/32                           Push         --          262143
10.20.1.3                             LspId 8
10.20.1.3/32(C)                       Swap         262141     262143
10.20.1.3                             LspId 5
10.20.1.3/32(C)                       Swap         262141     262143
10.20.1.3                             LspId 6
```



```

10.20.1.3/32(C)          Swap          262141    262143
10.20.1.3              LspId 7

10.20.1.3/32(C)          Swap          262141    262143
10.20.1.3              LspId 8
-----
No. of IPv4 Prefix Active Bindings: 8
=====

show router ldp bindings active prefixes prefix 10.20.1.3/32 detail

=====
LDP Bindings (IPv4 LSR ID 10.20.1.2:0)
(IPv6 LSR ID ::[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
      WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
      (S) - Static          (M) - Multi-homed Secondary Support
      (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
      (C) - FEC resolved with class-based-forwarding
=====
LDP IPv4 Prefix Bindings (Active)
=====
-----
Prefix      : 10.20.1.3/32
Op          : Push
Ing Lbl     : --          Egr Lbl    : 262143
Egr Int/LspId : LspId 5
EgrNextHop  : 10.20.1.3
Egr. Flags  : None        Ing. Flags : None
Lsp Name    : B_C_5
Metric      : 1000        Mtu       : 1492
-----
Prefix      : 10.20.1.3/32
Op          : Push
Ing Lbl     : --          Egr Lbl    : 262143
Egr Int/LspId : LspId 6
EgrNextHop  : 10.20.1.3
Egr. Flags  : None        Ing. Flags : None
Lsp Name    : B_C_6
Metric      : 1000        Mtu       : 1492
-----
Prefix      : 10.20.1.3/32
Op          : Push
Ing Lbl     : --          Egr Lbl    : 262143
Egr Int/LspId : LspId 7
EgrNextHop  : 10.20.1.3
Egr. Flags  : None        Ing. Flags : None
Lsp Name    : B_C_7
Metric      : 1000        Mtu       : 1492
-----
Prefix      : 10.20.1.3/32
Op          : Push
Ing Lbl     : --          Egr Lbl    : 262143
Egr Int/LspId : LspId 8
EgrNextHop  : 10.20.1.3
Egr. Flags  : None        Ing. Flags : None
Lsp Name    : B_C_8
Metric      : 1000        Mtu       : 1492
-----
Prefix      : 10.20.1.3/32(C)
Op          : Swap
Ing Lbl     : 262141      Egr Lbl    : 262143
    
```

```
Egr Int/LspId : LspId 5
EgrNextHop   : 10.20.1.3
Egr. Flags   : None           Ing. Flags : None
Lsp Name     : B_C_5
Metric       : 1000           Mtu        : 1492
CBF Default LSP: No          CBF FC     : None
-----
Prefix       : 10.20.1.3/32(C)
Op           : Swap
Ing Lbl      : 262141         Egr Lbl    : 262143
Egr Int/LspId : LspId 6
EgrNextHop   : 10.20.1.3
Egr. Flags   : None           Ing. Flags : None
Lsp Name     : B_C_6
Metric       : 1000           Mtu        : 1492
CBF Default LSP: No          CBF FC     : None
-----
Prefix       : 10.20.1.3/32(C)
Op           : Swap
Ing Lbl      : 262141         Egr Lbl    : 262143
Egr Int/LspId : LspId 7
EgrNextHop   : 10.20.1.3
Egr. Flags   : None           Ing. Flags : None
Lsp Name     : B_C_7
Metric       : 1000           Mtu        : 1492
CBF Default LSP: Yes        CBF FC     : be l2 af l1 h2 ef h1 nc
-----
Prefix       : 10.20.1.3/32(C)
Op           : Swap
Ing Lbl      : 262141         Egr Lbl    : 262143
Egr Int/LspId : LspId 8
EgrNextHop   : 10.20.1.3
Egr. Flags   : None           Ing. Flags : None
Lsp Name     : B_C_8
Metric       : 1000           Mtu        : 1492
CBF Default LSP: No          CBF FC     : None
=====
No. of IPv4 Prefix Active Bindings: 8
=====
```

## 4.23 active-subscribers

### active-subscribers

#### Syntax

**active-subscribers detail**

**active-subscribers mirror**

**active-subscribers [summary]**

#### Context

**[Tree]** (show>service active-subscribers)

## Full Context

show service active-subscribers

## Description

This command displays active subscriber information.

## Parameters

### detail

Displays detailed output.

### mirror

Displays active subscriber mirror information.

### summary

Displays active subscriber information in a brief format.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of active service subscriber information. [Table 13: Active Subscriber Field Descriptions](#) describes the fields.

## Output Example

```
*A:Dut-C# show service active-subscribers
=====
Active Subscribers
=====
Subscriber hpolSub1 (hpolSubProf2)
-----
(1) SLA Profile Instance sap:lag-1:2000.1 - sla:hpolSlaProf1
-----
IP Address          MAC Address          Session          Origin          Svc          Fwd
-----
239.1.4.194         00:01:00:00:03:c1   PPP 1           IPCP            1000         Y
-----
(2) SLA Profile Instance sap:lag-1:2000.1 - sla:hpolSlaProf2
-----
IP Address          MAC Address          Session          Origin          Svc          Fwd
-----
239.1.4.35         00:01:00:00:03:22   N/A            ARP-Host        1000         Y
239.1.4.195         00:01:00:00:03:c2   PPP 1           IPCP            1000         Y
-----
Subscriber hpolSub16 (hpolSubProf1)
-----
(1) SLA Profile Instance sap:[lag-1:2000.2] - sla:hpolSlaProf1
-----
```

```

IP Address          MAC Address          Session          Origin          Svc          Fwd
-----
239.1.4.224        00:01:00:00:03:df   PPP 1           IPCP            1000        Y
-----
Subscriber hpolSub2 (hpolSubProf1)
-----
(1) SLA Profile Instance sap:lag-1:2000.1 - sla:hpolSlaProf1
-----
IP Address          MAC Address          Session          Origin          Svc          Fwd
-----
239.1.4.196        00:01:00:00:03:c3   PPP 1           IPCP            1000        Y
-----
Number of active subscribers : 3
=====
*A:Dut-C#
    
```

```

*A:EsrC# show service active-subscribers mirror
=====
Active Subscribers
=====
Subscriber user1 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address          MAC Address          Origin
-----
1.1.0.1            00:00:01:00:00:01   Static
                    Ingress mirror:     100    l2 af l1 nc
-----
SLA Profile Instance sap:lag-8:11 - sla:sla1
-----
IP Address          MAC Address          Origin
-----
11.1.0.1           00:00:01:00:00:01   Static
                    Ingress mirror:     100    l2 af l1 nc
-----
Subscriber user10 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address          MAC Address          Origin
-----
1.1.0.10           00:00:01:00:00:01   Static
                    Ingress mirror:     100    af ef h1 nc
-----
Subscriber user11 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address          MAC Address          Origin
-----
1.1.0.11           00:00:01:00:00:02   Static
                    Egress mirror:      100    l2 ef h1
-----
Subscriber user12 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
=====
    
```

```

IP Address      MAC Address      Origin
-----
1.1.0.12        00:00:01:00:00:03 Static
                  Ingress mirror: 100   be l2 af l1 h2 ef h1 nc
                  Egress  mirror: 100   be l2 af l1 h2 ef h1 nc
-----
Subscriber user13 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.13        00:00:01:00:00:01 Static
                  Ingress mirror: 100   l1 ef h1
-----
Subscriber user14 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.14        00:00:01:00:00:02 Static
                  Egress  mirror: 100   l2 h2 ef h1
-----
Subscriber user15 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.15        00:00:01:00:00:03 Static
                  Ingress mirror: 100   l1 nc
                  Egress  mirror: 100   l1 nc
-----
Subscriber user16 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.16        00:00:01:00:00:01 Static
                  Ingress mirror: 100   be l2 af nc
-----
SLA Profile Instance sap:lag-8:11 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
11.1.0.16       00:00:01:00:00:01 Static
                  Ingress mirror: 100   be l2 af nc
-----
Subscriber user17 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla2
-----
IP Address      MAC Address      Origin
-----
1.1.0.17        00:00:01:00:00:01 Static
                  Egress  mirror: 100   af l1 h1
-----
SLA Profile Instance sap:lag-8:11 - sla:sla2
-----
IP Address      MAC Address      Origin
-----
11.1.0.17       00:00:01:00:00:01 Static
    
```

```

        Egress mirror:      100  af l1 h1
-----
Subscriber user18 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla3
-----
IP Address      MAC Address      Origin
-----
1.1.0.18        00:00:01:00:00:01 Static
                  Ingress mirror:    100  h2
                  Egress mirror:    100  h2
-----
SLA Profile Instance sap:lag-8:11 - sla:sla3
-----
IP Address      MAC Address      Origin
-----
11.1.0.18       00:00:01:00:00:01 Static
                  Ingress mirror:    100  h2
                  Egress mirror:    100  h2
-----
Subscriber user2 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.2         00:00:01:00:00:01 Static
                  Egress mirror:    100  be l2 af l1 h2 ef h1 nc
-----
SLA Profile Instance sap:lag-8:11 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
11.1.0.2        00:00:01:00:00:01 Static
                  Egress mirror:    100  be l2 af l1 h2 ef h1 nc
-----
Subscriber user3 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.3         00:00:01:00:00:01 Static
                  Ingress mirror:    100  be l2 af l1 h2 ef h1 nc
                  Egress mirror:    100  be l2 af l1 h2 ef h1 nc
-----
SLA Profile Instance sap:lag-8:11 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
11.1.0.3        00:00:01:00:00:01 Static
                  Ingress mirror:    100  be l2 af l1 h2 ef h1 nc
                  Egress mirror:    100  be l2 af l1 h2 ef h1 nc
-----
Subscriber user4 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.4         00:00:01:00:00:01 Static
                  Ingress mirror:    100  be l2 af l1 h2 ef h1 nc
-----
Subscriber user5 (sub1)
    
```

```
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.5         00:00:01:00:00:01 Static
                  Egress mirror:   100   be l2 af l1 h2 ef h1 nc
-----
Subscriber user6 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.6         00:00:01:00:00:01 Static
                  Ingress mirror:  100   be af l1 h2
                  Egress mirror:   100   be af l1 h2
-----
Subscriber user7 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.7         00:00:01:00:00:01 Static
                  Ingress mirror:  100   be l2 af l1 h2 ef h1 nc
-----
Subscriber user8 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.8         00:00:01:00:00:01 Static
                  Egress mirror:   100   be af l1 h1 nc
-----
Subscriber user9 (sub1)
-----
SLA Profile Instance sap:lag-8:1 - sla:sla1
-----
IP Address      MAC Address      Origin
-----
1.1.0.9         00:00:01:00:00:01 Static
                  Ingress mirror:  100   be l2 af l1 h2 ef h1 nc
                  Egress mirror:   100   be l2 af l1 h2 ef h1 nc
=====
*A:EsrC#
```

```
*B:Dut-C# show service active-subscribers detail
=====
Active Subscribers
=====
Subscriber basic1
      (sub_S1)
-----
I. Sched. Policy : N/A
E. Sched. Policy : HSch1
E. Agg Rate Limit: Max
E. Min Resv Bw   : 1

I. Policer Ctrl. : N/A
E. Policer Ctrl. : N/A
I. vport-hashing : Disabled
I. sec-sh-hashing: Disabled
```

```

Q Frame-Based Ac*: Disabled
Acct. Policy      : N/A                               Collect Stats    : Disabled
ANCP Pol.        : N/A
Accu-stats-pol   : (Not Specified)
HostTrk Pol.     : N/A
IGMP Policy      : igmp1
MLD Policy       : mld1
PIM Policy       : N/A
Sub. MCAC Policy : N/A
NAT Policy       : N/A
Firewall Policy  : N/A
UPnP Policy      : N/A
NAT Prefix List  : N/A
Allow NAT bypass : No
NAT access mode  : auto
Def. Encap Offset: none                               Encap Offset Mode: none
Vol stats type   : full
Preference       : 5
LAG hash class   : 1
LAG hash weight  : 1
Sub. ANCP-String : "basic1"
Sub. Int Dest Id : ""
Igmpp Rate Adj   : N/A
RADIUS Rate-Limit: N/A
Oper-Rate-Limit  : Maximum
-----
Radius Accounting
-----
Policy           : radacct
Session Opti.Stop: False
* indicates that the corresponding row element may have been truncated.
-----
(1) SLA Profile Instance
  - sap:1/1/2:51 (VPRN 10 - gi-1-6)
  - sla:slaS2S1
-----
Description      : SLA Profile Id slaS2S1
Control plane(s) : local
Host Limits      : No Limit
Session Limits   : No Limit
Egr Sched-Policy : N/A
Ingress Qos-Policy : 11                               Egress Qos-Policy : 110
Ingress Queuing Type : Service-queuing (Not Applicable to Policer)
Ingr IP Fltr-Id  : N/A                               Egr IP Fltr-Id    : N/A
Ingr IPv6 Fltr-Id : N/A                               Egr IPv6 Fltr-Id  : N/A
Ingress Report-Rate : Maximum
Egress Report-Rate  : Maximum
Egress Remarking    : from Sap Qos
Credit Control Pol. : N/A
Category Map       : (Not Specified)
Use ing L2TP DSCP   : false
Default SPI sharing : per-sap
Hs-Agg-Rate-Limit  : Maximum
Egress HS Q stat mode: no-override
Bonding Rate-thresh. : high 90 low 80
Bonding Weight     : weight 100 5
Hs-Oper-Rate-Limit : Maximum
Egr hqos mgmt status : disabled
-----
IP Address
-----
MAC Address      Session      Origin      Svc      Fwd
-----
3fe0:0:0:10::/64
  
```



```

10:00:00:00:01:10 N/A DHCP6 10 Y
-----
SLA Profile Instance statistics
-----
Packets Octets
Off. HiPrio : 0 0
Off. LowPrio : 5 670
Off. Uncolor : 0 0
Off. Managed : 0 0
Queueing Stats (Ingress QoS Policy 11)
Dro. HiPrio : 0 0
Dro. LowPrio : 0 0
For. InProf : 0 0
For. OutProf : 5 670
Queueing Stats (Egress QoS Policy 110)
Dro. In/InplusProf : 0 0
Dro. Out/ExcProf : 0 0
For. In/InplusProf : 0 0
For. Out/ExcProf : 5 670
-----
SLA Profile Instance per Queue statistics
-----
Packets Octets
Ingress Queue 2 (Unicast) (Priority)
Off. HiPrio : 0 0
Off. LowPrio : 0 0
Dro. HiPrio : 0 0
Dro. LowPrio : 0 0
For. InProf : 0 0
For. OutProf : 0 0
Ingress Queue 3 (Unicast) (Priority)
Off. HiPrio : 0 0
Off. LowPrio : 0 0
Dro. HiPrio : 0 0
Dro. LowPrio : 0 0
For. InProf : 0 0
For. OutProf : 0 0
Ingress Queue 4 (Unicast) (Priority)
Off. HiPrio : 0 0
Off. LowPrio : 0 0
Dro. HiPrio : 0 0
Dro. LowPrio : 0 0
For. InProf : 0 0
For. OutProf : 0 0
Ingress Queue 5 (Unicast) (Priority)
Off. HiPrio : 0 0
Off. LowPrio : 0 0
Dro. HiPrio : 0 0
Dro. LowPrio : 0 0
For. InProf : 0 0
For. OutProf : 0 0
Ingress Queue 6 (Unicast) (Priority)
Off. HiPrio : 0 0
Off. LowPrio : 0 0
Dro. HiPrio : 0 0
Dro. LowPrio : 0 0
For. InProf : 0 0
For. OutProf : 0 0
Ingress Queue 7 (Unicast) (Priority)
Off. HiPrio : 0 0
Off. LowPrio : 0 0
Dro. HiPrio : 0 0
Dro. LowPrio : 0 0
    
```

```

For. InProf      : 0          0
For. OutProf     : 0          0
Ingress Queue 8 (Unicast) (Priority)
Off. HiPrio     : 0          0
Off. LowPrio    : 0          0
Dro. HiPrio     : 0          0
Dro. LowPrio    : 0          0
For. InProf     : 0          0
For. OutProf    : 0          0
Ingress Queue 9 (Unicast) (Priority)
Off. HiPrio     : 0          0
Off. LowPrio    : 5          670
Dro. HiPrio     : 0          0
Dro. LowPrio    : 0          0
For. InProf     : 0          0
For. OutProf    : 5          670
Egress Queue 1
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Egress Queue 2
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Egress Queue 3
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 5          670
Egress Queue 4
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Egress Queue 5
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Egress Queue 6
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Egress Queue 7
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Egress Queue 8
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
    
```

```

-----
(2) SLA Profile Instance
- sap:1/1/2:113 (VPRN 10 - gi-1-11)
- sla:sla17S1 PPP session:23
    
```

```

-----
Description      : SLA Profile Id sla17S1
Control plane(s) : local
Host Limits      : No Limit
    
```

```

Session Limits      : No Limit
Egr Sched-Policy   : N/A
Ingress Qos-Policy : 17
Ingress Queuing Type : Service-queuing (Not Applicable to Policer)
Ingr IP Fltr-Id    : N/A
Ingr IPv6 Fltr-Id  : N/A
Ingress Report-Rate : Maximum
Egress Report-Rate : Maximum
Egress Remarking    : from Sap Qos
Credit Control Pol. : ccpol
Category Map        : (Not Specified)
Use ing L2TP DSCP   : false
Default SPI sharing : per-session
Hs-Agg-Rate-Limit   : Maximum
Egress HS Q stat mode : no-override
Bonding Rate-thresh. : high 90 low 80
Bonding Weight      : weight 100 5
Hs-Oper-Rate-Limit  : Maximum
Egr hqos mgmt status : disabled
-----
Credit Control Policy: ccpol
Category Map         : catmap1
Diameter Session Gy  : router.be;1624914238;80
CC Failure Handling   : terminate
Number of categories
static               : 1
gx-session           : 0
gx-pcc               : 0
Category Name        : cat1
Ingress Queues       : 1
Egress Queues        : 1
Ingress Policers     : (Not Specified)
Egress Policers      : (Not Specified)
Credit Volume Used   : 0
Credit Volume Avail. : 0
Credit Volume Thres. : 0
Credit Expired       : False
Out Of Credit Action : None
Validity Time Used   : 212
HTTP Rdr URL Override: (Not Specified)
-----
IP Address
-----
MAC Address          Session          Origin          Svc          Fwd
-----
10.1.0.111
10:00:00:00:01:91 PPP 1          IPCP          10          Y
3fe1:0:0:11::/64
10:00:00:00:01:91 PPP 1          SLAAC         10          Y
-----
SLA Profile Instance statistics
-----
Packets          Octets
Off. HiPrio      : 0          0
Off. LowPrio     : 10         1320
Off. Uncolor     : 0          0
Off. Managed     : 0          0
Queueing Stats (Ingress QoS Policy 17)
Dro. HiPrio     : 0          0
Dro. LowPrio    : 0          0
For. InProf     : 0          0
For. OutProf    : 10         1320
Queueing Stats (Egress QoS Policy 110)
Dro. In/InplusProf : 0          0
    
```

```

Dro. Out/ExcProf      : 0          0
For. In/InplusProf   : 0          0
For. Out/ExcProf     : 10         1320
-----
SLA Profile Instance per Queue statistics
-----
                Packets          Octets
Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio         : 0          0
Off. LowPrio        : 0          0
Dro. HiPrio         : 0          0
Dro. LowPrio        : 0          0
For. InProf         : 0          0
For. OutProf        : 0          0
Ingress Queue 2 (Unicast) (Priority)
Off. HiPrio         : 0          0
Off. LowPrio        : 10         1320
Dro. HiPrio         : 0          0
Dro. LowPrio        : 0          0
For. InProf         : 0          0
For. OutProf        : 10         1320
Ingress Queue 3 (Unicast) (Priority)
Off. HiPrio         : 0          0
Off. LowPrio        : 0          0
Dro. HiPrio         : 0          0
Dro. LowPrio        : 0          0
For. InProf         : 0          0
For. OutProf        : 0          0
Egress Queue 1
Dro. In/InplusProf  : 0          0
Dro. Out/ExcProf    : 0          0
For. In/InplusProf  : 0          0
For. Out/ExcProf    : 0          0
Egress Queue 2
Dro. In/InplusProf  : 0          0
Dro. Out/ExcProf    : 0          0
For. In/InplusProf  : 0          0
For. Out/ExcProf    : 0          0
Egress Queue 3
Dro. In/InplusProf  : 0          0
Dro. Out/ExcProf    : 0          0
For. In/InplusProf  : 0          0
For. Out/ExcProf    : 10         1320
Egress Queue 4
Dro. In/InplusProf  : 0          0
Dro. Out/ExcProf    : 0          0
For. In/InplusProf  : 0          0
For. Out/ExcProf    : 0          0
Egress Queue 5
Dro. In/InplusProf  : 0          0
Dro. Out/ExcProf    : 0          0
For. In/InplusProf  : 0          0
For. Out/ExcProf    : 0          0
Egress Queue 6
Dro. In/InplusProf  : 0          0
Dro. Out/ExcProf    : 0          0
For. In/InplusProf  : 0          0
For. Out/ExcProf    : 0          0
Egress Queue 7
Dro. In/InplusProf  : 0          0
Dro. Out/ExcProf    : 0          0
For. In/InplusProf  : 0          0
For. Out/ExcProf    : 0          0
Egress Queue 8
    
```

```

Dro. In/InplusProf      : 0           0
Dro. Out/ExcProf       : 0           0
For. In/InplusProf     : 0           0
For. Out/ExcProf       : 0           0
-----
Number of active subscribers : 1
=====
*B:Dut-C#
    
```

**Table 13: Active Subscriber Field Descriptions** describes active subscriber output fields.

*Table 13: Active Subscriber Field Descriptions*

Field	Description
Active Subscribers	The active subscriber's name
IP Address	The IP address of the active subscriber
MAC Address	The MAC address of the active subscriber
Session	The session type
Origin	The IPCP parameter
Svc	The service ID
Fwd	Option to forward
Number of active subscribers	The total number of active subscribers

## 4.24 adjacency

### adjacency

#### Syntax

**adjacency** [detail]

#### Context

**[Tree]** (show>service>id>spb adjacency)

#### Full Context

show service id spb adjacency

#### Description

This command displays SPB adjacency information.

## Parameters

### detail

Shows detailed information

## Platforms

All

## Output

The following output is an example of service SPB adjacency information.

### Output Example

```
=====
ISIS Adjacency
=====
System ID           Usage State Hold Interface           MT Enab
-----
Dut-B               L1    Up    19    sap:1/2/2:1.1           No
Dut-C               L1    Up    21    sap:1/2/3:1.1           No
-----
Adjacencies : 2
=====
```

## adjacency

## Syntax

**adjacency** [*ip-address* | *ip-int-name* | *nbr-system-id*] [**detail**]

## Context

[\[Tree\]](#) (show>router>isis adjacency)

## Full Context

show router isis adjacency

## Description

This command displays information regarding IS-IS neighbors. When no *ip-address*, *ip-int-name*, or *nbr-system-id* is specified, then all adjacencies are displayed.

## Parameters

### *ip-address*

When specified, only adjacencies with that interface is displayed.

**Values** ipv4-address:

- a.b.c.d (host bits must be 0)

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)

- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

**ip-int-name**

When specified, only adjacencies with that interface is displayed.

**nbr-system-id**

When specified, only the adjacency with that ID is displayed.

**detail**

All output is displayed in the detailed format.

**mt-id-number**

Specifies the multi topology ID number for this route.

**Platforms**

All

**Output**

Standard and Detailed IS-IS Adjacency Output

[Table 14: Standard and Detailed Adjacency Output Fields](#) describes the standard and detailed command output fields for an IS-IS adjacency.

*Table 14: Standard and Detailed Adjacency Output Fields*

Label	Description
Interface	Interface name associated with the neighbor.
System-id	Neighbor's system ID.
Level	1-L1 only, 2-L2 only, 3-L1 and L2.
State	Up, down, new, one-way, initializing, or rejected.
Hold	Hold time remaining for the adjacency.
SNPA	Subnetwork point of attachment, MAC address of the next hop.
Circuit type	Level on the interface L1, L2, or both.
Expires In	Number of seconds until adjacency expires.
Priority	Priority to become designated router.
Up/down transitions	Number of times neighbor state has changed.
Event	Event causing last transition.
Last transition	Time since last transition change.

Label	Description
Speaks	Supported protocols (only IP).
IP address	IP address of neighbor.
MT enab	Yes — The neighbor is advertising at least 1 non MTID#0.
Topology	Derived from the MT TLV in the IIH <ul style="list-style-type: none"> <li>• MT#0, MT#2 =&gt; "Topology : Unicast, IPv6-Unicast"</li> <li>• Native IPv4 or native IPv6 =&gt; "Topology : Unicast"</li> </ul> Not supported MTIDs => Topology line suppressed

### Output Example

```

*A:Dut-C# show router isis adjacency

=====
Rtr Base ISIS Instance 0 Adjacency
=====
System ID                Usage State Hold Interface                MT-ID
-----
Dut-B                    L1L2 Up    23    to_Dut-B                    0
Dut-D                    L1L2 Up    23    to_Dut-D1                   0
-----
Adjacencies : 2
=====

*A:Dut-C# show router isis adjacency Dut-D detail

=====
Rtr Base ISIS Instance 0 Adjacency (detail)
=====
SystemID      : Dut-D                SNPA      : 00:00:00:00:00:04
Interface    : to_Dut-D1              Up Time   : 0d 00:05:23
State        : Up                  Priority   : 0
Nbr Sys Typ  : L1L2                L. Circ Typ : L1L2
Hold Time    : 19                  Max Hold  : 27
Adj Level    : L1L2                MT Enabled : No
Topology     : Unicast

IPv6 Neighbor : fe80::200:ff:fe00:4
IPv4 Neighbor : 1.3.4.4
IPv4 Adj SID  : Label 262139
Restart Support : Disabled
Restart Status : Not currently being helped
Restart Suppressed : Disabled
Number of Restarts: 0
Last Restart at : Never

=====

*A:Dut-C#

*A:ALA-A# show router isis adjacency 180.0.7.12

=====
Rtr Base ISIS Instance 0 Adjacency
=====
System ID                Usage State Hold Interface
-----
    
```



```

asbr_east                L2    Up    25   if2/5
-----
Adjacencies : 1
=====
*A:ALA-A#

*A:ALA-A# show router isis adjacency if2/5
=====
Rtr Base ISIS Instance 0 Adjacency
=====
System ID                Usage State Hold Interface
-----
asbr_east                L2    Up    20   if2/5
-----
Adjacencies : 1
=====
*A:ALA-A#

*A:Dut-A# show router isis adjacency detail
=====
Rtr Base ISIS Instance 0 Adjacency (detail)
=====
SystemID      : Dut-B                SNPA      : 20:81:01:01:00:01
Interface    : ip-3FFE::A0A:101      Up Time   : 0d 00:56:10
State        : Up                    Priority   : 64
Nbr Sys Typ  : L1                    L. Circ Typ : L1
Hold Time    : 2                     Max Hold  : 2
Adj Level    : L1                    MT Enabled : Yes
Topology     : Unicast, IPv6-Unicast

IPv6 Neighbor : FE80::2281:1FF:FE01:1
IPv4 Neighbor : 10.10.1.2
Restart Support : Disabled
Restart Status : Not currently being helped
Restart Suppressed : Disabled
Number of Restarts: 0
Last Restart at : Never

SystemID      : Dut-B                SNPA      : 20:81:01:01:00:01
Interface    : ip-3FFE::A0A:101      Up Time   : 0d 00:56:10
State        : Up                    Priority   : 64
Nbr Sys Typ  : L2                    L. Circ Typ : L2
Hold Time    : 2                     Max Hold  : 2
Adj Level    : L2                    MT Enabled : Yes
Topology     : Unicast, IPv6-Unicast

IPv6 Neighbor : FE80::2281:1FF:FE01:1
IPv4 Neighbor : 10.10.1.2
Restart Support : Disabled
Restart Status : Not currently being helped
Restart Suppressed : Disabled
Number of Restarts: 0
Last Restart at : Never

SystemID      : Dut-F                SNPA      : 00:00:00:00:00:00
Interface    : ies-1-3FFE::A0A:1501  Up Time   : 0d 01:18:34
State        : Up                    Priority   : 0
Nbr Sys Typ  : L1L2                 L. Circ Typ : L1L2
Hold Time    : 5                     Max Hold  : 6
Adj Level    : L1L2                 MT Enabled : Yes
Topology     : Unicast, IPv6-Unicast
    
```

```
IPv6 Neighbor      : FE80::2285:FFFF:FE00:0
IPv4 Neighbor      : 10.10.21.6
Restart Support    : Disabled
Restart Status     : Not currently being helped
Restart Supressed  : Disabled
Number of Restarts: 0
Last Restart at    : Never
=====
```

```
*A:Dut-A#
```

## adjacency

### Syntax

```
adjacency [system-id]
```

### Context

```
[Tree] (clear>router>isis adjacency)
```

### Full Context

```
clear router isis adjacency
```

### Description

This command clears and resets the entries from the IS-IS adjacency database.

### Parameters

**system-id**

When the system ID is entered, only the specified entries are removed from the IS-IS adjacency database.

### Platforms

All

## adjacency

### Syntax

```
adjacency [system-id]
```

### Context

```
[Tree] (clear>service>id>spb adjacency)
```

### Full Context

```
clear service id spb adjacency
```

## Description

This command clears and resets IS-IS adjacencies.

## Parameters

### *system-id*

Specifies the system ID. When the system ID is entered, only the specified entries are removed from the IS-IS adjacency database.

**Values** 6-octet system identifier (xxxx.xxxx.xxxx)

## Platforms

All

## 4.25 adjust-autobandwidth

### adjust-autobandwidth

## Syntax

```
adjust-autobandwidth [lsp lsp-name [force [bandwidth mbps]]]
```

## Context

[\[Tree\]](#) (tools>perform>router>mpls adjust-autobandwidth)

## Full Context

```
tools perform router mpls adjust-autobandwidth
```

## Description

This command initiates an immediate automatic bandwidth adjustment attempt for either one specific LSP or all active LSPs. The automatic bandwidth adjustment is made to the primary or secondary path of the LSP, whichever is the currently active path. If an LSP is not specified, then the system assumes the command applies to all LSPs. The optional **force** parameter, which is available only when an LSP is referenced, determines whether **adjust-up** and **adjust-down** threshold checks are applied. If **force** is not specified then the maximum average data rate must differ from the current reservation by more than the **adjust-up** or **adjust-down** thresholds, otherwise no bandwidth adjustment occurs. If the force option is specified then, bandwidth adjustment ignores the configured thresholds. If a bandwidth is specified as part of the force option then the bandwidth of the LSP is changed to this specific value, otherwise the bandwidth is changed to the maximum average data rate that has been measured by the system in the current adjust interval.

The adjust-count and maximum average data rate are not reset by the manual **auto-bandwidth** command, whether or not the bandwidth adjustment succeeds or fails. The overflow count is reset only if the manual **auto-bandwidth** attempt is successful.

## Parameters

### *isp-name*

Specifies the LSP name, up to 64 characters, to which this command applies. If this parameter is not supplied the command applies to all active LSPs.

### *mbps*

Specifies the bandwidth that the LSP should be immediately resized to.

**Values** 0 to 6400000

## Platforms

All

## 4.26 admin

### admin

## Syntax

admin

## Context

[\[Tree\]](#) (show>app-assure>group>policy admin)

## Full Context

show application-assurance group policy admin

## Description

This command displays the application-assurance policy uncommitted changes.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **admin** command.

### Output Example

```
*A:ALA-48>show>app-assure>group>policy# admin
      begin
      app-filter
      entry 10 create
      shutdown
      exit
    exit
  app-qos-policy
  entry 10 create
```

```
        shutdown
        exit
    exit
    commit
*A:ALA-48>show>app-assure>group>policy#
```

## 4.27 admin-group

### admin-group

#### Syntax

```
admin-group [name]
```

#### Context

[\[Tree\]](#) (show>router>if-attribute admin-group)

#### Full Context

```
show router if-attribute admin-group
```

#### Description

This command displays administrative group statistics.

#### Parameters

*name*

Displays entries that are associated with the specified administrative group name, up to 32 characters.

#### Platforms

All

#### Output

The following output is an example of administrative group statistics, and [Table 15: Administrative Group Fields](#) describes the fields.

#### Output Example

```
*A:node-3# show router if-attribute admin-group
=====
Interface Administrative Groups
=====
Group Name                Group Value
-----
Admin                      4
admin                      1
-----
No. of Groups: 2
=====
```

```
*A:node-3#
```

Table 15: Administrative Group Fields

Label	Description
Group Name	The name of the administrative group
Group Value	The integer value of the administrative group
No. of Groups	The total number of displayed administrative groups

## 4.28 admin-lock

```
admin-lock
```

### Syntax

```
admin-lock
```

### Context

[\[Tree\]](#) (tools>perform>service>id admin-lock)

### Full Context

```
tools perform service id admin-lock
```

### Description

Commands in this context apply an administrative lock for a spoke SDP that is bound to a VLL SAP, another spoke-\ sdp or a VPLS interface for an MPLS-TP PW. After the PW is locked, it can be put into loopback mode. The command must be executed at both ends of the PW or MS-PW represented by the spoke-\ SDP. Test traffic can then be injected using a test SAP.

### Platforms

All

## 4.29 admit-deny-stats

```
admit-deny-stats
```

### Syntax

```
admit-deny-stats
```

## Context

[\[Tree\]](#) (tools>dump>app-assure>group admit-deny-stats)

## Full Context

tools dump application-assurance group admit-deny-stats

## Description

This command displays application-assurance admit-deny statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of AA admit-deny statistics information.

### Output Example

```
tools dump application-assurance group 1 admit-deny-stats
=====
Application-Assurance Group 1 Admit-Deny Statistics
=====
-----
Packet Validation Statistics
  Admitted Sub-To-Net   Denied Sub-To-Net   Admitted Net-To-Sub   Denied Net-To-Sub
  (Packets)             (Packets)           (Packets)              (Packets)
-----
Error
  0                     0                   0                      0
Fragments: Out-Of-Order
  0                     0                   0                      0
Fragments: All
  0                     0                   0                      0
Overload
  N/A                   0                   N/A                    0
-----
TCP Validation Statistics
  Admitted Sub-To-Net   Denied Sub-To-Net   Admitted Net-To-Sub   Denied Net-To-Sub
  (Packets)             (Packets)           (Packets)              (Packets)
-----
2  0                     0                   0                      0
net 14                     1                   15                     1
-----
```

## 4.30 adv-config-policy

### adv-config-policy

#### Syntax

**adv-config-policy** [*policy-name*] [**association**]

## Context

[\[Tree\]](#) (show>qos adv-config-policy)

## Full Context

show qos adv-config-policy

## Description

This command displays advanced QoS policy information.

## Parameters

### *policy-name*

The name of the advanced QoS policy.

### *association*

Displays associations related to the specified adv-config-policy.

## Platforms

All

## Output

The following output is an example of advanced QoS policy information, and [Table 16: Show QoS Scheduler-Hierarchy Customer Output Fields](#) describes the advanced QoS policy fields.

### Output Example

```
*A:PE# show qos adv-config-policy "adv1"
=====
QoS Advanced Configure Policy
=====
Policy Name           : adv1
Description            : (Not Specified)
OM Add PIR Prcnt      : 0.00           OM Add Rate           : 0
  OM Add [min-only : false] [active-min-only : false]
OM Gran PIR Prcnt     : 0.00           OM Gran Rate          : 0
Max Dec PIR Prcnt     : 100.00         Max Dec Rate          : 0
Abv Off PIR Prcnt     : 100.00         Abv Off Rate          : max
BWD Gran PIR Prcnt    : 0.00           BWD Gran Rate         : 0
Fast Start            : Disabled       Fast Stop              : Disabled
Time Average Factor   : 0 [dec-only : false]
Hi Rate Hold Time     : 0 [active-min-only : false]
Sample Interval       : 1             Enqueue on PIR Zero   : false
Limit PIR Zero Drain  : false         Init LUB with min PIR : false
Internal Sched Wght Mode: no-override
Unconsumed Agg-rate   : 100.00         Delta Consumed Agg-rate : 20.00
Unconsumed Hi-tier-rate : 100.00         Delta Consumed Hi-tier-rate : 5.00
=====
*A:PE#
```



Table 16: Show QoS Scheduler-Hierarchy Customer Output Fields

Label	Description
Policy Name	Displays the policy name.
Description	Displays the policy description.
OM Add PIR Prcnt	Displays the percentage of the administrative PIR by which the measured rate is increased.
OM Add Rate	Displays the amount, in kb/s, by which the measured rate is increased.
OM Add	<p>min-only — When this option is true, the system uses the specified increase as a minimum offered rate even for inactive queues or policers associated with the policy.</p> <p>active-min-only — When this option is true, the respective rate or percentage is treated as the minimum offered rate for a queue only when the queue has an actual non-zero offered rate. This is intended to limit the artificial increase in offered rate to queues that are currently active. When a queue's measured offered rate drops to zero, the system stops enforcing the minimum value.</p>
OM Gran PIR Prcnt	Displays the percentage of the child's administrative PIR that is used as the threshold sensitivity to the offered rate change. If a value of 0 or 0.00 is used, the system will interpret this equivalent to no granularity.
OM Gran Rate	Displays the explicit rate, in kb/s, that are used as the child's offered rate change sensitivity value. If a rate sensitivity of 0 is specified, the system interprets this equivalent to no granularity.
Max Dec PIR Prcnt	Displays the percentage of the child's administrative PIR that is used as the decrement limit to the offered rate change. If a value of 100 or 100.00 is used, the system interprets this equivalent as <b>no max-decrement</b> .
Max Dec Rate	Displays the rate, in kb/s, that is used as the child's offered rate change sensitivity value. If a rate sensitivity of 0 is specified, the system interprets this equivalent to no granularity.
Abv Off PIR Prcnt	<p>Displays the percentage of the child's administrative PIR that is used as the fair share increase limit. The new operational PIR result is capped by the child's PIR.</p> <p>If a value of 0 or 0.00 is specified, the system will disable the fair share increase function and only configure the actual distribution rate.</p>

Label	Description
	If a value of 100 or 100.00 is used, the system will interpret this equivalent to executing the <b>no above-offered-cap</b> command and return the fair-share operation to the default behavior.
Abv Off Rate	Specifies the explicit rate, in kb/s, that is used as the limit to the child's fair share increase to the operational PIR. The new operational PIR result is capped by the child's PIR.  If a value of 0 is used, the system will disable the fair share increase function and only configure the actual distribution rate.
BWD Gran PIR Prcnt	Displays the percentage of the child's administrative PIR that is used as the rounding step value. If a value of 0 or 0.00 is used, the system will interpret this equivalent to <b>no granularity</b> .
BWD Gran Rate	Displays the rate, in kb/s, that is used as the rounding step value. If a value of 0 is used, the system will interpret this equivalent to <b>no granularity</b> .
Fast Start	Displays whether fast detection of initial bandwidth on a child policer or queue associated with the policy is enabled.
Fast Stop	Displays whether fast detection of lack of offered rate on a child policer or queue associated with the policy is enabled.
Time Average Factor	Displays the time average factor used to calculate the weight of the new offered rate using a portion of the previous offered rate.  If <b>dec-only</b> is true, the time average factor adjustment is only applied if the new offered rate is decreasing compared to the previous offered rate.
Hi Rate Hold Time	Displays the time period that the current offered rate is maintained for a child policer or queue when it is seen that the offered rate is decreasing. The offered measurement that triggers the hold time is used when the hold timer expires, unless a higher offered rate is seen in the interim. When a higher rate is observed, the hold timer is canceled and the higher offered rate is used immediately.  If <b>active-min-only</b> is true, the respective rate or percentage is treated as the minimum offered rate for a queue, only when the queue has an actual non-zero offered rate.
Sample Interval	Displays the number of intervening sample periods before a new offered rate is measured.
Enqueue on PIR Zero	Displays whether <b>enqueue-on-pir-zero</b> is enabled. If it is enabled, when the operational PIR is set to zero, the queue's MBS remains set to the normal value and is not also set to zero.

Label	Description
Limit PIR Zero Drain	If true, the system to use the minimum configurable PIR instead of an H-QoS derived zero operational PIR.
Init LUB with min PIR	If true, new queues associated with a LUB context are assigned a minimum rate operational PIR to be applied to the queue for use by enqueued packets prior to an H-QoS iteration.
Internal Sched Wght Mode	Specifies the internal scheduler weight: <b>default</b> — Specifies that queues are equally weighted, except at ingress for mixed-speed LAGs without per-fp-inq-queuing enabled and at egress for all mixed-speed LAGs, in which cases the queues are weighted based on port speed. <b>force-equal</b> — Specifies that the queues are always equally weighted. <b>offered-load</b> — Specifies that the queues are weighted based on observed offered load. <b>capped-offered-load</b> — Specifies that the queues are weighted based on observed offered load capped by PIR.
Unconsumed Agg-rate	Displays the percentage of the unconsumed aggregate rate that can be given to a queue at the end of an H-QoS pass.
Delta Consumed Agg-rate	Displays the percentage of the delta consumed aggregate rate that can be given to a queue at the end of an H-QoS pass.
Unconsumed Hi-tier-rate	Displays the percentage of the unconsumed higher tier rate that can be given to a queue at the end of an H-QoS pass.
Delta Consumed Hi-tier-rate	Displays the percentage of the delta consumed higher tier rate that can be given to a queue at the end of an H-QoS pass.

## 4.31 agg-rate

### agg-rate

#### Syntax

agg-rate

#### Context

[\[Tree\]](#) (show>qos agg-rate)

#### Full Context

show qos agg-rate

## Description

This command displays aggregate rate information.

## Platforms

All

## 4.32 aggregate

### aggregate

## Syntax

**aggregate** [*family*] [**active**] [**detail**]

## Context

[\[Tree\]](#) (show>router aggregate)

## Full Context

show router aggregate

## Description

This command displays aggregated routes.

## Parameters

### **active**

This keyword filters out inactive aggregates.

### **detail**

This keyword displays detailed information.

### **family**

Specifies the family to display.

**Values**    ipv4, ipv6

## Platforms

All

## Output

The following output is an example of router aggregate information, and [Table 17: Show Aggregate Field Descriptions](#) describes the output fields.

## Output Example

```
*A:ALA-12# show router 3 aggregate
=====
```

```

Aggregates (Service: 3)
=====
Prefix                Summary  AS Set   Aggr AS   Aggr IP-Address  State
-----
No. of Aggregates: 0
-----
*A:ALA-12#

*A:Dut-A>config>router# show router aggregate

=====
Aggregates (Router: Base)
=====
Prefix                Summary  NextHop   Aggr IP-Address  Aggr AS  State  NextHopType
-----
10.2.3.0/24           False   10.2.2.2   0.0.0.0          False    0      Inactive
                                           Indirect
10.2.0.0/16           False   10.2.2.2   0.0.0.0          False    0      Active
                                           None
-----
No. of Aggregates: 2
=====

*A:CPM133>config>router# show router aggregate

=====
Aggregates (Router: Base)
=====
Prefix                Summary  NextHop   Aggr IP-Address  Aggr AS  State  NextHopType
-----
10.0.0.0/8           False   10.2.2.2   0.0.0.0          False    0      Inactive
                                           Blackhole
-----
No. of Aggregates: 1
=====
    
```

Table 17: Show Aggregate Field Descriptions

Label	Description
Prefix	Displays the destination address of the aggregate route in dotted decimal notation.
Summary	Specifies whether the aggregate or more specific components are advertised.
AS Set	Displays an aggregate where the path advertised for the route consists of all elements contained in all paths that are being summarized.

Label	Description
Aggr AS	Displays the aggregator path attribute to the aggregate route.
Aggr IP-Address	The IP address of the aggregated route.
State	The operational state of the aggregated route.
No. of Aggregates	The total number of aggregated routes.

### 4.33 alarm-contact-input

#### alarm-contact-input

##### Syntax

**alarm-contact-input** {*alarm-contact-input-id* | **all**} [**detail**]

##### Context

[\[Tree\]](#) (show>system alarm-contact-input)

##### Full Context

show system alarm-contact-input

##### Description

This command displays the alarm contact input information.

##### Parameters

###### **alarm-contact-input-id**

Specifies the alarm contact input pin number. Alarm contact input information is displayed only for the specified pin.

**Values** 1 to 4

###### **all**

Displays alarm contact input information for all pins.

###### **detail**

Displays detailed alarm contact input information for the specifies pin or all pins.

##### Platforms

7750 SR-a

## Output

The following output is an example of alarm contact input information, and [Table 18: Alarm Contact Input Field Descriptions](#) describes the output fields.

### Output Example

```

=====
Alarm Contact Input
=====
Alarm Input Pin Number      : 1
  Description                : (Not Specified)
  Alarm Input Pin Current State : Disabled
  Alarm Severity             : major
  Alarm Raised               : No
  Last State Change          : 03/18/2021 14:45:31
Alarm Input Pin Number      : 2
  Description                : (Not Specified)
  Alarm Input Pin Current State : Disabled
  Alarm Severity             : major
  Alarm Raised               : No
  Last State Change          : 02/21/2021 11:46:45
Alarm Input Pin Number      : 3
  Description                : (Not Specified)
  Alarm Input Pin Current State : Disabled
  Alarm Severity             : major
  Alarm Raised               : No
  Last State Change          : 02/22/2021 16:20:00
Alarm Input Pin Number      : 4
  Description                : (Not Specified)
  Alarm Input Pin Current State : Disabled
  Alarm Severity             : major
  Alarm Raised               : No
  Last State Change          : 03/18/2021 14:45:31
    
```

Table 18: Alarm Contact Input Field Descriptions

Label	Description
Alarm Input Pin Number	Indicates the alarm contact input pin number.
Description	Displays the configured description string for the alarm contact input
Alarm Input Pin Current State	Indicates the configured administrative state of the alarm contact input.  Disabled — The alarm contact input is disabled ( <b>shutdown</b> ) and log events will not be generated for changes to the input pin status.  Enabled — The alarm contact input is enabled ( <b>no shutdown</b> ) and log events are generated for changes to the input pin status as long as the log events are not suppressed in <b>event-control</b> configuration.
Alarm Severity	Indicates the configured severity of the associated CHASSIS log event.

Label	Description
Alarm Raised	Indicates if the input pin is triggered or not.
Last State Change	Indicates when the input pin last changed state.

## 4.34 alarms

### alarms

#### Syntax

**alarms** [**cleared**] [**count** *count*] [**newer-than** *days*] [**severity** *severity-level*]

#### Context

[\[Tree\]](#) (show>system alarms)

#### Full Context

show system alarms

#### Description

This command displays facility alarms on the system. Alarm support covers a focused subset of router states that are likely to indicate service impacts (or imminent service impacts) related to the overall state of hardware assemblies (cards, fans, links, and so on).

#### Platforms

All

#### Output

[Table 19: Show Facility Alarms Output Fields](#) describes the alarms output fields.

Use the following command to display facility alarms on the system.

```
show system alarms
```

#### Output Example

```
=====
Alarms [Critical:1 Major:2 Minor:0 Warning:0 Total:3]
=====
Index      Date/Time                Severity    Alarm        Resource
  Details
-----
8          2011/04/01 18:36:43.80 MAJOR      7-2011-1     Power Supply 1
Power supply 1, power lost
7          2011/04/01 18:35:57.00 MAJOR      7-2005-1     Chassis 1
Chassis 1: temperature too high
```



```
6          2011/04/01 18:35:24.80 CRITICAL 7-2006-1 Fan 1
Fan 1 failed
=====
```

### Output Example (ESA)

```
=====
Alarms [Critical:3 Major:1 Minor:0 Warning:0 Total:4]
=====
Index      Date/Time                Severity Alarm      Resource
  Details
-----
8          2022/08/23 17:06:54.70 MAJOR   7-2426-1  Chassis esa-1
ESA Chassis temperature status degraded
7          2022/08/23 17:06:54.70 CRITICAL 7-2416-1  Chassis esa-1
ESA Chassis fan status degraded
6          2022/08/23 17:06:14.70 CRITICAL 7-2410-1  Chassis esa-1
ESA Chassis power supply 2 status failed
5          2022/08/23 17:06:14.70 CRITICAL 7-2404-1  Chassis esa-1
ESA Chassis power supply 1 status degraded
=====
```

Use the following command to display cleared facility alarms on the system.

```
show system alarms cleared
```

### Output Example

```
=====
Cleared Alarms [Size:500 Total:5 (not wrapped)]
=====
Index      Date/Time                Severity Alarm      Resource
  Details
-----
5          2011/04/01 18:11:55.00 MAJOR   7-2005-1  Chassis 1
Clear Chassis temperature too high alarm
3          2011/04/01 18:11:54.50 CRITICAL 7-2051-1  Power Supply 1
Clear Power Supply failure
2          2011/04/01 18:11:54.40 CRITICAL 7-2050-1  Power Supply 1
Clear Power Supply failure
4          2011/04/01 18:11:54.10 MINOR   7-2004-1  Fan 1
Clear Fan wrong type failure
1          2011/04/01 18:11:54.00 CRITICAL 7-2007-1  Power Supply 1
Clear Power Supply failure
=====
```

### Output Example (ESA)

```
=====
Cleared Alarms [Size:500 Total:14 (not wrapped)]
=====
Index      Date/Time                Severity Alarm      Resource
  Details
```

```

-----
15      2022/09/22 14:49:36.00 MAJOR      7-2422-1 Chassis esa-1
      ESA Chassis power supply redundancy degraded - cleared, now redundant

14      2022/09/22 14:49:36.00 MAJOR      7-2400-1 Chassis esa-1
      ESA Chassis aggregate hardware degraded status cleared, now ok

13      2022/09/22 14:49:31.00 CRITICAL 7-2410-1 Chassis esa-1
      ESA Chassis power supply 2 failed status cleared, now ok

12      2022/09/22 11:27:04.80 MAJOR      7-2400-1 Chassis esa-1
      ESA Chassis aggregate hardware degraded status cleared, now ok
    
```

Table 19: Show Facility Alarms Output Fields

Label	Description
Index	Alarm index number
Date/Time	Date and time string for the alarm
Severity	Severity level of the alarm
Alarm	Alarm identifier
Resource	Facility associated with the alarm
Details	Description of the alarm

## 4.35 ale-adjust

### ale-adjust

#### Syntax

**ale-adjust**

**ale-adjust subscriber** *sub-ident-string*

#### Context

[\[Tree\]](#) (show>service>active-subscribers ale-adjust)

#### Full Context

show service active-subscribers ale-adjust

#### Description

This command displays subscriber Access Loop Encapsulation adjust information.

## Parameters

### *sub-ident-string*

Displays subscriber Access Loop Encapsulation adjust for the specified subscriber, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 4.36 alias

### alias

## Syntax

alias

## Context

[\[Tree\]](#) (show alias)

## Full Context

show alias

## Description

This command shows command aliases.



### Note:

This command is not available in the MD-CLI. Use the MD-CLI **info detail environment command-alias** command.

## Platforms

All

## Output

The following output is an example of alias information, and [Table 20: Show Alias Output Fields](#) describes the output fields.

### Output Example

```
A:ALA-103>config>system# show alias
=====
Alias-Name                Alias-command-name
=====
sri                       show router interface
sse                       show service service-using epipe
ssvpls                   show service service-using vpls
ssvprn                   show service service-using vprn
ssi                       show service service-using ies
```

```
-----
Number of aliases : 5
=====
A:ALA-103>config>system#
```

Table 20: Show Alias Output Fields

Label	Description
Alias-Name	Displays the name of the alias.
Alias-command-name	The command and parameter syntax that define the alias.
Number of aliases	The total number of aliases configured on the router.

## 4.37 all

all

### Syntax

all

### Context

[\[Tree\]](#) (show>service>id all)

### Full Context

show service id all

### Description

This command displays all information about the service.

### Platforms

All

### Output

Show All Service-ID Output

### Output Example

```
*A:PE-6# show service id 1 all
=====
Service Detailed Information
=====
Service Id       : 1                Vpn Id           : 0
Service Type    : VPLS
Name            : 1
Description     : (Not Specified)
```

```

Customer Id      : 1                Creation Origin   : manual
Last Status Change: 05/08/2018 09:40:32
Last Mgmt Change  : 05/08/2018 09:40:24
Etree Mode       : Disabled
Admin State      : Up                Oper State       : Up
MTU              : 1514
SAP Count        : 1                SDP Bind Count   : 1
Snd Flush on Fail : Disabled         Host Conn Verify : Disabled
SHCV pol IPv4    : None
Propagate MacFlush: Disabled         Per Svc Hashing  : Disabled
Allow IP Intf Bind: Disabled
Fwd-IPv4-Mcast-To*: Disabled        Fwd-IPv6-Mcast-To*: Disabled
Mcast IPv6 scope : mac-based
Def. Gateway IP  : None
Def. Gateway MAC : None
Evpn Mcast GW    : Enabled           Mcast-GW Type    : MEG
Temp Flood Time  : Disabled          Temp Flood        : Inactive
Temp Flood Chg Cnt: 0
SPI load-balance : Disabled
TEID load-balance : Disabled
Src Tep IP       : N/A
Vxlan ECMP      : Disabled
-----
BGP Information
-----
Split Horizon Group specifics
-----
ETH-CFM service specifics
-----
Tunnel Faults    : ignore
-----
Service Destination Points(SDPs)
-----
Sdp Id 65:1 -(192.0.2.5)
-----
Description      : (Not Specified)
SDP Id           : 65:1                Type              : Spoke
Spoke Descr     : (Not Specified)
Split Horiz Grp : (Not Specified)
Etree Root Leaf Tag: Disabled         Etree Leaf AC     : Disabled
VC Type         : Ether                VC Tag            : n/a
Admin Path MTU  : 0                    Oper Path MTU     : 8974
Delivery        : MPLS
Far End         : 192.0.2.5            Tunnel Far End    :
Oper Tunnel Far End: 192.0.2.5
LSP Types       : LDP
Hash Label      : Disabled             Hash Lbl Sig Cap  : Disabled
Oper Hash Label : Disabled
Entropy Label   : Disabled
Admin State     : Up                    Oper State        : Down
MinReqd SdpOperMTU : 1514
Acct. Pol      : None                  Collect Stats     : Disabled
Ingress Label  : 524279                 Egress Label     : None
Ingr Mac Fltr-Id : n/a                 Egr Mac Fltr-Id  : n/a
Ingr IP Fltr-Id : n/a                 Egr IP Fltr-Id   : n/a
Ingr IPv6 Fltr-Id : n/a                Egr IPv6 Fltr-Id : n/a
Admin ControlWord : Not Preferred          Oper ControlWord  : False
BFDD Template  : None
BFDD-Enabled   : no                    BFDD-Encap       : ipv4
Last Status Change : 05/07/2018 16:50:10      Signaling        : TLDP
Last Mgmt Change  : 05/08/2018 09:40:24
Endpoint        : N/A                    Precedence       : 4
    
```

```

PW Status Sig      : Enabled
Force Vlan-Vc     : Disabled
Class Fwding State : Down
Flags             : NoEgrVCLabel
Time to RetryReset : never
Mac Move          : Blockable
Local Pw Bits     : None
Peer Pw Bits      : None
Peer Fault Ip     : None
Peer Vccv CV Bits : None
Peer Vccv CC Bits : None

Application Profile: None
Max Nbr of MAC Addr: No Limit
Learned MAC Addr  : 0
OAM MAC Addr      : 0
Host MAC Addr     : 0
SPB MAC Addr      : 0
BGP EVPN Addr     : 0

MAC Learning      : Enabled
MAC Aging         : Enabled
BPDU Translation  : Disabled
L2PT Termination  : Disabled
MAC Pinning       : Disabled
Ignore Standby Sig : False
Oper Group        : (none)
Auto Learn Mac Prot: Disabled
RestMacProtSrc Act : none

Ingress Qos Policy : (none)
Ingress FP QGrp    : (none)
Ing FP QGrp Inst   : (none)

Egress Qos Policy  : (none)
Egress Port QGrp  : (none)
Egr Port QGrp Inst: (none)

KeepAlive Information :
Admin State         : Disabled
Hello Time         : 10
Max Drop Count     : 3

Oper State          : Disabled
Hello Msg Len      : 0
Hold Down Time     : 10

Statistics          :
I. Fwd. Pkts.      : 0
I. Fwd. Octs.      : 0
E. Fwd. Pkts.      : 0
I. Dro. Pkts.      : 0
I. Dro. Octs.      : 0
E. Fwd. Octets     : 0
-----
Control Channel Status
-----
PW Status          : disabled
Peer Status Expire : false
Request Timer      : <none>
Acknowledgement    : false

Refresh Timer      : <none>

MCAC Policy Name   :
MCAC Max Unconst BW: no limit
MCAC In use Mand BW: 0
MCAC In use Opnl BW: 0
MCAC If-Policy Name:
MCAC Max Mand BW  : no limit
MCAC Avail Mand BW: unlimited
MCAC Avail Opnl BW: unlimited
-----
ETH-CFM SDP-Bind specifics
-----
V-MEP Filtering    : Disabled
Squelch ch Levels  : None
Squelch ch Ctag Levels : None
Collect Lmm Stats  : Disabled
LMM FC Stats       : None
    
```

```

LMM FC In Prof          : None
-----
LDP Information :
-----
LDP LSP Id            : 65541
-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated
-----
Class-based forwarding :
-----
Class forwarding      : Disabled          EnforceDSTELspFc : Disabled
Default LSP          : Uknwn
Multicast LSP        : None
=====
FC Mapping Table
=====
FC Name              LSP Name
-----
No FC Mappings
-----
Segment Routing
-----
ISIS                 : disabled
OSPF                  : disabled
TE-LSP                : disabled
-----
Stp Service Destination Point specifics
-----
Stp Admin State      : Up                Stp Oper State      : Down
Core Connectivity    : Down
Port Role            : N/A                Port State          : Discarding
Port Number          : 0                Port Priority       : 128
Port Path Cost       : 10               Auto Edge           : Enabled
Admin Edge           : Disabled          Oper Edge           : N/A
Link Type            : Pt-pt             BPDU Encap         : Dot1d
Root Guard           : Disabled          Active Protocol     : N/A
Last BPDU from       : N/A                Designated Port Id : 0
Designated Bridge    : N/A
-----
Fwd Transitions      : 0                Bad BPDUs rcvd     : 0
Cfg BPDUs rcvd       : 0                Cfg BPDUs tx       : 0
TCN BPDUs rcvd       : 0                TCN BPDUs tx       : 0
TC bit BPDUs rcvd    : 0                TC bit BPDUs tx    : 0
RST BPDUs rcvd       : 0                RST BPDUs tx       : 0
-----
Number of SDPs : 1
-----
Service Access Points
-----
SAP 1/1/c1/1:1
-----
Service Id           : 1
SAP                  : 1/1/c1/1:1          Encap                : q-tag
Description          : (Not Specified)
Admin State          : Up                Oper State           : Up
Flags                : None
Multi Svc Site       : None
Last Status Change   : 05/07/2018 16:50:10
Last Mgmt Change     : 05/08/2018 09:40:32
Sub Type             : regular
Dot1Q Ethertype      : 0x8100          QinQ Ethertype       : 0x8100
  
```

Split Horizon Group: (Not Specified)

```

Etree Root Leaf Tag: Disabled          Etree Leaf Tag      : 0
Etree Leaf AC      : Disabled
Max Nbr of MAC Addr: No Limit          Total MAC Addr     : 0
Learned MAC Addr  : 0                  Static MAC Addr    : 0
OAM MAC Addr      : 0                  DHCP MAC Addr     : 0
Host MAC Addr     : 0                  Intf MAC Addr     : 0
SPB MAC Addr      : 0                  Cond MAC Addr     : 0
BGP EVPN Addr     : 0                  EVPN Static Addr  : 0
Admin MTU         : 9000                Oper MTU          : 9000
Ingr IP Fltr-Id  : n/a                 Egr IP Fltr-Id   : n/a
Ingr Mac Fltr-Id : n/a                 Egr Mac Fltr-Id  : n/a
Ingr IPv6 Fltr-Id : n/a                Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Egr Agg Rate Limit : max
Q Frame-Based Acct : Disabled          Limit Unused BW   : Disabled
ARP Reply Agent   : Disabled          Host Conn Verify  : Disabled
SHCV pol IPv4     : None
Mac Learning      : Enabled            Discard Unkwn Srce: Disabled
Mac Aging         : Enabled            Mac Pinning       : Disabled
BPDU Translation : Disabled
L2PT Termination : Disabled
Vlan-translation : None
Qinq-vlan-translation : None          Qinq-vlan-translation Ids : None
Acct. Pol         : None                Collect Stats     : Disabled
Anti Spoofing    : None                Dynamic Hosts     : Enabled
Avl Static Hosts : 0                   Tot Static Hosts  : 0
Calling-Station-Id : n/a
Oper Group       : (none)              Monitor Oper Grp  : (none)
Host Lockout Plcy : n/a
Lag Link Map Prof : (none)
Cflowd          : Disabled
Bandwidth       : Not-Applicable
Oper DCpu Prot Pol*: _default-access-policy
MCAC Policy Name :
MCAC Max Unconst BW: no limit          MCAC Const Adm St : Enable
MCAC In use Mand BW: 0                 MCAC Max Mand BW  : no limit
MCAC In use Opnl BW: 0                 MCAC Avail Mand BW: unlimited
Use LAG port weight: no                MCAC Avail Opnl BW: unlimited
MCAC If-Policy Name:
Restr MacUnpr Dst : Disabled
Auto Learn Mac Prot: Disabled
RestMacProtSrc Act : none
Time to RetryReset : never                Retries Left      : 3
Mac Move          : Blockable           Blockable Level   : Tertiary
Auth Policy       : None
DestMac Rewrite   : Disabled
SendBvplsEvpnFlush : Enabled
-----
ETH-CFM SAP specifics
-----
Tunnel Faults    : n/a                  AIS                : Disabled
MC Prop-Hold-Timer : n/a                V-MEP Filtering    : Disabled
Squelch ch Levels : None
Squelch ch Ctag Levels : None
Collect Lmm Stats : Disabled
LMM FC Stats     : None
LMM FC In Prof   : None
-----

```



```

Stp Service Access Point specifics
-----
Stp Admin State      : Up                Stp Oper State      : Down
Core Connectivity    : Down
Port Role            : N/A                Port State          : Forwarding
Port Number          : N/A                Port Priority       : 128
Port Path Cost       : 10                 Auto Edge           : Enabled
Admin Edge           : Disabled           Oper Edge           : N/A
Link Type            : Pt-pt              BPDU Encap         : Dot1d
Root Guard           : Disabled           Active Protocol     : N/A
Last BPDU from       : N/A
CIST Desig Bridge    : N/A                Designated Port     : N/A

Forward transitions: 0
Cfg BPDUs rcvd      : 0                 Bad BPDUs rcvd     : 0
TCN BPDUs rcvd      : 0                 Cfg BPDUs tx       : 0
TC bit BPDUs rcvd   : 0                 TCN BPDUs tx       : 0
RST BPDUs rcvd      : 0                 TC bit BPDUs tx    : 0
MST BPDUs rcvd      : 0                 RST BPDUs tx       : 0
MST BPDUs tx        : 0                 MST BPDUs tx       : 0
-----
ARP host
-----
Admin State          : outOfService
Host Limit           : 1                 Min Auth Interval  : 15 minutes
-----
QOS
-----
Ingress qos-policy  : 1                 Egress qos-policy  : 1
Ingress FP QGrp     : (none)             Egress Port QGrp   : (none)
Ing FP QGrp Inst    : (none)             Egr Port QGrp Inst: (none)
Shared Q plcy       : n/a                 Multipoint shared  : Disabled
I. Sched Pol        : (Not Specified)
E. Sched Pol        : (Not Specified)
I. Policer Ctl Pol  : (Not Specified)
E. Policer Ctl Pol  : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)
-----
DHCP
-----
Description          : (Not Specified)
Admin State          : Down                Lease Populate     : 0
DHCP Snooping        : Down                Action              : Keep

Proxy Admin State    : Down
Proxy Lease Time     : N/A
Emul. Server Addr    : Not Configured
-----
DHCP6
-----
Description          : (Not Specified)
Admin State          : Down
DHCP Snooping        : Down
Interface-Id         : AsciiTuple                Remote-Id           : Disabled
-----
Subscriber Management
-----
Admin State          : Down                MAC DA Hashing     : False
Def Sub-Id           : None
Def Sub-Profile      : None
Def SLA-Profile      : None
Def Inter-Dest-Id    : None
Sub-Ident-Policy     : None
    
```

```

Subscriber Limit      : 1
Single-Sub-Parameters
Prof Traffic Only    : False
Non-Sub-Traffic      : N/A

Static host management
MAC learn options    : N/A

-----
Sap Aggregate Stats
-----
                Packets                Octets
Ingress
Aggregate Offered    : 0                0
Aggregate Forwarded  : 0                0
Aggregate Dropped    : 0                0

Egress
Aggregate Forwarded  : 0                0
Aggregate Dropped    : 0                0
-----
Sap Statistics
-----
Last Cleared Time    : N/A

                Packets                Octets
CPM Ingress          : 0                0

Forwarding Engine Stats
Dropped              : 0                0
Received Valid       : 0                0
Off. HiPrio          : 0                0
Off. LowPrio         : 0                0
Off. Uncolor         : 0                0
Off. Managed         : 0                0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio          : 0                0
Dro. LowPrio         : 0                0
For. InProf          : 0                0
For. OutProf         : 0                0

Queueing Stats(Egress QoS Policy 1)
Dro. In/InplusProf  : 0                0
Dro. Out/ExcProf    : 0                0
For. In/InplusProf  : 0                0
For. Out/ExcProf    : 0                0
-----
Sap per Queue stats
-----
                Packets                Octets

Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio          : 0                0
Off. LowPrio         : 0                0
Dro. HiPrio          : 0                0
Dro. LowPrio         : 0                0
For. InProf          : 0                0
For. OutProf         : 0                0

Ingress Queue 11 (Multipoint) (Priority)
Off. Combined        : 0                0
Off. Managed         : 0                0
    
```

```

Dro. HiPrio      : 0          0
Dro. LowPrio    : 0          0
For. InProf     : 0          0
For. OutProf    : 0          0

Egress Queue 1
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
* indicates that the corresponding row element may have been truncated.
    
```

-----  
 VPLS Spanning Tree Information  
 -----

```

VPLS oper state : Up           Core Connectivity : Down
Stp Admin State : Down        Stp Oper State   : Down
Mode            : Rstp         Vcp Active Prot. : N/A
    
```

```

Bridge Id       : 80:00:d8:4a:ff:00:00:00 Bridge Instance Id: 0
Bridge Priority  : 32768                 Tx Hold Count     : 6
Topology Change : Inactive              Bridge Hello Time : 2
Last Top. Change : 0d 00:00:00          Bridge Max Age    : 20
Top. Change Count : 0                   Bridge Fwd Delay  : 15
MST region revision: 0                   Bridge max hops   : 20
MST region name :
    
```

```

Root Bridge     : N/A
Primary Bridge  : N/A
    
```

```

Root Path Cost   : 0           Root Forward Delay: 0
Rcvd Hello Time : 0           Root Max Age       : 0
Root Priority    : 0           Root Port          : N/A
    
```

-----  
 Forwarding Database specifics  
 -----

```

Service Id      : 1           Mac Move         : Disabled
Primary Factor  : 3           Secondary Factor : 2
Mac Move Rate   : 2           Mac Move Timeout : 10
Mac Move Retries : 3
Table Size      : 250         Allocated Count  : 0
Total In Use    : 0
Learned Count   : 0           Static Count     : 0
OAM MAC Count   : 0           DHCP MAC Count   : 0
Host MAC Count  : 0           Intf MAC Count   : 0
Spb Count       : 0           Cond MAC Count   : 0
BGP EVPN Count  : 0           EVPN Static Cnt  : 0
EVPN Dup Det Cnt : 0
Remote Age      : 900         Local Age        : 300
High Watermark  : 95%        Low Watermark    : 90%
Mac Learning    : Enabled     Discard Unknown  : Disabled
Mac Aging       : Enabled     Relearn Only    : False
Mac Subnet Len  : 48
Sel Learned FDB : Disabled
    
```

-----  
 IGMP Snooping Base info  
 -----

```

Admin State : Down
Querier     : No querier found
    
```

```

-----
Port          Oper MRtr Pim  Send Max  Max Max  MVR      Num
Id            Stat Port Port Qrys Grps  Srcs Grp  From-VPLS Grps
                                     Srcs
-----
    
```

```

sap:1/1/c1/1:1      Up   No   No   No   None  None None Local  0
sdp:65:1           Down No   No   No   None  None None N/A    0
-----
MLD Snooping Base info
-----
Admin State : Down
Querier      : No querier found
-----
Port          Oper   MRtr  Send      Max Num  MVR      Num
Id           State  Port  Queries   Groups   From-VPLS Groups
-----
sap:1/1/c1/1:1  Up     No    Disabled  No Limit  Local    0
sdp:65:1       Down   No    Disabled  No Limit  N/A      0
-----
DHCP Summary, service 1
-----
Sap/Sdp       Snoop  Used/  Arp Reply  Info  Admin
              Sdp    Provided  Agent      Option State
-----
sap:1/1/c1/1:1  No     0/0    No         Keep     Down
sdp:65:1       No     N/A    N/A        N/A     N/A
-----
Number of Entries : 2
-----
ARP host Summary, service 1
-----
Sap          Used      Provided  Admin State
-----
sap:1/1/c1/1:1  0         1         outOfService
-----
Number of SAPs : 1  0
-----
=====
Service VPLS Group Information
=====
No vxlan information for 1
-----
Service Endpoints
-----
No Endpoints found.
-----
=====
VPLS Sites
=====
Site          Site-Id  Dest      Mesh-SDP  Admin  Oper  Fwdr
-----
No Matching Entries
=====
* indicates that the corresponding row element may have been truncated.
    
```

Table 21: All Service-ID Field Descriptions describes the show all service-id command output fields:

Table 21: All Service-ID Field Descriptions

Label	Description
Service Id	The value that identifies a service
VPN Id	The number that identifies the VPN

Label	Description
Service Type	The type of service
SDP Id	The SDP identifier
Description	The text string describing general information about the service
Customer Id	The customer identifier
Last Mgmt Change	The date and time of the most recent management-initiated change to this customer
SAP Count	The number of SAPs specified for this service
SDP Bind Count	The number of SDPs bound to this service
Evpn Mcast GW	The status of the EVPN multicast gateway
Mcast-GW Type	The multicast gateway type: MEG, PEG, or MEG-PEG
Split Horizon Group	The name of the split horizon group for this service
Description	The text string describing the split horizon group
Last Changed	The date and time of the most recent management-initiated change to this split horizon group
SDP Id	The SDP identifier
Type	The service SDP binding type, spoke or mesh
Admin Path MTU	The desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented
Oper Path MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented
Delivery	The type of delivery used by the SDP: GRE or MPLS
Admin State	The administrative state of this SDP
Oper State	The operational status of the KeepAlive protocol.
Ingress Label	The label used by the far-end device to send packets to this device in this service by this SDP
Egress Label	The label used by this device to send packets to the far-end device in this service by this SDP
Ingress Filter	The ID of the ingress filter policy
Egress Filter	The ID of the egress filter policy

Label	Description
Far End	The IP address of the remote end of the GRE or MPLS tunnel defined by this SDP
Last Changed	The date and time of the most recent change to this customer
Signaling	The signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on this SDP.
Admin State	The operating status of the SDP
Oper State	The operational state of the SDP
Hello Time	The frequency that SDP echo request messages are transmitted on this SDP
Hello Msg Len	The length of the SDP echo request messages transmitted on this SDP
Max Drop Count	The maximum number of consecutive SDP echo request messages that can be unacknowledged before the keepalive protocol reports a fault
Hold Down Time	The amount of time to wait before the keepalive operating status is eligible to enter the alive state.
SDP Delivery Mechanism	When the SDP type is MPLS, a list of LSPs used to reach the far-end router displays. All the LSPs in the list must terminate at the IP address specified in the Far End field.  If the SDP type is GRE, then the following message displays: SDP Delivery Mechanism is not MPLS
Number of SDPs	The total number SDPs applied to this service ID
Service Access Points	
Service Id	The value that identifies a service
Port Id	The ID of the access port where this SAP is defined
Description	The generic information about the SAP
Encap Value	The value of the label used to identify this SAP on the access port.
Admin State	The desired state of the SAP
Oper State	The operating state of the SAP
Last Changed	The date and time of the last change

Label	Description
Admin MTU	The desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented
Oper MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented
Ingress qos-policy	The SAP ingress QoS policy ID
Egress qos-policy	The SAP egress QoS policy ID
Ingress Filter-Id	The SAP ingress filter policy ID
Egress Filter-Id	The SAP egress filter policy ID
Multi Svc Site	The multi-service site in which the SAP is a member
Ingress sched-policy	The ingress QoS scheduler for the SAP
Egress sched-policy	The egress QoS scheduler for the SAP
Acct. Pol	The accounting policy applied to the SAP
Collect Stats	Accounting statistics collected on the SAP
Dropped	The number of packets or octets dropped
Offered Hi Priority	The number of high priority packets, as determined by the SAP ingress QoS policy
Offered Low Priority	The number of low priority packets, as determined by the SAP ingress QoS policy
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded
Dropped In Profile	The number of in-profile packets or octets discarded
Dropped Out Profile	The number of out-of-profile packets or octets discarded
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded
Ingress Queue 1	The index of the ingress QoS queue of this SAP
High priority offered	The packets or octets count of the high priority traffic for the SAP

Label	Description
High priority dropped	The number of high priority traffic packets or octets dropped
Low priority offered	The packets or octets count of the low priority traffic
Low priority dropped	The number of low priority traffic packets or octets dropped
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded
Out profile forwarded	The number of out-of-profile octets (rate above CIR) forwarded
Egress Queue 1	The index of the egress QoS queue of the SAP
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded
In profile dropped	The number of in-profile packets or octets dropped for the SAP
Out profile forwarded	The number of out-of-profile packets or octets (rate above CIR) forwarded
Out profile dropped	The number of out-of-profile packets or octets discarded
State	The DHCP relay state on this SAP
Info Option	Option 82 processing state on this SAP
Action	Option 82 processing state SAP or interface: keep, replace or drop
Circuit ID	If index is inserted in Circuit ID sub-option of Option 82
Remote ID	The far-end MAC address inserted in remote ID sub-option of Option 82
Managed by Service	The service-id of the management VPLS managing this SAP
Managed by SAP	The SAP ID inside the management VPLS managing this SAP
Prune state	The STP state inherited from the management VPLS
Managed by Service	The service ID of the management VPLS managing this spoke SDP
Managed by Spoke	The SAP ID inside the management VPLS managing this spoke SDP
Prune state	The STP state inherited from the management VPLS



## all

### Syntax

all

### Context

[\[Tree\]](#) (show>service>id all)

### Full Context

show service id all

### Description

This command displays detailed information for all aspects of the service.

### Platforms

All

### Output

The following output is an example of all service ID information, and [Table 22: Show Service ID Output Fields](#) describes the output fields.

### Output Example

```
*A:PE# show service id 1 all

=====
Service Detailed Information
=====
Service Id       : 1                Vpn Id          : 0
Service Type    : Epipe
Name            : 1
Description     : (Not Specified)
Customer Id     : 1                Creation Origin  : manual
Last Status Change: 08/31/2018 11:12:04
Last Mgmt Change  : 08/31/2018 11:09:25
Test Service    : No
Admin State     : Up              Oper State      : Up
MTU             : 1514
Vc Switching   : False
SAP Count      : 2                SDP Bind Count  : 0
Per Svc Hashing : Disabled
Vxlan Src Tep Ip : N/A
Force QTag Fwd  : Disabled
Oper Group     : <none>

-----
BGP Information
-----

-----
ETH-CFM service specifics
-----
Tunnel Faults   : ignore
```

```

-----
Service Destination Points(SDPs)
-----
No Matching Entries
-----
Service Access Points
-----

SAP 1/1/1
-----
Service Id       : 1
SAP              : 1/1/1                Encap           : null
Description     : (Not Specified)
Admin State     : Up                   Oper State      : Up
Flags          : None
Multi Svc Site  : None
Last Status Change : 08/31/2018 11:12:04
Last Mgmt Change  : 08/31/2018 11:09:24
Sub Type        : regular
Dot1Q Ethertype : 0x8100                QinQ Ethertype  : 0x8100
Split Horizon Group: (Not Specified)

LLF Admin State : Down                   LLF Oper State  : Clear
Admin MTU       : 1514                 Oper MTU        : 1514
Ingr IP Fltr-Id : n/a                       Egr IP Fltr-Id : n/a
Ingr Mac Fltr-Id : n/a                    Egr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a                  Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Endpoint        : N/A
Egr Agg Rate Limit : max
Q Frame-Based Acct : Disabled                Limit Unused BW : Disabled
Vlan-translation : None
Qinq-vlan-translation : None                Qinq-vlan-translation Ids : None

Acct. Pol       : None                   Collect Stats    : Disabled

Application Profile: None
Transit Policy   : None

Oper Group       : (none)                 Monitor Oper Grp : (none)
Host Lockout Plcy : n/a
Ignore Oper Down : Disabled
Lag Link Map Prof : (none)
Cflowd          : Disabled
Bandwidth        : Not-Applicable
Oper DCpu Prot Pol*: _default-access-policy

-----
ETH-CFM SAP specifics
-----
Tunnel Faults   : n/a                   AIS              : Disabled
MC Prop-Hold-Timer : n/a
Squelch Levels  : None
Collect Lmm Stats : Disabled
LMM FC Stats    : None
LMM FC In Prof  : None

-----
QOS
-----
    
```

```
Ingress qos-policy : 1
Ingress FP QGrp : (none)
Ing FP QGrp Inst : (none)
Shared Q plcy : n/a
I. Sched Pol : (Not Specified)
E. Sched Pol : (Not Specified)
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
E. HS Sec. Shaper : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)
Egress qos-policy : 1
Egress Port QGrp : (none)
Egr Port QGrp Inst: (none)
Multipoint shared : Disabled
```

-----  
 Sap Aggregate Stats  
 -----

	Packets	Octets
Ingress		
Aggregate Offered	: 0	0
Aggregate Forwarded	: 0	0
Aggregate Dropped	: 0	0
Egress		
Aggregate Forwarded	: 0	0
Aggregate Dropped	: 0	0

-----  
 Sap Statistics  
 -----

Last Cleared Time : 08/31/2018 11:19:51

	Packets	Octets
CPM Ingress	: 0	0

Forwarding Engine Stats

Dropped	: 0	0
Received Valid	: 0	0
Off. HiPrio	: 0	0
Off. LowPrio	: 0	0
Off. Uncolor	: 0	0
Off. Managed	: 0	0

Queueing Stats(Ingress QoS Policy 1)

Dro. HiPrio	: 0	0
Dro. LowPrio	: 0	0
For. InProf	: 0	0
For. OutProf	: 0	0

Queueing Stats(Egress QoS Policy 1)

Dro. In/InplusProf	: 0	0
Dro. Out/ExcProf	: 0	0
For. In/InplusProf	: 0	0
For. Out/ExcProf	: 0	0

-----  
 Sap per Queue stats  
 -----

	Packets	Octets
Ingress Queue 1 (Unicast) (Priority)		
Off. HiPrio	: 0	0
Off. LowPrio	: 0	0
Dro. HiPrio	: 0	0
Dro. LowPrio	: 0	0
For. InProf	: 0	0
For. OutProf	: 0	0

Egress Queue 1

```

For. In/InplusProf   : 0           0
For. Out/ExcProf     : 0           0
Dro. In/InplusProf   : 0           0
Dro. Out/ExcProf     : 0           0
* indicates that the corresponding row element may have been truncated.

-----
SAP 1/1/9:1
-----
Service Id           : 1
SAP                  : 1/1/9:1           Encap           : q-tag
Description          : (Not Specified)
Admin State          : Up               Oper State       : Up
Flags                : None
Multi Svc Site       : None
Last Status Change   : 08/31/2018 11:09:25
Last Mgmt Change     : 08/31/2018 11:23:45
Sub Type             : regular
Dot1Q Ethertype      : 0x8100           QinQ Ethertype   : 0x8100
Split Horizon Group  : (Not Specified)

Admin MTU            : 1518             Oper MTU         : 1518
Ingr IP Fltr-Id     : n/a             Egr IP Fltr-Id  : n/a
Ingr Mac Fltr-Id    : n/a             Egr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id   : n/a             Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking    : both
Endpoint             : N/A
Egr Agg Rate Limit   : max
Q Frame-Based Acct   : Disabled         Limit Unused BW  : Disabled
Vlan-translation     : None
Qinq-vlan-translation : None           Qinq-vlan-translation Ids : None

Acct. Pol            : None             Collect Stats     : Disabled

Application Profile  : None
Transit Policy       : None

Oper Group           : (none)           Monitor Oper Grp : (none)
Host Lockout Plcy   : n/a
Ignore Oper Down     : Disabled
Lag Link Map Prof    : (none)
Cflowd               : Disabled
Bandwidth             : Not-Applicable
Oper DCpu Prot Pol* : _default-access-policy

-----
ETH-CFM SAP specifics
-----
Tunnel Faults        : n/a             AIS               : Disabled
MC Prop-Hold-Timer   : n/a
Squelch Levels       : None
Collect Lmm Stats    : Disabled
LMM FC Stats         : None
LMM FC In Prof       : None

-----
QOS
-----
Ingress qos-policy   : 1               Egress qos-policy : 1
Ingress FP QGrp      : (none)           Egress Port QGrp  : (none)
Ing FP QGrp Inst     : (none)           Egr Port QGrp Inst : (none)
Shared Q plcy        : n/a             Multipoint shared  : Disabled
I. Sched Pol         : (Not Specified)
    
```

```

E. Sched Pol      : (Not Specified)
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
E. HS Sec. Shaper  : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)
-----
Sap Aggregate Stats
-----
                Packets                Octets
Ingress
Aggregate Offered : 0                0
Aggregate Forwarded : 0                0
Aggregate Dropped : 0                0
Egress
Aggregate Forwarded : 0                0
Aggregate Dropped : 0                0
-----
Sap Statistics
-----
Last Cleared Time : 08/31/2018 11:19:51

                Packets                Octets
CPM Ingress      : 0                0

Forwarding Engine Stats
Dropped          : 0                0
Received Valid   : 0                0
Off. HiPrio      : 0                0
Off. LowPrio     : 0                0
Off. Uncolor     : 0                0
Off. Managed     : 0                0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio      : 0                0
Dro. LowPrio     : 0                0
For. InProf      : 0                0
For. OutProf     : 0                0

Queueing Stats(Egress QoS Policy 1)
Dro. In/InplusProf : 0                0
Dro. Out/ExcProf   : 0                0
For. In/InplusProf : 0                0
For. Out/ExcProf   : 0                0
-----
Sap per Queue stats
-----
                Packets                Octets

Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio      : 0                0
Off. LowPrio     : 0                0
Dro. HiPrio      : 0                0
Dro. LowPrio     : 0                0
For. InProf      : 0                0
For. OutProf     : 0                0

Egress Queue 1
For. In/InplusProf : 0                0
For. Out/ExcProf   : 0                0
Dro. In/InplusProf : 0                0
Dro. Out/ExcProf   : 0                0
* indicates that the corresponding row element may have been truncated.
    
```

```

-----
Service Endpoints
-----
No Endpoints found.
-----

=====
VLL Sites
=====
Site           Site-Id  Dest           Admin         Oper  Fwdr
-----
No Matching Entries
=====
*A:PE#
    
```

**Table 22: Show Service ID Output Fields** describes the Show service ID output fields when the **all** option is specified.

*Table 22: Show Service ID Output Fields*

Label	Description
Service Id	The service identifier
VPN Id	The number which identifies the VPN
Service Type	The type of service
VLL Type	The VLL type
SDP Id	The SDP identifier for the 7450 ESS or 7750 SR
Description	Generic information about the service
Customer Id	The customer identifier
Last Mgmt Change	The date and time of the most recent management-initiated change
Endpoint	The name of the service endpoint for the 7450 ESS or 7750 SR
Flags	The conditions that affect the operating status of this SAP. Display output includes: ServiceAdminDown, SapAdmin Down, InterfaceAdminDown, PortOperDown, PortMTUToo Small, L2OperDown, SapIngressQoSMismatch, SapEgress QoSMismatch, RelearnLimitExceeded, RxProtSrcMac, Parent IfAdminDown, NoSapIpipeCelpAddr, SapParamMismatch, Cem SapNoEcidOrMacAddr, StandByForMcRing, ServiceMTUToo Small, NoSapEpipeRingNode.
SAP Count	The number of SAPs specified for this service
SDP Bind Count	The number of SDPs bound to this service for the 7450 ESS or 7750 SR

Label	Description
<b>Split Horizon Group Specifics</b>	
Split Horizon Group	The name of the split horizon group for this VPLS for the 7450 ESS or 7750 SR
Description	The description of the split horizon group for the 7450 ESS or 7750 SR
Last Changed	The date and time of the most recent management-initiated change to this split horizon group for the 7450 ESS or 7750 SR
<b>Service Destination Points (SDPs)</b>	
SDP Id	The SDP identifier for the 7450 ESS or 7750 SR
Type	Indicates whether this service SDP binding is a spoke or a mesh for the 7450 ESS or 7750 SR
Admin Path MTU	The desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented for the 7450 ESS or 7750 SR.
Oper Path MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented for the 7450 ESS or 7750 SR
Delivery	The type of delivery used by the SDP: GRE or MPLS for the 7450 ESS or 7750 SR
Admin State	The administrative state of this SD for the 7450 ESS or 7750 SR
Oper State	The operational state of this SDP for the 7450 ESS or 7750 SR
Jitter Buffer (packets)	The jitter buffer length in number of packet buffers for the 7450 ESS or 7750 SR
Playout Threshold (packets)	The playout buffer packets threshold in number of packet buffers for the 7450 ESS or 7750 SR
Playout Threshold (packets)	Indicates the current packet depth of the jitter buffer for the 7450 ESS or 7750 SR
Peer Pw Bits	The bits set by the LDP peer when there is a fault on its side of the pseudowire for the 7450 ESS or 7750 SR. LAC failures occur on the SAP that has been configured on the pipe service, PSN bits are set by SDP-binding failures on the pipe service. The pw NotForwarding bit is set when none of the above failures apply, such as an MTU mismatch failure. This value is only applicable if the peer is using the pseudowire status signaling method to indicate faults.

Label	Description
	pwNotForwarding — Pseudowire not forwarding lacIngressFault Local — Attachment circuit RX fault lacEgressFault Local — Attachment circuit TX fault psnIngressFault Local — PSN-facing PW RX fault psnEgressFault Local — PSN-facing PW TX fault pwFwdingStandby — Pseudowire in standby mode
Signaling Override	The overriding signaled pseudowire type, as configured under the <b>signaled-vc-type-override</b> option for Apipes. This field is only displayed if <b>signaled-vc-type-override</b> is configured for the 7750 SR.

all

### Syntax

all

### Context

[\[Tree\]](#) (show>service>id all)

### Full Context

show service id all

### Description

This command displays detailed information for all aspects of the service.

### Platforms

All

### Output

The following output is an example of a service displaying all information.

### Output Example

```
*A:PE# show service id 1 all
=====
Service Detailed Information
=====
Service Id       : 1                Vpn Id          : 0
Service Type    : VPLS
Name            : 1
Description     : (Not Specified)
Customer Id     : 1                Creation Origin  : manual
Last Status Change: 08/31/2018 11:46:13
```



```

Last Mgmt Change : 08/31/2018 11:46:13
Etree Mode      : Disabled
Admin State     : Up                Oper State      : Up
MTU             : 1514
SAP Count       : 2                SDP Bind Count  : 0
Snd Flush on Fail : Disabled       Host Conn Verify : Disabled
SHCV pol IPv4   : None
Propagate MacFlush: Disabled       Per Svc Hashing  : Disabled
Allow IP Intf Bind: Disabled
Fwd-IPv4-Mcast-To*: Disabled       Fwd-IPv6-Mcast-To*: Disabled
Mcast IPv6 scope : mac-based
Def. Gateway IP : None
Def. Gateway MAC : None
Temp Flood Time : Disabled         Temp Flood      : Inactive
Temp Flood Chg Cnt: 0
SPI load-balance : Disabled
TEID load-balance : Disabled
Src Tep IP       : N/A
Vxlan ECMP      : Disabled
    
```

-----  
 BGP Information  
 -----

PW-Template Id : None  
 -----

-----  
 Split Horizon Group specifics  
 -----

-----  
 ETH-CFM service specifics  
 -----

Tunnel Faults : ignore  
 -----

-----  
 Service Destination Points(SDPs)  
 -----

No Matching Entries  
 -----

-----  
 Service Access Points  
 -----

-----  
 SAP 1/1/1  
 -----

```

Service Id      : 1
SAP             : 1/1/1             Encap           : null
Description     : (Not Specified)
Admin State     : Up                Oper State      : Up
Flags           : None
Multi Svc Site  : None
Last Status Change : 08/31/2018 11:46:13
Last Mgmt Change : 08/31/2018 11:46:13
Sub Type        : regular
Dot1Q Ethertype : 0x8100             QinQ Ethertype  : 0x8100
Split Horizon Group: (Not Specified)

Etree Root Leaf Tag: Disabled       Etree Leaf Tag  : 0
Etree Leaf AC      : Disabled
Max Nbr of MAC Addr: No Limit       Total MAC Addr  : 0
Learned MAC Addr   : 0              Static MAC Addr  : 0
OAM MAC Addr       : 0              DHCP MAC Addr   : 0
Host MAC Addr      : 0              Intf MAC Addr   : 0
    
```

```

SPB MAC Addr      : 0
BGP EVPN Addr    : 0
Admin MTU        : 1514
Ingr IP Fltr-Id  : n/a
Ingr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Egr Agg Rate Limit : max
Q Frame-Based Acct : Disabled
ARP Reply Agent   : Disabled
SHCV pol IPv4     : None
Mac Learning      : Enabled
Mac Aging         : Enabled
BPDU Translation  : Disabled
L2PT Termination  : Disabled
Vlan-translation  : None
Qinq-vlan-translation : None
Acct. Pol        : None
Anti Spoofing    : None
Avl Static Hosts : 0
Calling-Station-Id : n/a
Application Profile: None
Transit Policy   : None
Oper Group       : (none)
Host Lockout Plcy : n/a
Lag Link Map Prof : (none)
Cflowd          : Disabled
Bandwidth        : Not-Applicable
Oper DCpu Prot Pol*: _default-access-policy
MCAC Policy Name :
MCAC Max Unconst BW: no limit
MCAC In use Mand BW: 0
MCAC In use Opnl BW: 0
Use LAG port weight: no
MCAC If-Policy Name:
Restr MacUnpr Dst : Disabled
Auto Learn Mac Prot: Disabled
RestMacProtSrc Act : none
Time to RetryReset : never
Mac Move          : Blockable
Auth Policy       : None
DestMac Rewrite   : Disabled
SendBvplsEvpnFlush : Enabled
Cond MAC Addr    : 0
EVPN Static Addr : 0
Oper MTU         : 1514
Egr IP Fltr-Id   : n/a
Egr Mac Fltr-Id  : n/a
Egr IPv6 Fltr-Id : n/a
Limit Unused BW  : Disabled
Host Conn Verify : Disabled
Discard Unkwn Srce: Disabled
Mac Pinning      : Disabled
Qinq-vlan-translation Ids : None
Collect Stats    : Disabled
Dynamic Hosts    : Enabled
Tot Static Hosts : 0
Monitor Oper Grp : (none)
MCAC Const Adm St : Enable
MCAC Max Mand BW  : no limit
MCAC Avail Mand BW: unlimited
MCAC Avail Opnl BW: unlimited
Retries Left     : 3
Blockable Level  : Tertiary
-----
ETH-CFM SAP specifics
-----
Tunnel Faults    : n/a
MC Prop-Hold-Timer : n/a
Squelch Levels   : None
Collect Lmm Stats : Disabled
LMM FC Stats     : None
LMM FC In Prof   : None
AIS              : Disabled
V-MEP Filtering  : Disabled
-----
Stp Service Access Point specifics
-----
Stp Admin State  : Up
Core Connectivity : Down
Stp Oper State   : Down
  
```

```

Port Role      : N/A
Port Number    : N/A
Port Path Cost : 10
Admin Edge     : Disabled
Link Type      : Pt-pt
Root Guard     : Disabled
Last BPDU from : N/A
CIST Desig Bridge : N/A

Port State     : Forwarding
Port Priority   : 128
Auto Edge      : Enabled
Oper Edge      : N/A
BPDU Encap     : Dot1d
Active Protocol : N/A
Designated Port : N/A

Forward transitions: 0
Bad BPDUs rcvd   : 0
Cfg BPDUs rcvd   : 0
TCN BPDUs rcvd   : 0
TC bit BPDUs rcvd : 0
RST BPDUs rcvd   : 0
MST BPDUs rcvd   : 0
Bad BPDUs tx     : 0
Cfg BPDUs tx     : 0
TCN BPDUs tx     : 0
TC bit BPDUs tx  : 0
RST BPDUs tx     : 0
MST BPDUs tx     : 0
-----
ARP host
-----
Admin State      : outOfService
Host Limit       : 1
Min Auth Interval : 15 minutes
-----
QOS
-----
Ingress qos-policy : 1
Ingress FP QGrp    : (none)
Ing FP QGrp Inst   : (none)
Shared Q plcy      : n/a
I. Sched Pol       : (Not Specified)
E. Sched Pol       : (Not Specified)
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
E. HS Sec. Shaper  : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)
Egress qos-policy : 1
Egress Port QGrp  : (none)
Egr Port QGrp Inst: (none)
Multipoint shared : Disabled
-----
DHCP
-----
Description      : (Not Specified)
Admin State      : Down
DHCP Snooping    : Down
Proxy Admin State : Down
Proxy Lease Time : N/A
Emul. Server Addr : Not Configured
Lease Populate   : 0
Action           : Keep
-----
DHCP6
-----
Description      : (Not Specified)
Admin State      : Down
DHCP Snooping    : Down
Interface-Id     : AsciiTuple
Remote-Id        : Disabled
-----
Subscriber Management
-----
Admin State      : Down
Def Sub-Id       : None
Def Sub-Profile  : None
Def SLA-Profile  : None
Def Inter-Dest-Id : None
Def App-Profile  : None
Sub-Ident-Policy : None
MAC DA Hashing   : False
  
```

```

Subscriber Limit      : 1
Single-Sub-Parameters
  Prof Traffic Only  : False
  Non-Sub-Traffic    : N/A
Static host management
MAC learn options    : N/A
-----
Sap Aggregate Stats
-----
                Packets                Octets
Ingress
Aggregate Offered   : 0                0
Aggregate Forwarded : 0                0
Aggregate Dropped   : 0                0
Egress
Aggregate Forwarded : 0                0
Aggregate Dropped   : 0                0
-----
Sap Statistics
-----
Last Cleared Time   : N/A

                Packets                Octets
CPM Ingress         : 0                0

Forwarding Engine Stats
Dropped             : 0                0
Received Valid      : 0                0
Off. HiPrio         : 0                0
Off. LowPrio        : 0                0
Off. Uncolor        : 0                0
Off. Managed        : 0                0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio         : 0                0
Dro. LowPrio        : 0                0
For. InProf         : 0                0
For. OutProf        : 0                0

Queueing Stats(Egress QoS Policy 1)
Dro. In/InplusProf : 0                0
Dro. Out/ExcProf    : 0                0
For. In/InplusProf : 0                0
For. Out/ExcProf    : 0                0
-----
Sap per Queue stats
-----
                Packets                Octets
Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio         : 0                0
Off. LowPrio        : 0                0
Dro. HiPrio         : 0                0
Dro. LowPrio        : 0                0
For. InProf         : 0                0
For. OutProf        : 0                0

Ingress Queue 11 (Multipoint) (Priority)
Off. HiPrio         : 0                0
Off. LowPrio        : 0                0
Off. Managed        : 0                0
Dro. HiPrio         : 0                0
    
```

```

Dro. LowPrio      : 0          0
For. InProf      : 0          0
For. OutProf     : 0          0

Egress Queue 1
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
* indicates that the corresponding row element may have been truncated.

-----
SAP 1/1/9:1
-----
Service Id       : 1
SAP              : 1/1/9:1          Encap           : q-tag
Description      : (Not Specified)
Admin State     : Up              Oper State      : Up
Flags           : None
Multi Svc Site  : None
Last Status Change : 08/31/2018 11:46:13
Last Mgmt Change  : 08/31/2018 11:46:13
Sub Type        : regular
Dot1Q Ethertype : 0x8100          QinQ Ethertype  : 0x8100
Split Horizon Group: (Not Specified)

Etree Root Leaf Tag: Disabled          Etree Leaf Tag   : 0
Etree Leaf AC      : Disabled
Max Nbr of MAC Addr: No Limit          Total MAC Addr   : 0
Learned MAC Addr   : 0                Static MAC Addr   : 0
OAM MAC Addr       : 0                DHCP MAC Addr    : 0
Host MAC Addr      : 0                Intf MAC Addr    : 0
SPB MAC Addr       : 0                Cond MAC Addr    : 0
BGP EVPN Addr      : 0                EVPN Static Addr : 0
Admin MTU          : 1518             Oper MTU         : 1518
Ingr IP Fltr-Id   : n/a              Egr IP Fltr-Id  : n/a
Ingr Mac Fltr-Id  : n/a              Egr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a              Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Egr Agg Rate Limit : max
Q Frame-Based Acct : Disabled          Limit Unused BW  : Disabled
ARP Reply Agent    : Disabled          Host Conn Verify : Disabled
SHCV pol IPv4     : None
Mac Learning       : Enabled          Discard Unkwn Srce: Disabled
Mac Aging          : Enabled          Mac Pinning      : Disabled
BPDU Translation  : Disabled
L2PT Termination  : Disabled
Vlan-translation  : None
Qinq-vlan-translation : None          Qinq-vlan-translation Ids : None

Acct. Pol         : None              Collect Stats    : Disabled

Anti Spoofing     : None              Dynamic Hosts    : Enabled
Avl Static Hosts  : 0                Tot Static Hosts : 0
Calling-Station-Id : n/a

Application Profile: None
Transit Policy    : None

Oper Group        : (none)            Monitor Oper Grp : (none)
Host Lockout Plcy : n/a
Lag Link Map Prof : (none)
Cflowd           : Disabled
  
```

```

Bandwidth      : Not-Applicable
Oper DCpu Prot Pol*: _default-access-policy
MCAC Policy Name :
MCAC Max Unconst BW: no limit
MCAC In use Mand BW: 0
MCAC In use Opnl BW: 0
Use LAG port weight: no
MCAC If-Policy Name:
Restr MacUnpr Dst : Disabled
Auto Learn Mac Prot: Disabled
RestMacProtSrc Act : none
Time to RetryReset : never
Mac Move : Blockable
Auth Policy : None
DestMac Rewrite : Disabled
SendBvplsEvpnFlush : Enabled
MCAC Const Adm St : Enable
MCAC Max Mand BW : no limit
MCAC Avail Mand BW: unlimited
MCAC Avail Opnl BW: unlimited
Retries Left : 3
Blockable Level : Tertiary
    
```

-----  
 ETH-CFM SAP specifics  
 -----

```

Tunnel Faults : n/a
MC Prop-Hold-Timer : n/a
Squelch Levels : None
Collect Lmm Stats : Disabled
LMM FC Stats : None
LMM FC In Prof : None
AIS : Disabled
V-MEP Filtering : Disabled
    
```

-----  
 Stp Service Access Point specifics  
 -----

```

Stp Admin State : Up
Core Connectivity : Down
Port Role : N/A
Port Number : N/A
Port Path Cost : 10
Admin Edge : Disabled
Link Type : Pt-pt
Root Guard : Disabled
Last BPDU from : N/A
CIST Desig Bridge : N/A
Stp Oper State : Down
Port State : Forwarding
Port Priority : 128
Auto Edge : Enabled
Oper Edge : N/A
BPDU Encap : Dot1d
Active Protocol : N/A
Designated Port : N/A
Forward transitions: 0
Cfg BPDUs rcvd : 0
TCN BPDUs rcvd : 0
TC bit BPDUs rcvd : 0
RST BPDUs rcvd : 0
MST BPDUs rcvd : 0
Bad BPDUs rcvd : 0
Cfg BPDUs tx : 0
TCN BPDUs tx : 0
TC bit BPDUs tx : 0
RST BPDUs tx : 0
MST BPDUs tx : 0
    
```

-----  
 ARP host  
 -----

```

Admin State : outOfService
Host Limit : 1
Min Auth Interval : 15 minutes
    
```

-----  
 QOS  
 -----

```

Ingress qos-policy : 1
Ingress FP QGrp : (none)
Ing FP QGrp Inst : (none)
Shared Q plcy : n/a
I. Sched Pol : (Not Specified)
E. Sched Pol : (Not Specified)
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
Egress qos-policy : 1
Egress Port QGrp : (none)
Egr Port QGrp Inst: (none)
Multipoint shared : Disabled
    
```

```

E. HS Sec. Shaper : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)
-----
DHCP
-----
Description      : (Not Specified)
Admin State      : Down
DHCP Snooping    : Down
Proxy Admin State : Down
Proxy Lease Time : N/A
Emul. Server Addr : Not Configured
Lease Populate   : 0
Action          : Keep
-----
DHCP6
-----
Description      : (Not Specified)
Admin State      : Down
DHCP Snooping    : Down
Interface-Id     : AsciiTuple
Remote-Id        : Disabled
-----
Subscriber Management
-----
Admin State      : Down
Def Sub-Id       : None
Def Sub-Profile  : None
Def SLA-Profile  : None
Def Inter-Dest-Id : None
Def App-Profile  : None
Sub-Ident-Policy : None
Subscriber Limit : 1
Single-Sub-Parameters
  Prof Traffic Only : False
  Non-Sub-Traffic   : N/A
Static host management
MAC learn options : N/A
MAC DA Hashing   : False
-----
Sap Aggregate Stats
-----
                Packets          Octets
Ingress
Aggregate Offered : 0
Aggregate Forwarded : 0
Aggregate Dropped : 0
Egress
Aggregate Forwarded : 0
Aggregate Dropped : 0
-----
Sap Statistics
-----
Last Cleared Time : N/A
                Packets          Octets
CPM Ingress       : 0
-----
Forwarding Engine Stats
Dropped           : 0
Received Valid    : 0
Off. HiPrio       : 0
Off. LowPrio      : 0
    
```

```

Off. Uncolor      : 0          0
Off. Managed     : 0          0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio      : 0          0
Dro. LowPrio     : 0          0
For. InProf      : 0          0
For. OutProf     : 0          0

Queueing Stats(Egress QoS Policy 1)
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
-----
Sap per Queue stats
-----
                Packets          Octets

Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio      : 0          0
Off. LowPrio     : 0          0
Dro. HiPrio      : 0          0
Dro. LowPrio     : 0          0
For. InProf      : 0          0
For. OutProf     : 0          0

Ingress Queue 11 (Multipoint) (Priority)
Off. HiPrio      : 0          0
Off. LowPrio     : 0          0
Off. Managed     : 0          0
Dro. HiPrio      : 0          0
Dro. LowPrio     : 0          0
For. InProf      : 0          0
For. OutProf     : 0          0

Egress Queue 1
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
* indicates that the corresponding row element may have been truncated.
-----
VPLS Spanning Tree Information
-----
VPLS oper state   : Up           Core Connectivity : Down
Stp Admin State   : Down        Stp Oper State    : Down
Mode              : Rstp        Vcp Active Prot.  : N/A

Bridge Id         : 80:00:d8:2c:ff:00:00:00  Bridge Instance Id: 0
Bridge Priority    : 32768              Tx Hold Count     : 6
Topology Change   : Inactive            Bridge Hello Time : 2
Last Top. Change  : 0d 00:00:00         Bridge Max Age    : 20
Top. Change Count : 0                   Bridge Fwd Delay  : 15
MST region revision: 0                   Bridge max hops   : 20
MST region name   :

Root Bridge       : N/A
Primary Bridge    : N/A

Root Path Cost    : 0                   Root Forward Delay: 0
Rcvd Hello Time   : 0                   Root Max Age      : 0
Root Priority      : 0                   Root Port         : N/A
    
```



```

-----
Forwarding Database specifics
-----
Service Id      : 1                Mac Move       : Disabled
Primary Factor  : 3                Secondary Factor : 2
Mac Move Rate   : 2                Mac Move Timeout : 10
Mac Move Retries : 3
Table Size      : 250              Allocated Count : 0
Total In Use    : 0
Learned Count   : 0                Static Count     : 0
OAM MAC Count   : 0                DHCP MAC Count   : 0
Host MAC Count  : 0                Intf MAC Count   : 0
Spb Count       : 0                Cond MAC Count   : 0
BGP EVPN Count  : 0                EVPN Static Cnt  : 0
EVPN Dup Det Cnt : 0
Remote Age      : 900              Local Age        : 300
High Watermark  : 95%             Low Watermark    : 90%
Mac Learning    : Enabled          Discard Unknown  : Disabled
Mac Aging       : Enabled          Relearn Only     : False
Mac Subnet Len  : 48
Sel Learned FDB : Disabled
-----

IGMP Snooping Base info
-----
Admin State : Down
Querier      : No querier found
-----

Port          Oper MRtr Pim  Send Max  Max Max  MVR      Num
Id            Stat Port Port Qrys Grps  Srcs Grp   From-VPLS Grps
              Srgs
-----
sap:1/1/1     Up   No   No   No   None  None  None  Local   0
sap:1/1/9:1   Up   No   No   No   None  None  None  Local   0
-----

MLD Snooping Base info
-----
Admin State : Down
Querier      : No querier found
-----

Port          Oper  MRtr  Send  Max Num  MVR      Num
Id            State Port  Queries  Groups  From-VPLS Groups
-----
sap:1/1/1     Up    No    Disabled  No Limit  Local    0
sap:1/1/9:1   Up    No    Disabled  No Limit  Local    0
-----

DHCP Summary, service 1
-----
Sap/Sdp      Snoop  Used/  Arp Reply  Info  Admin
              Provided Agent  Option  State
-----
sap:1/1/1    No     0/0    No         Keep  Down
sap:1/1/9:1 No     0/0    No         Keep  Down
-----

Number of Entries : 2
-----

ARP host Summary, service 1
-----
Sap          Used      Provided  Admin State
-----

```

```

-----
sap:1/1/1          0          1          outOfService
sap:1/1/9:1       0          1          outOfService
-----
Number of SAPs : 2    0
-----

=====
-----
WLAN Gateway specifics
-----
Admin State       : disabled
Description       : (Not Specified)
SAP-template      : (Not Specified)
Last management change : (Not Specified)
No associated WLAN Gateway interface VLAN tag ranges found.
=====

=====
Service VPLS Group Information
=====

=====
Egress VTEP, VNI
=====
Instance  VTEP Address      Egress VNI  Evpn/  Static
Mcast     Oper State         L2 PBR      Static  Num.
                                                MACs
-----
No Matching Entries
=====

-----
Service Endpoints
-----
No Endpoints found.
-----

=====
VPLS Sites
=====
Site          Site-Id  Dest          Mesh-SDP  Admin  Oper  Fwdr
-----
No Matching Entries
=====

* indicates that the corresponding row element may have been truncated.
*A:PE#
    
```

Table 23: Show Service ID All Output Fields describes the command output fields.

Table 23: Show Service ID All Output Fields

Label	Description
Service Id	The service identifier.
VPN Id	The number which identifies the VPN.

Label	Description
Service Type	Specifies the type of service.
SDP Id	The SDP identifier.
Description	Generic information about the service.
Customer Id	The customer identifier.
Last Mgmt Change	The date and time of the most recent management-initiated change to this customer.
SAP Count	The number of SAPs specified for this service.
SDP Bind Count	The number of SDPs bound to this service.
Split Horizon Group	Name of the split horizon group for this service.
Description	Description of the split horizon group.
Last Changed	The date and time of the most recent management-initiated change to this split horizon group.
SDP Id	The SDP identifier.
Type	Indicates whether this service SDP binding is a spoke or a mesh.
Admin Path MTU	The desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Oper Path MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Delivery	Specifies the type of delivery used by the SDP: GRE or MPLS.
Admin State	The administrative state of this SDP.
Oper State	The operational state of this SDP.
Ingress Label	The label used by the far-end device to send packets to this device in this service by this SDP.
Egress Label	The label used by this device to send packets to the far-end device in this service by this SDP.
Ingress Filter	The ID of the ingress filter policy.
Egress Filter	The ID of the egress filter policy.
Far End	Specifies the IP address of the remote end of the GRE or MPLS tunnel defined by this SDP.

Label	Description
Last Changed	The date and time of the most recent change to this customer.
Hello Time	Specifies how often the SDP echo request messages are transmitted on this SDP.
Hello Msg Len	Specifies the length of the SDP echo request messages transmitted on this SDP.
Max Drop Count	Specifies the maximum number of consecutive SDP Echo Request messages that can be unacknowledged before the keepalive protocol reports a fault.
Hold Down Time	Specifies the amount of time to wait before the keepalive operating status is eligible to enter the alive state.
SDP Delivery Mechanism	When the SDP type is MPLS, a list of LSPs used to reach the far-end router displays. All the LSPs in the list must terminate at the IP address specified in the Far End field.  If the SDP type is GRE, then the following message displays: SDP Delivery Mechanism is not MPLS
Number of SDPs	The total number SDPs applied to this service ID.
Service Id	The service identifier.
Port Id	The ID of the access port where this SAP is defined.
Description	Generic information about the SAP.
Encap Value	The value of the label used to identify this SAP on the access port.
Admin State	The administrative state of the SAP.
Oper State	The operating state of the SAP.
Last Changed	The date and time of the last change.
Admin MTU	The desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Oper MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Ingress qos-policy	The SAP ingress QoS policy ID.
Egress qos-policy	The SAP egress QoS policy ID.
Ingress Filter-Id	The SAP ingress filter policy ID.

Label	Description
Egress Filter-Id	The SAP egress filter policy ID.
Multi Svc Site	Indicates the multi-service site that the SAP is a member.
Ingress sched-policy	Indicates the ingress QoS scheduler for the SAP.
Egress sched-policy	Indicates the egress QoS scheduler for the SAP.
Acct. Pol	Indicates the accounting policy applied to the SAP.
Collect Stats	Specifies whether accounting statistics are collected on the SAP.
Dropped	The number of packets or octets dropped.
Offered Hi Priority	The number of high priority packets, as determined by the SAP ingress QoS policy.
Offered Low Priority	The number of low priority packets, as determined by the SAP ingress QoS policy.
Offered Low Priority	The number of low priority packets, as determined by the SAP ingress QoS policy.
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded.
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded.
Dropped In Profile	The number of in-profile packets or octets discarded.
Dropped Out Profile	The number of out-of-profile packets or octets discarded.
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded.
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded.
Ingress Queue 1	The index of the ingress QoS queue of this SAP.
High priority offered	The packets or octets count of the high priority traffic for the SAP.
High priority dropped	The number of high priority traffic packets/octets dropped.
Low priority offered	The packets or octets count of the low priority traffic.
Low priority dropped	The number of low priority traffic packets/octets dropped.
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded.
Out profile forwarded	The number of out-of-profile octets (rate above CIR) forwarded.

Label	Description
Egress Queue 1	The index of the egress QoS queue of the SAP.
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded.
In profile dropped	The number of in-profile packets or octets dropped for the SAP.
Out profile forwarded	The number of out-of-profile packets or octets (rate above CIR) forwarded.
Out profile dropped	The number of out-of-profile packets or octets discarded.
State	Specifies whether DHCP Relay is enabled on this SAP.
Info Option	Specifies whether Option 82 processing is enabled on this SAP.
Action	Specifies the Option 82 processing on this SAP or interface: keep, replace or drop.
Circuit ID	Specifies whether the If Index is inserted in Circuit ID sub-option of Option 82.
Remote ID	Specifies whether the far-end MAC address is inserted in Remote ID sub-option of Option 82.
Managed by Service	Specifies the service-id of the management VPLS managing this SAP.
Managed by MSTI	Specifies the MST instance inside the management VPLS managing this SAP.
Last BPDU from	The bridge ID of the sender of the last BPDU received on this SAP.
Managed by SAP	Specifies the sap-id inside the management VPLS managing this SAP.
Prune state	Specifies the STP state inherited from the management VPLS.
Managed by Service	Specifies the service-id of the management VPLS managing this spoke-SDP.
Last BPDU from	The bridge ID of the sender of the last BPDU received on this SAP.
Managed by Spoke	Specifies the sap-id inside the management VPLS managing this spoke-SDP.
Prune state	Specifies the STP state inherited from the management VPLS.
Peer Pw Bits	Indicates the bits set by the LDP peer when there is a fault on its side of the pseudowire. LAC failures occur on the SAP that has been configured on the pipe service, PSN bits are set by SDP-

Label	Description
	binding failures on the pipe service. The pwNotForwarding bit is set when none of the above failures apply, such as an MTU mismatch failure. This value is only applicable if the peer is using the pseudowire status signaling method to indicate faults.  pwNotForwarding — Pseudowire not forwarding. lacIngressFault Local — Attachment circuit RX fault. lacEgressFault Local — Attachment circuit TX fault. psnIngressFault Local — PSN-facing PW RX fault. psnEgressFault Local — PSN-facing PW TX fault. pwFwdingStandby — Pseudowire in standby mode.

## all

### Syntax

all

### Context

[\[Tree\]](#) (show>service>id all)

### Full Context

show service id all

### Description

This command displays detailed information for all aspects of the service.

### Platforms

All

### Output

The following output is an example of service id information, and [Table 24: Show All Service-ID Field Descriptions](#) describes the output fields.

### Output Example

```
A:PE# show service id 500 all

=====
Service Detailed Information
=====
Service Id       : 500                Vpn Id          : 0
Service Type    : IES
Name            : 500
Description     : (Not Specified)
Customer Id     : 1                  Creation Origin  : manual
Last Status Change: 08/31/2018 16:07:55
```

```

Last Mgmt Change : 08/31/2018 16:07:55
Admin State      : Up                Oper State       : Up
SAP Count        : 2                  SDP Bind Count   : 0
-----
ETH-CFM service specifics
-----
Tunnel Faults    : ignore
-----
Service Destination Points(SDPs)
-----
No Matching Entries
-----
Service Access Points
-----
SAP 1/1/9:1
-----
Service Id       : 500
SAP              : 1/1/9:1          Encap            : q-tag
Description      : (Not Specified)
Admin State      : Up                Oper State       : Up
Flags            : None
Multi Svc Site   : None
Last Status Change : 08/31/2018 16:07:55
Last Mgmt Change : 08/31/2018 16:07:55
Sub Type         : regular
Dot1Q Ethertype  : 0x8100          QinQ Ethertype   : 0x8100
Split Horizon Group: (Not Specified)

Admin MTU        : 1518              Oper MTU         : 1518
Ingr IP Fltr-Id : n/a              Egr IP Fltr-Id  : n/a
Ingr Mac Fltr-Id : n/a            Egr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a          Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Egr Agg Rate Limit : max
Q Frame-Based Acct : Disabled          Limit Unused BW : Disabled
Qinq-vlan-translation : None          Qinq-vlan-translation Ids : None

Acct. Pol        : None              Collect Stats    : Disabled

Anti Spoofing    : None              Dynamic Hosts    : Enabled
Avl Static Hosts : 0                Tot Static Hosts : 0
Calling-Station-Id : n/a

Application Profile: None
Transit Policy    : None
AARP Id          : None

Oper Group        : (none)           Monitor Oper Grp : (none)
Host Lockout Plcy : n/a
Lag Link Map Prof : (none)
Bandwidth         : Not-Applicable
Oper DCpu Prot Pol*: _default-access-policy
-----
ETH-CFM SAP specifics
-----
Tunnel Faults    : n/a              AIS              : Disabled
MC Prop-Hold-Timer : n/a
  
```



```

Squelch Levels      : None
Collect Lmm Stats   : Disabled
LMM FC Stats        : None
LMM FC In Prof      : None

-----
QoS
-----
Ingress qos-policy : 1                      Egress qos-policy : 1
Ingress FP QGrp    : (none)                  Egress Port QGrp  : (none)
Ing FP QGrp Inst   : (none)                  Egr Port QGrp Inst: (none)
Shared Q plcy      : n/a                     Multipoint shared  : Disabled
I. Sched Pol       : (Not Specified)
E. Sched Pol       : (Not Specified)
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
E. HS Sec. Shaper  : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)

-----
Sap Aggregate Stats
-----
                                Packets      Octets
Ingress
Aggregate Offered      : 0                0
Aggregate Forwarded    : 0                0
Aggregate Dropped      : 0                0
Egress
Aggregate Forwarded    : 0                0
Aggregate Dropped      : 0                0

-----
Sap Statistics
-----
Last Cleared Time      : 08/31/2018 16:19:29

                                Packets      Octets
CPM Ingress            : 0                0

Forwarding Engine Stats
Dropped                 : 0                0
Received Valid          : 0                0
Off. HiPrio             : 0                0
Off. LowPrio            : 0                0
Off. Uncolor            : 0                0
Off. Managed            : 0                0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio             : 0                0
Dro. LowPrio            : 0                0
For. InProf             : 0                0
For. OutProf            : 0                0

Queueing Stats(Egress QoS Policy 1)
Dro. In/InplusProf     : 0                0
Dro. Out/ExcProf       : 0                0
For. In/InplusProf     : 0                0
For. Out/ExcProf       : 0                0

-----
Sap per Queue stats
-----
                                Packets      Octets

```

```

Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio      : 0          0
Off. LowPrio    : 0          0
Dro. HiPrio     : 0          0
Dro. LowPrio    : 0          0
For. InProf     : 0          0
For. OutProf    : 0          0

Egress Queue 1
For. In/InplusProf : 0          0
For. Out/ExcProf   : 0          0
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf   : 0          0
* indicates that the corresponding row element may have been truncated.

-----
SAP pw-1:500
-----
Service Id      : 500
SAP             : pw-1:500          Encap           : q-tag
Description     : (Not Specified)
Admin State     : Up                Oper State      : Up
Flags          : None
Multi Svc Site : None
Last Status Change : 08/31/2018 16:09:16
Last Mgmt Change  : 08/31/2018 16:07:55
Sub Type       : regular
Split Horizon Group: (Not Specified)

Admin MTU       : 1518              Oper MTU        : 8660
Ingr IP Fltr-Id : n/a              Egr IP Fltr-Id  : n/a
Ingr Mac Fltr-Id : n/a            Egr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a           Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Egr Agg Rate Limit : max

Limit Unused BW : Disabled
Qinq-vlan-translation : None
Qinq-vlan-translation Ids : None

Acct. Pol      : None              Collect Stats   : Disabled

Anti Spoofing  : None              Dynamic Hosts   : Enabled
Avl Static Hosts : 0                Tot Static Hosts : 0
Calling-Station-Id : n/a

Application Profile: None
Transit Policy   : None
AARP Id         : None

Oper Group      : (none)            Monitor Oper Grp : (none)
Host Lockout Plcy : n/a
Lag Link Map Prof : (none)
Bandwidth       : Not-Applicable
Oper Dcpu Prot Pol*: _default-access-policy

-----
ETH-CFM SAP specifics
-----
Tunnel Faults   : n/a              AIS              : Disabled
MC Prop-Hold-Timer : n/a
Squelch Levels  : None
Collect Lmm Stats : Disabled
LMM FC Stats    : None
LMM FC In Prof  : None
  
```

```

-----
QoS
-----
Ingress qos-policy : 1                      Egress qos-policy : 500
Ingress FP QGrp   : (none)                  Egress Port QGrp  : (none)
Ing FP QGrp Inst  : (none)                  Egr Port QGrp Inst: (none)
Shared Q plcy     : n/a                     Multipoint shared  : Disabled
I. Sched Pol     : (Not Specified)
E. Sched Pol     : pw-sap
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
E. HS Sec. Shaper : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)
-----
Sap Aggregate Stats
-----
                Packets                Octets

Ingress
Aggregate Offered : 0                0
Aggregate Forwarded : 0            0
Aggregate Dropped : 0                0

Egress
Aggregate Forwarded : 0                0
Aggregate Dropped : 0                0
-----
Sap Statistics
-----
Last Cleared Time : 08/31/2018 16:19:29

                Packets                Octets
CPM Ingress      : 0                0

Forwarding Engine Stats
Dropped          : 0                0
Received Valid   : 0                0
Off. HiPrio      : 0                0
Off. LowPrio     : 0                0
Off. Uncolor     : 0                0
Off. Managed     : 0                0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio      : 0                0
Dro. LowPrio     : 0                0
For. InProf      : 0                0
For. OutProf     : 0                0

Queueing Stats(Egress QoS Policy 500)
Dro. In/InplusProf : 0            0
Dro. Out/ExcProf   : 0            0
For. In/InplusProf : 0            0
For. Out/ExcProf   : 0            0
-----
Sap per Queue stats
-----
                Packets                Octets

Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio      : 0                0
Off. LowPrio     : 0                0
Dro. HiPrio      : 0                0
    
```

```

Dro. LowPrio      : 0          0
For. InProf      : 0          0
For. OutProf     : 0          0

Egress Queue 1
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
* indicates that the corresponding row element may have been truncated.
  
```

-----  
 Service Interfaces  
 -----

-----  
 Interface  
 -----

```

If Name          : int
Admin State      : Up          Oper (v4/v6)      : Up/Down
Down Reason V6  : ifProto0perDown
Protocols        : None
IP Addr/mask    : 192.168.0.1/24  Address Type    : Primary
IGP Inhibit     : Disabled      Broadcast Address : Host-ones
HoldUp-Time     : 0            Track Srrp Inst : 0
Description     : N/A
Ignore Port State : None
  
```

-----  
 Details  
 -----

```

Description      : (Not Specified)
If Index         : 4            Virt. If Index  : 4
Last Oper Chg   : 08/31/2018 16:14:20 Global If Index : 258
Mon Oper Grp    : None
Srrp En Rtnng   : Disabled      Hold time       : N/A
SAP Id          : pw-1:500
TOS Marking     : Untrusted      If Type         : IES
SNTP B.Cast     : False          IES ID          : 500
MAC Address     : d8:2c:ff:00:00:00 Mac Accounting   : Disabled
Ingress stats   : Disabled      IPv6 DAD        : Enabled
TCP MSS V4     : 0              TCP MSS V6     : 0
ARP Timeout     : 14400s        IPv6 Nbr ReachTime: 30s
ARP Retry Timer : 5000ms        IPv6 stale time : 14400s
ARP Limit       : Disabled      IPv6 Nbr Limit  : Disabled
ARP Threshold   : Disabled      IPv6 Nbr Threshold: Disabled
ARP Limit Log Only: Disabled    IPv6 Nbr Log Only : Disabled
ARP Learn Unsolic*: Disabled    ND Learn Unsolic*: None
ARP Proactive Ref*: Disabled     ND Proactive Refr*: None
ARP Populate Host : Disabled     ND Populate Host : Disabled
ARP Route Tag   : 0            ND Route tag    : 0
IP MTU          : (default)
IP Oper MTU     : 8660
ARP Populate    : Disabled      Host Conn Verify : Disabled
SHCV pol IPv4   : None
Cflowd (unicast) : None        Cflowd (multicast): None
LdpSyncTimer    : None
LSR Load Balance : system
EGR Load Balance : both
Vas If Type     : none
TEID Load Balance : Disabled
SPI Load Balance : Disabled
uRPF Chk        : disabled
uRPF Ipv6 Chk   : disabled
uRPF Select VPRN : False
PTP HW Assist   : Disabled
  
```

```

Rx Pkts          : 0
Rx V4 Pkts      : N/A
Rx V6 Pkts      : N/A
Tx DBcast Dis. PK*: 0
Mpls Rx Pkts    : 0
Mpls Tx Pkts    : 0
OperDCpuProtPlcy : N/A

Rx Bytes        : 0
Rx V4 Bytes     : N/A
Rx V6 Bytes     : N/A
Tx DBcast Dis. By*: 0
Mpls Rx Bytes   : 0
Mpls Tx Bytes   : 0

Proxy ARP Details
Rem Proxy ARP   : Disabled
Policies        : none
Local Proxy ARP : Disabled

Proxy Neighbor Discovery Details
Local Pxy ND    : Disabled
Policies        : none

DHCP no local server

DHCP Details
Description     : (Not Specified)
Admin State     : Down
Lease Populate  : 0
Gi-Addr        : 192.168.0.1*
Gi-Addr as Src Ip : Disabled
* = inferred gi-address from interface IP address

Action          : Keep
Trusted         : Disabled

DHCP Proxy Details
Admin State     : Down
Lease Time      : N/A
Emul. Server    : Not configured

DHCP Relay Proxy Details
Relay ucast     : none
Siaddr ovr      : N/A

Subscriber Authentication Details
Auth Policy     : None

DHCP6 Relay Details
Description     : (Not Specified)
Admin State     : Down
Oper State      : Down
If-Id Option    : None
Src Addr        : Not configured
Python plcy     : (Not Specified)
Lease Populate  : 0
Nbr Resolution  : Disabled
Remote Id       : Disabled

DHCP6 Server Details
Admin State     : Down
Max. Lease States : 8000

ISA Tunnel redundant next-hop information
Static Next-Hop :
Dynamic Next-Hop :

ICMP Details
Redirects       : Number - 100
Unreachables    : Number - 100
TTL Expired     : Number - 100
Parameter Problem: Number - 100
ICMP Mask Reply : True
Time (seconds) - 10
Time (seconds) - 10
Time (seconds) - 10
Time (seconds) - 10

ICMPv6 Details
Packet Too Big  : Number - 100
Parameter Problem: Number - 100
Redirects       : Number - 100
Time (seconds) - 10
Time (seconds) - 10
Time (seconds) - 10
  
```

```

Time Exceeded      : Number - 100          Time (seconds) - 10
Unreachables      : Number - 100          Time (seconds) - 10

IPCP Address Extension Details
Peer IP Addr      : Not configured
Peer Pri DNS Addr : Not configured
Peer Sec DNS Addr : Not configured

Network Domains Associated
default

-----
Admin Groups
-----
No Matching Entries
-----

Srlg Groups
-----
No Matching Entries
-----

QoS Queue-Group Redirection Details
-----
Ingress FP QGrp   : (none)                Egress Port QGrp : (none)
Ing FP QGrp Inst : (none)                Egr Port QGrp Inst: (none)
-----

Interface
-----
If Name           : int1
Admin State       : Up
Down Reason V6    : ifProtoOperDown      Oper (v4/v6)      : Up/Down
Protocols         : None
IP Addr/mask      : 20.0.0.1/30                Address Type      : Primary
IGP Inhibit       : Disabled                Broadcast Address : Host-ones
HoldUp-Time       : 0                      Track Srrp Inst  : 0
Description       : N/A
Ignore Port State : None
-----

Details
-----
Description       : (Not Specified)
If Index          : 5                      Virt. If Index    : 5
Last Oper Chg    : 08/31/2018 16:07:55  Global If Index  : 259
Mon Oper Grp     : None
Srrp En Rtng     : Disabled                Hold time        : N/A
SAP Id           : 1/1/9:1
TOS Marking      : Untrusted                If Type          : IES
SNTP B.Cast      : False                  IES ID           : 500
MAC Address      : d8:2c:01:01:00:09      Mac Accounting   : Disabled
Ingress stats    : Disabled                IPv6 DAD         : Enabled
TCP MSS V4       : 0                      TCP MSS V6       : 0
ARP Timeout      : 14400s                   IPv6 Nbr ReachTime: 30s
ARP Retry Timer  : 5000ms                   IPv6 stale time  : 14400s
ARP Limit        : Disabled                IPv6 Nbr Limit   : Disabled
ARP Threshold    : Disabled                IPv6 Nbr Threshold: Disabled
ARP Limit Log Only: Disabled                IPv6 Nbr Log Only: Disabled
ARP Learn Unsolic*: Disabled                ND Learn Unsolic*: None
ARP Proactive Ref*: Disabled                ND Proactive Refr*: None
ARP Populate Host : Disabled                ND Populate Host : Disabled
ARP Route Tag    : 0                      ND Route tag     : 0
IP MTU           : (default)
  
```

```

IP Oper MTU      : 1500
ARP Populate    : Disabled
SHCV pol IPv4   : None
Cflowd (unicast) : None
LdpSyncTimer    : None
LSR Load Balance : system
EGR Load Balance : both
Vas If Type     : none
TEID Load Balance : Disabled
SPI Load Balance : Disabled
uRPF Chk       : disabled
uRPF Ipv6 Chk  : disabled
uRPF Select VPRN : False
PTP HW Assist   : Disabled
Rx Pkts        : 3
Rx V4 Pkts     : N/A
Rx V6 Pkts     : N/A
Tx Pkts        : 5
Tx V4 Pkts     : 5
Tx V4 Discard Pkts: 0
Tx V6 Pkts     : 0
Tx V6 Discard Pkts: 0
Tx DBcast Dis. PK*: 0
Mpls Rx Pkts   : 0
Mpls Tx Pkts   : 0
OperDCpuProtPlcy : N/A

Rx Bytes       : 0
Rx V4 Bytes    : N/A
Rx V6 Bytes    : N/A
Tx Bytes       : 530
Tx V4 Bytes    : 530
Tx V4 Discard Byt*: 0
Tx V6 Bytes    : 0
Tx V6 Discard Byt*: 0
Tx DBcast Dis. Byt*: 0
Mpls Rx Bytes  : 0
Mpls Tx Bytes  : 0

Proxy ARP Details
Rem Proxy ARP  : Disabled
Policies       : none
Local Proxy ARP : Disabled

Proxy Neighbor Discovery Details
Local Pxy ND   : Disabled
Policies       : none

DHCP no local server

DHCP Details
Description    : (Not Specified)
Admin State    : Down
Lease Populate : 0
Gi-Addr       : 20.0.0.1*
Gi-Addr as Src Ip : Disabled
* = inferred gi-address from interface IP address

Action         : Keep
Trusted        : Disabled

DHCP Proxy Details
Admin State    : Down
Lease Time     : N/A
Emul. Server   : Not configured

DHCP Relay Proxy Details
Relay ucast    : none
Siaddr ovr    : N/A

Subscriber Authentication Details
Auth Policy    : None

DHCP6 Relay Details
Description    : (Not Specified)
Admin State    : Down
Oper State     : Down
Lease Populate : 0
If-Id Option   : None
Nbr Resolution : Disabled
Src Addr       : Not configured
Remote Id      : Disabled
Python plcy    : (Not Specified)
    
```

```

DHCP6 Server Details
Admin State          : Down                      Max. Lease States : 8000

ISA Tunnel redundant next-hop information
Static Next-Hop     :
Dynamic Next-Hop    :

ICMP Details
Redirects           : Number - 100              Time (seconds) - 10
Unreachables        : Number - 100              Time (seconds) - 10
TTL Expired         : Number - 100              Time (seconds) - 10
Parameter Problem: Number - 100              Time (seconds) - 10
ICMP Mask Reply     : True

ICMPv6 Details
Packet Too Big      : Number - 100              Time (seconds) - 10
Parameter Problem: Number - 100              Time (seconds) - 10
Redirects           : Number - 100              Time (seconds) - 10
Time Exceeded       : Number - 100              Time (seconds) - 10
Unreachables        : Number - 100              Time (seconds) - 10

IPCP Address Extension Details
Peer IP Addr        : Not configured
Peer Pri DNS Addr   : Not configured
Peer Sec DNS Addr   : Not configured

Network Domains Associated
default

-----
Admin Groups
-----
No Matching Entries
-----

Srlg Groups
-----
No Matching Entries
-----

QoS Queue-Group Redirection Details
-----
Ingress FP QGrp    : (none)                    Egress Port QGrp : (none)
Ing FP QGrp Inst  : (none)                    Egr Port QGrp Inst: (none)
=====
* indicates that the corresponding row element may have been truncated.
A:PE#
    
```

Table 24: Show All Service-ID Field Descriptions

Label	Description
Service Detailed Information	
Service Id	The service identifier.
VPN Id	The number which identifies the VPN.
Service Type	Specifies the type of service.



Label	Description
SDP Id	The SDP identifier.
Description	Generic information about the service.
Customer Id	The customer identifier.
Last Mgmt Change	The date and time of the most recent management-initiated change to this customer.
SAP Count	The number of SAPs specified for this service.
SDP Bind Count	The number of SDPs bound to this service.
Service Destination Points (SDPs)	
SDP Id	The SDP identifier.
Type	Indicates whether this Service SDP binding is a spoke or a mesh.
Admin Path MTU	The largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Oper Path MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Delivery	Specifies the type of delivery used by the SDP: GRE or MPLS.
Admin State	The administrative state of this SDP.
Oper State	The operational state of this SDP.
Ingress Label	The label used by the far-end device to send packets to this device in this service by this SDP.
Egress Label	The label used by this device to send packets to the far-end device in this service by this SDP.
Ingress Filter	The ID of the ingress filter policy.
Egress Filter	The ID of the egress filter policy.
Far End	Specifies the IP address of the remote end of the GRE or MPLS tunnel defined by this SDP.
Last Changed	The date and time of the most recent change to this customer.
Signaling	Specifies the signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on this SDP.
Admin State	Specifies the operating status of the service.

Label	Description
Oper State	The current status of the service.
Hello Time	Specifies how often the SDP echo request messages are transmitted on this SDP.
Hello Msg Len	Specifies the length of the SDP echo request messages transmitted on this SDP.
Max Drop Count	Specifies the maximum number of consecutive SDP Echo Request messages that can be unacknowledged before the keepalive protocol reports a fault.
Hold Down Time	Specifies the amount of time to wait before the keepalive operating status is eligible to enter the alive state.
SDP Delivery Mechanism	When the SDP type is MPLS, a list of LSPs used to reach the far-end router displays. All the LSPs in the list must terminate at the IP address specified in the far-end field.  If the SDP type is GRE, then the following message displays: "SDP Delivery Mechanism is not MPLS".
Number of SDPs	The total number SDPs applied to this service ID.
Service Access Points	
Service Id	The service identifier.
Port Id	The ID of the access port where this SAP is defined.
Description	Generic information about the SAP.
Encap	The value of the label used to identify this SAP on the access port.
Admin State	The desired state of the SAP.
Oper State	The operating state of the SAP.
Last Changed	The date and time of the last change.
Admin MTU	The largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Oper MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Ingress qos-policy	The SAP ingress QoS policy ID.
Egress qos-policy	The SAP egress QoS policy ID.

Label	Description
Ingress Filter-Id	The SAP ingress filter policy ID.
Egress Filter-Id	The SAP egress filter policy ID.
Multi Svc Site	Indicates the multi-service site that the SAP is a member.
Ingress sched-policy	Indicates the ingress QoS scheduler for the SAP.
Egress sched-policy	Indicates the egress QoS scheduler for the SAP.
Acct. Pol	Indicates the accounting policy applied to the SAP.
Collect Stats	Specifies whether accounting statistics are collected on the SAP.
SAP Statistics	
Dropped	The number of packets or octets dropped.
Offered Hi Priority	The number of high priority packets, as determined by the SAP ingress QoS policy.
Offered Low Priority	The number of low priority packets, as determined by the SAP ingress QoS policy.
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded.
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded.
Queueing Stats	
Dropped In Profile	The number of in-profile packets or octets discarded.
Dropped Out Profile	The number of out-of-profile packets or octets discarded.
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded.
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded.
SAP per Queue stats	
Ingress Queue 1	The index of the ingress QoS queue of this SAP.
High priority offered	The packets or octets count of the high priority traffic for the SAP.
High priority dropped	The number of high priority traffic packets/octets dropped.
Low priority offered	The packets or octets count of the low priority traffic.
Low priority dropped	The number of low priority traffic packets/octets dropped.

Label	Description
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded.
Out profile forwarded	The number of out-of-profile octets (rate above CIR) forwarded.
Egress Queue 1	The index of the egress QoS queue of the SAP.
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded.
IPCP Address Extension Details	
In profile dropped	The number of in-profile packets or octets dropped for the SAP.
Peer IP Addr	Specifies the remote IP address to be assigned to the far-end of the associated PPP/MLPPP link via IPCP extensions.
Peer Pri DNS Addr	Specifies a unicast IPv4 address for the primary DNS server to be signaled to the far-end of the associate PPP/MLPPP link via IPCP extensions.
Peer Sec DNS Addr	Specifies a unicast IPv4 address for the secondary DNS server to be signaled to the far-end of the associate PPP/MLPPP link via IPCP extensions (optional).

all

## Syntax

all

## Context

[\[Tree\]](#) (show>service>id all)

## Full Context

show service id all

## Description

This command displays detailed information for all aspects of the service.

## Platforms

All

## Output

The following output is an example of show all service-ID information, and [Table 25: Show All Service-ID Field Descriptions](#) describes the output fields.

## Output Example



### Note:

Ing ipv6 Fltr and Egr ipv6 Fltr are for the 7750 SR only.

## Output Example

```
show service id all
```

```
=====
Service Detailed Information
=====
```

```
Service Id       : 2                Vpn Id          : 0
Service Type     : VPRN
Name             : (Not Specified)
Description      : (Not Specified)
Customer Id     : 1                Creation Origin  : manual
Last Status Change: 08/21/2013 08:54:14
Last Mgmt Change : 08/21/2013 08:56:06
Admin State      : Down            Oper State       : Down

Route Dist.     : None             VPRN Type       : regular
AS Number       : None             Router Id       : 18.18.18.18
ECMP            : Enabled           ECMP Max Routes : 1
Max IPv4 Routes : No Limit         Auto Bind       : None
Max IPv6 Routes : No Limit
Ignore NH Metric : Disabled
Hash Label      : Disabled
Vrf Target      : None
Vrf Import      : None
Vrf Export      : None
MVPN Vrf Target : None
MVPN Vrf Import : None
MVPN Vrf Export : None
Car. Sup C-VPN  : Disabled
Label mode      : vrf
BGP VPN Backup  : Disabled

SAP Count       : 0                SDP Bind Count  : 0
```

```
-----
ETH-CFM service specifics
-----
```

```
Tunnel Faults   : ignore
```

```
-----
Service Destination Points(SDPs)
-----
```

```
No Matching Entries
```

```
-----
Service Access Points
-----
```

```
No Sap Associations
```

```
-----
Service Interfaces
-----
```

```
No Interface Associations found.
```

```
-----
PTP Configuration
-----
```

```
Admin State      : down          Oper State       : down
Peer Limit       : 25
=====
```

```
show service id all
```

```
=====
Service Detailed Information
=====
```

```
Service Id       : 9              Vpn Id          : 0
Service Type     : VPRN
Name             : 9
Description      : (Not Specified)
Customer Id     : 1              Creation Origin  : manual
Last Status Change: 08/31/2018 16:07:55
Last Mgmt Change : 08/31/2018 16:07:55
Admin State     : Up            Oper State      : Up

Router Oper State : Up
Route Dist.      : 65536:9      VPRN Type      : regular
Oper Route Dist  : 65536:9
Oper RD Type     : configured
AS Number        : None         Router Id       : 1.1.1.1
ECMP             : Enabled      ECMP Max Routes : 1
Max IPv4 Routes  : No Limit

Auto Bind Tunnel
Resolution       : disabled
Weighted ECMP   : Disabled      ECMP Max Routes : 1

Max IPv6 Routes  : No Limit
Ignore NH Metric : Disabled
Hash Label       : Disabled
Entropy Label    : Disabled
Vrf Target       : None
Vrf Import       : None
Vrf Export       : None
MVPN Vrf Target  : None
MVPN Vrf Import  : None
MVPN Vrf Export  : None
Car. Sup C-VPN   : Disabled
Label mode       : vrf
BGP VPN Backup   : Disabled
BGP Export Inactv : Disabled

SAP Count        : 1            SDP Bind Count  : 0
```

```
-----
ETH-CFM service specifics
-----
```

```
Tunnel Faults    : ignore
```

```
-----
VPRN service Network Specifics
-----
```

```
Ing Net QoS Policy : none
Ingress FP QGrp    : (none)      Ing FP QGrp Inst : (none)
Ingress uRPF check : enabled
```

```

Vxlan Tunnel Termination
=====
Tunnel Term IP                               FPE ID    Last Change
-----
No Matching Entries
=====

Service Destination Points(SDPs)
-----
No Matching Entries
-----

Service Access Points
-----

SAP 1/1/10:1
-----
Service Id      : 9
SAP             : 1/1/10:1           Encap          : q-tag
Description     : (Not Specified)
Admin State    : Up                 Oper State     : Up
Flags          : None
Multi Svc Site : None
Last Status Change : 08/31/2018 16:07:55
Last Mgmt Change  : 08/31/2018 16:07:55
Sub Type       : regular
Dot1Q Ethertype : 0x8100                       QinQ Ethertype : 0x8100
Split Horizon Group: (Not Specified)

Admin MTU      : 1518                 Oper MTU       : 1518
Ingr IP Fltr-Id : n/a                       Egr IP Fltr-Id : n/a
Ingr Mac Fltr-Id : n/a                       Egr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a                       Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Egr Agg Rate Limit : max
Q Frame-Based Acct : Disabled                 Limit Unused BW : Disabled
Qinq-vlan-translation : None                       Qinq-vlan-translation Ids : None

Acct. Pol      : None                 Collect Stats   : Disabled

Anti Spoofing  : None                 Dynamic Hosts   : Enabled
Avl Static Hosts : 0                 Tot Static Hosts : 0
Calling-Station-Id : n/a

Application Profile: None
Transit Policy    : None
AARP Id          : None

Oper Group       : (none)                 Monitor Oper Grp : (none)
Host Lockout Plcy : n/a
Lag Link Map Prof : (none)
Bandwidth        : Not-Applicable
Oper DCpu Prot Pol* : _default-access-policy

-----
ETH-CFM SAP specifics
-----
Tunnel Faults   : n/a                 AIS             : Disabled
MC Prop-Hold-Timer : n/a
Squelch Levels  : None
Collect Lmm Stats : Disabled
LMM FC Stats    : None
    
```

```

LMM FC In Prof      : None
-----
QoS
-----
Ingress qos-policy : 1                      Egress qos-policy : 1
Ingress FP QGrp    : (none)                  Egress Port QGrp  : (none)
Ing FP QGrp Inst   : (none)                  Egr Port QGrp Inst: (none)
Shared Q plcy      : n/a                     Multipoint shared  : Disabled
I. Sched Pol       : (Not Specified)
E. Sched Pol       : (Not Specified)
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
E. HS Sec. Shaper  : (Not Specified)
I. QGrp Redir. List: (Not Specified)
E. QGrp Redir. List: (Not Specified)
-----
Sap Aggregate Stats
-----
                Packets                Octets
Ingress
Aggregate Offered : 0                    0
Aggregate Forwarded : 0                  0
Aggregate Dropped  : 0                    0

Egress
Aggregate Forwarded : 0                    0
Aggregate Dropped   : 0                    0
-----
Sap Statistics
-----
Last Cleared Time : 08/31/2018 16:29:08

                Packets                Octets
CPM Ingress      : 0                    0

Forwarding Engine Stats
Dropped          : 0                    0
Received Valid   : 0                    0
Off. HiPrio      : 0                    0
Off. LowPrio     : 0                    0
Off. Uncolor     : 0                    0
Off. Managed     : 0                    0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio      : 0                    0
Dro. LowPrio     : 0                    0
For. InProf      : 0                    0
For. OutProf     : 0                    0

Queueing Stats(Egress QoS Policy 1)
Dro. In/InplusProf : 0                  0
Dro. Out/ExcProf   : 0                  0
For. In/InplusProf : 0                  0
For. Out/ExcProf   : 0                  0
-----
Sap per Queue stats
-----
                Packets                Octets
Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio      : 0                    0
Off. LowPrio     : 0                    0
Dro. HiPrio      : 0                    0
  
```



```
Dro. LowPrio      : 0          0
For. InProf      : 0          0
For. OutProf     : 0          0

Egress Queue 1
For. In/InplusProf : 0          0
For. Out/ExcProf  : 0          0
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf  : 0          0
* indicates that the corresponding row element may have been truncated.
```

-----  
 Service Interfaces  
 -----

-----  
 Interface  
 -----

```
If Name          : int
Admin State      : Up
Down Reason V6   : ifProtoOperDown
Oper (v4/v6)    : Up/Down
Protocols        : None
IP Addr/mask     : 20.0.0.2/30
Address Type     : Primary
IGP Inhibit      : Disabled
Broadcast Address : Host-ones
HoldUp-Time      : 0
Track Srrp Inst  : 0
Description      : N/A
Ignore Port State : None
```

-----  
 Details  
 -----

```
Description      : (Not Specified)
If Index         : 3
Virt. If Index   : 3
Last Oper Chg    : 08/31/2018 16:07:55
Global If Index  : 257
Mon Oper Grp     : None
Srrp En Rtng     : Disabled
Hold time        : N/A
SAP Id           : 1/1/10:1
TOS Marking      : Trusted
If Type          : VPRN
SNTP B.Cast      : False
MAC Address       : 00:00:00:00:00:01
Mac Accounting   : Disabled
Ingress stats    : Disabled
IPv6 DAD         : Enabled
TCP MSS V4       : 0
TCP MSS V6       : 0
ARP Timeout      : 14400s
IPv6 Nbr ReachTime: 30s
ARP Retry Timer  : 5000ms
IPv6 stale time  : 14400s
ARP Limit        : Disabled
IPv6 Nbr Limit   : Disabled
ARP Threshold    : Disabled
IPv6 Nbr Threshold: Disabled
ARP Limit Log Only: Disabled
IPv6 Nbr Log Only : Disabled
ARP Learn Unsolic*: Disabled
ND Learn Unsolici*: None
ARP Proactive Refr*: Disabled
ND Proactive Refr*: None
ARP Populate Host : Disabled
ND Populate Host : Disabled
ARP Route Tag    : 0
ND Route tag     : 0
IP MTU           : (default)
IP Oper MTU      : 1500
ARP Populate     : Disabled
Host Conn Verify : Disabled
SHCV pol IPv4    : None
Cflowd (unicast) : None
Cflowd (multicast): None
LdpSyncTimer     : None
LSR Load Balance : system
EGR Load Balance : both
Vas If Type      : none
TEID Load Balance : Disabled
SPI Load Balance : Disabled
uRPF Chk         : disabled
uRPF Ipv6 Chk    : disabled
PTP HW Assist    : Disabled
```

```
Rx Pkts          : 9           Rx Bytes         : 0
Rx V4 Pkts      : N/A        Rx V4 Bytes      : N/A
Rx V6 Pkts      : N/A        Rx V6 Bytes      : N/A
Tx Pkts         : 10         Tx Bytes         : 1060
Tx V4 Pkts      : 10         Tx V4 Bytes      : 1060
Tx V4 Discard Pkts: 0       Tx V4 Discard Byt*: 0
Tx V6 Pkts      : 0         Tx V6 Bytes      : 0
Tx V6 Discard Pkts: 0       Tx V6 Discard Byt*: 0
Tx DBcast Dis. Pk*: 0       Tx DBcast Dis. Byt*: 0
Mpls Rx Pkts   : 0         Mpls Rx Bytes    : 0
Mpls Tx Pkts   : 0         Mpls Tx Bytes    : 0
OperDCpuProtPlcy : N/A

Proxy ARP Details
Rem Proxy ARP   : Disabled   Local Proxy ARP   : Disabled
Policies        : none

Proxy Neighbor Discovery Details
Local Pxy ND    : Disabled
Policies        : none

DHCP no local server

DHCP Details
Description     : (Not Specified)
Admin State     : Down       Lease Populate    : 0
Gi-Addr         : 20.0.0.2*  Gi-Addr as Src Ip : Disabled
* = inferred gi-address from interface IP address

Action          : Keep       Trusted           : Disabled

DHCP Proxy Details
Admin State     : Down
Lease Time      : N/A
Emul. Server    : Not configured
DHCP Relay Proxy Details
Relay ucast     : none
Siaddr ovr     : N/A

Subscriber Authentication Details
Auth Policy     : None

DHCP6 Relay Details
Description     : (Not Specified)
Admin State     : Down       Lease Populate    : 0
Oper State      : Down       Nbr Resolution   : Disabled
If-Id Option    : None       Remote Id        : Disabled
Src Addr        : Not configured
Python plcy     : (Not Specified)

DHCP6 Server Details
Admin State     : Down       Max. Lease States : 8000

ISA Tunnel redundant next-hop information
Static Next-Hop :
Dynamic Next-Hop :

ICMP Details
Redirects       : Number - 100   Time (seconds) - 10
Unreachables    : Number - 100   Time (seconds) - 10
TTL Expired     : Number - 100   Time (seconds) - 10
Parameter Problem: Number - 100   Time (seconds) - 10
ICMP Mask Reply : True
```

```

ICMPv6 Details
Packet Too Big      : Number - 100      Time (seconds) - 10
Parameter Problem:  : Number - 100      Time (seconds) - 10
Redirects           : Number - 100      Time (seconds) - 10
Time Exceeded      : Number - 100      Time (seconds) - 10
Unreachables       : Number - 100      Time (seconds) - 10

IPCP Address Extension Details
Peer IP Addr       : Not configured
Peer Pri DNS Addr  : Not configured
Peer Sec DNS Addr  : Not configured

-----
Admin Groups
-----
No Matching Entries
-----

-----
Srlg Groups
-----
No Matching Entries
-----

-----
QoS Queue-Group Redirection Details
-----
Ingress FP QGrp   : (none)           Egress Port QGrp : (none)
Ing FP QGrp Inst : (none)           Egr Port QGrp Inst: (none)
=====
* indicates that the corresponding row element may have been truncated.
A:PE#
    
```

The following command displays output that is relevant to PW SAPs and [Table 25: Show All Service-ID Field Descriptions](#) describes the output fields.

```
show service id all
```

```

...
-----
SAP pw-3:3
-----
Service Id       : 3
SAP              : pw-3:3           Encap           : q-tag
Description      : (Not Specified)
Admin State      : Up               Oper State      : Up
Flags            : None
Multi Svc Site   : None
Last Status Change : 02/03/2015 18:04:39
Last Mgmt Change  : 02/03/2015 18:04:13
Sub Type         : regular
Split Horizon Group: (Not Specified)
Admin MTU        : 1518             Oper MTU        : 1518
Ingr IP Fltr-Id  : n/a             Egr IP Fltr-Id  : n/a
Ingr Mac Fltr-Id : n/a             Egr Mac Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a           Egr IPv6 Fltr-Id : n/a
qinq-pbit-marking : both
Egr Agg Rate Limit: max

Endpoint         : N/A
Limit Unused BW  : Disabled

Vlan-translation : None
Acct. Pol        : None            Collect Stats    : Disabled
Application Profile: None
    
```

```

Transit Policy      : None
Oper Group         : (none)           Monitor Oper Grp : (none)
Host Lockout Plcy  : n/a
Ignore Oper Down   : Disabled
Lag Link Map Prof  : (none)
Cflowd             : Disabled

-----
...
  
```

Table 25: Show All Service-ID Field Descriptions

Label	Description
Service Detailed Information	
Service Id	The service identifier.
VPN Id	The number which identifies the VPN.
Customer Id	The customer identifier.
Last Status Change	The date and time of the most recent change in the administrative or operating status of the service.
Last Mgmt Change	The date and time of the most recent management-initiated change to this customer.
Admin State	The current administrative state.
Oper State	The current operational state.
Route Dist.	Displays the route distribution number.
AS Number	Displays the autonomous system number.
Router Id	Displays the router ID for this service.
ECMP	Displays equal cost multipath information.
ECMP Max Routes	Displays the maximum number of routes that can be received from the neighbors in the group or for the specific neighbor.
Max Routes	Displays the maximum number of routes that can be used for path sharing.
Auto Bind	Specifies the automatic binding type for the SDP assigned to this service.
Vrf Target	Specifies the VRF target applied to this service.
Vrf Import	Specifies the VRF import policy applied to this service.
Vrf Export	Specifies the VRF export policy applied to this service.
SDP Id	The SDP identifier.

Label	Description
Description	Generic information about the service.
SAP Count	The number of SAPs specified for this service.
SDP Bind Count	The number of SDPs bound to this service.
Split Horizon Group	Name of the split horizon group for this service.
Description	Description of the split horizon group.
Last Changed	The date and time of the most recent management-initiated change to this split horizon group.
ETH-CFM Service Specifics	
Tunnel Faults	Whether tunnel faults are ignored or accepted.
Service Destination Points (SDPs)	
SDP Id	The SDP identifier.
Type	Indicates whether this Service SDP binding is a spoke or a mesh.
Admin Path MTU	The desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Oper Path MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Delivery	Specifies the type of delivery used by the SDP: GRE or MPLS.
Admin State	The administrative state of this SDP.
Oper State	The operational state of this SDP.
Ingress Label	The label used by the far-end device to send packets to this device in this service by this SDP.
Egress Label	The label used by this device to send packets to the far-end device in this service by this SDP.
Ingress Filter	The ID of the ingress filter policy.
Egress Filter	The ID of the egress filter policy.
Far End	Specifies the IP address of the remote end of the GRE or MPLS tunnel defined by this SDP.
Last Changed	The date and time of the most recent change to this customer.

Label	Description
Signaling	Specifies the signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on this SDP.
Admin State	Specifies the operating status of the keepalive protocol.
Oper State	The current status of the keepalive protocol.
Hello Time	Specifies how often the SDP echo request messages are transmitted on this SDP.
Hello Msg Len	Specifies the length of the SDP echo request messages transmitted on this SDP.
Max Drop Count	Specifies the maximum number of consecutive SDP Echo Request messages that can be unacknowledged before the keepalive protocol reports a fault.
Hold Down Time	Specifies the amount of time to wait before the keepalive operating status is eligible to enter the alive state.
SDP Delivery Mechanism	When the SDP type is MPLS, a list of LSPs used to reach the far-end router displays. All the LSPs in the list must terminate at the IP address specified in the far end field.  If the SDP type is GRE, then the following message displays: SDP delivery mechanism is not MPLS.
Max Drop Count	Specifies the maximum number of consecutive SDP Echo Request messages that can be unacknowledged before the keepalive protocol reports a fault.
Number of SDPs	The total number SDPs applied to this service ID.
Service Access Points	
Service Id	The service identifier.
Port Id	The ID of the access port where this SAP is defined.
Description	Generic information about the SAP.
Encap Value	The value of the label used to identify this SAP on the access port.
Admin State	The desired state of the SAP.
Oper State	The operating state of the SAP.
Last Changed	The date and time of the last change.

Label	Description
Admin MTU	The desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Oper MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Ingress qos-policy	The SAP ingress QoS policy ID.
Egress qos-policy	The SAP egress QoS policy ID.
Ingress Filter-Id	The SAP ingress filter policy ID.
Egress Filter-Id	The SAP egress filter policy ID.
Multi Svc Site	Indicates the multi-service site that the SAP is a member.
Ingress sched-policy	Indicates the ingress QoS scheduler for the SAP.
Egress sched-policy	Indicates the egress QoS scheduler for the SAP.
Acct. Pol	Indicates the accounting policy applied to the SAP.
Collect Stats	Specifies whether accounting statistics are collected on the SAP.
SAP Statistics	
Dropped	The number of packets or octets dropped.
Offered Hi Priority	The number of high priority packets, as determined by the SAP ingress QoS policy.
Offered Low Priority	The number of low priority packets, as determined by the SAP ingress QoS policy.
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded.
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded.
Queueing Stats	
Dropped In Profile	The number of in-profile packets or octets discarded.
Dropped Out Profile	The number of out-of-profile packets or octets discarded.
Forwarded In Profile	The number of in-profile packets or octets (rate below CIR) forwarded.
Forwarded Out Profile	The number of out-of-profile packets or octets (rate above CIR) forwarded.

Label	Description
SAP per Queue stats	
Ingress Queue 1	The index of the ingress QoS queue of this SAP.
High priority offered	The packets or octets count of the high priority traffic for the SAP.
High priority dropped	The number of high priority traffic packets/octets dropped.
Low priority offered	The packets or octets count of the low priority traffic.
Low priority dropped	The number of low priority traffic packets/octets dropped.
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded.
Out profile forwarded	The number of out-of-profile octets (rate above CIR) forwarded.
Egress Queue 1	The index of the egress QoS queue of the SAP.
In profile forwarded	The number of in-profile packets or octets (rate below CIR) forwarded.
In profile dropped	The number of in-profile packets or octets dropped for the SAP.
Out profile forwarded	The number of out-of-profile packets or octets (rate above CIR) forwarded.
Out profile dropped	The number of out-of-profile packets or octets discarded.
State	Specifies whether DHCP relay is enabled on this SAP.
Info Option	Specifies whether Option 82 processing is enabled on this SAP.
Action	Specifies the Option 82 processing on this SAP or interface: keep, replace or drop.
Circuit ID	Specifies whether the If index is inserted in circuit ID sub-option of Option 82.
Remote ID	Specifies whether the far-end MAC address is inserted in Remote ID sub-option of Option 82.
Service Access Points	
Managed by Service	Specifies the service-id of the management VPLS managing this SAP.
Managed by SAP	Specifies the sap-id inside the management VPLS managing this SAP.
Prune state	Specifies the STP state inherited from the management VPLS.
Spoke SDPs	



Label	Description
Managed by Service	Specifies the service-id of the management VPLS managing this spoke SDP.
Managed by Spoke	Specifies the sap-id inside the management VPLS managing this spoke SDP.
Prune state	Specifies the STP state inherited from the management VPLS.
Peer Pw Bits	<p>Indicates the bits set by the LDP peer when there is a fault on its side of the pseudowire. LAC failures occur on the SAP that has been configured on the pipe service, PSN bits are set by SDP-binding failures on the pipe service. The pwNotForwarding bit is set when none of the above failures apply, such as an MTU mismatch failure. This value is only applicable if the peer is using the pseudowire status signaling method to indicate faults.</p> <p>pwNotForwarding — Pseudowire not forwarding.                      lacIngressFault Local — Attachment circuit RX fault.                      lacEgressFault Local — Attachment circuit TX fault.                      psnIngressFault Local — PSN-facing PW RX fault.                      psnEgressFault Local — PSN-facing PW TX fault.                      pwFwdingStandby — Pseudowire in standby mode.</p>
IPCP Address Extension Details	
Peer IP Addr	Specifies the remote IP address to be assigned to the far-end of the associated PPP/MLPPP link via IPCP extensions.
Peer Pri DNS Addr	Specifies a unicast IPv4 address for the primary DNS server to be signaled to the far-end of the associate PPP/MLPPP link via IPCP extensions.
Peer Sec DNS Addr	Specifies a unicast IPv4 address for the secondary DNS server to be signaled to the far-end of the associate PPP/MLPPP link via IPCP extensions.

all

### Syntax

all

### Context

[\[Tree\]](#) (show>service>id>mld-snooping all)

### Full Context

show service id mld-snooping all

## Description

This command displays detailed information about MLD snooping.

## Platforms

All

## Output

The following output is an example of service MLD snooping information.

### Output Example

```
*A:rbae_C# show service id 1 mld-snooping all
=====
MLD Snooping info for service 1
-----
MLD Snooping Base info
-----
Admin State : Up
Querier      : FE80:db8:12 on SAP 2/1/5
-----
Sap/Sdp      Oper   MRtr  Send   Max Num  MVR      Num
Id           State  Port  Queries Groups  From-VPLS Groups
-----
sap:1/1/4    Up     No    Disabled No Limit Local     0
sap:2/1/5    Up     Yes   Disabled No Limit Local     0
sdp:31:1     Up     No    Disabled No Limit N/A      0
sdp:36:1     Up     No    Disabled No Limit N/A      0
-----
MLD Snooping Querier info
-----
Sap Id       : 2/1/5
IP Address   : FE80:db8:12
Expires      : 11s
Up Time      : 0d 00:05:05
Version      : 2

General Query Interval : 10s
Query Response Interval : 1.0s
Robust Count           : 2
-----
MLD Snooping Multicast Routers
-----
MRouter
      Sap/Sdp Id           Up Time           Expires           Version
-----
FE80::12
      2/1/5                0d 00:05:05      11s              2
-----
Number of mrouter: 1
-----
MLD Snooping Proxy-reporting DB
-----
Group Address
      Mode      Up Time           Num Sources
-----
Number of groups: 0
-----
MLD Snooping SAP 1/1/4 Port-DB
-----
Group Address
```

```

Mode      Type      From-VPLS  Up Time      Expires      Num      MC
-----
Src      Stdbby
-----
Number of groups: 0
-----
MLD Snooping SAP 2/1/5 Port-DB
-----
Group Address
Mode      Type      From-VPLS  Up Time      Expires      Num      MC
-----
Src      Stdbby
-----
Number of groups: 0
-----
MLD Snooping SDP 31:1 Port-DB
-----
Group Address
Mode      Type      From-VPLS  Up Time      Expires      Num Src
-----
Number of groups: 0
-----
MLD Snooping SDP 36:1 Port-DB
-----
Group Address
Mode      Type      From-VPLS  Up Time      Expires      Num Src
-----
Number of groups: 0
-----
MLD Snooping Static Source Groups
-----
MLD Snooping Statistics
-----
Message Type      Received      Transmitted      Forwarded
-----
General Queries      43            0                129
Group Queries        0             0                0
Group-Source Queries 0             0                0
V1 Reports           0             0                0
V2 Reports           4             35               0
V1 Done              0             0                0
Unknown Type         0             N/A              0
-----
Drop Statistics
-----
Bad Length          : 0
Bad MLD Checksum    : 0
Bad Encoding         : 0
No Router Alert     : 0
Zero Source IP      : 0
Wrong Version       : 0
Lcl-Scope Packets   : 0
Rsvd-Scope Packets  : 0

Send Query Cfg Drops : 0
Import Policy Drops  : 0
Exceeded Max Num Groups : 0
MCAC Policy Drops    : 0
MCS Failures         : 0

MVR From VPLS Cfg Drops : 0
MVR To SAP Cfg Drops   : 0
-----
MLD Snooping Multicast VPLS Registration info
-----
MLD Snooping Admin State : Up
    
```

```

MVR Admin State      : Down
MVR Policy           : None
-----
Local SAPs/SDPs
-----
Svc Id   Sap/Sdp      Oper   From   Num Local
         Id           State  VPLS   Groups
-----
1        sap:1/1/4     Up     Local  0
1        sap:2/1/5     Up     Local  0
1        sdp:31:1      Up     N/A    0
1        sdp:36:1      Up     N/A    0
-----
MVR SAPs (from-vpls=1)
-----
Svc Id   Sap/Sdp      Oper   From   Num MVR
         Id           State  VPLS   Groups
-----
No MVR SAPs found.
=====
*A: rbae_C#
    
```

## all

### Syntax

all

### Context

[\[Tree\]](#) (show>service>id>igmp-snooping all)

### Full Context

show service id igmp-snooping all

### Description

Displays detailed information for all aspects of IGMP snooping on the VPLS service.

### Platforms

All

### Output

The following output is an example of IGMP snooping information.

#### Output Example

The following example applies to the 7750 SR:

```

*A:ALA-48>show>service>id>igmp-snooping>snooping# all
=====
IGMP Snooping info for service 750
=====
IGMP Snooping Base info
-----
Admin State : Up
    
```

```

Querier      : No querier found
-----
Sap/Sdp      Oper      MRtr  Send      Max Num  Num
Id           State     Port  Queries   Groups   Groups
-----
sap:1/1/7:0  Down     No    Disabled  No Limit  0
sdp:1:22     Down     No    Disabled  No Limit  0
sdp:8:750    Down     No    Disabled  No Limit  0
-----
IGMP Snooping Querier info
-----
No querier found for this service.
-----
IGMP Snooping Multicast Routers
-----
MRouter      Sap/Sdp Id      Up Time      Expires      Version
-----
Number of mrouter: 0
-----
IGMP Snooping Proxy-reporting DB
-----
Group Address  Mode   Type   Up Time      Expires      Num Src
-----
Number of groups: 0
-----
IGMP Snooping SAP 1/1/7:0 Port-DB
-----
Group Address  Mode   Type   Up Time      Expires      Num Src
-----
Number of groups: 0
-----
IGMP Snooping SDP 1:22 Port-DB
-----
Group Address  Mode   Type   Up Time      Expires      Num Src
-----
Number of groups: 0
-----
IGMP Snooping SDP 8:750 Port-DB
-----
Group Address  Mode   Type   Up Time      Expires      Num Src
-----
Number of groups: 0
-----
IGMP Snooping Static Source Groups
-----
IGMP Snooping Statistics
-----
Message Type      Received      Transmitted      Forwarded
-----
General Queries   0             0                 0
Group Queries     0             0                 0
Group-Source Queries 0             0                 0
V1 Reports        0             0                 0
V2 Reports        0             0                 0
V3 Reports        0             0                 0
V2 Leaves         0             0                 0
Unknown Type      0             N/A               0
-----
Drop Statistics
-----
Bad Length        : 0
Bad IP Checksum   : 0
Bad IGMP Checksum : 0
Bad Encoding      : 0
    
```

```
No Router Alert      : 0
Zero Source IP      : 0

Send Query Cfg Drops : 0
Import Policy Drops  : 0
Exceeded Max Num Groups : 0
=====
*A:ALA-48>show>service>id>snooping#
```

The following example applies to the 7450 ESS:

```
*A:ALA-42>show>service>id>igmp-snooping>snooping# all
=====
IGMP Snooping info for service 100
=====
IGMP Snooping Base info
-----
Admin State : Up
Querier      : 10.20.1.6 on SAP 2/2/1:100
-----
Sap/Sdp      Oper  MRtr  Send   Max Num  MVR      Num
Id           State Port  Queries Groups  From-VPLS Groups
-----
sap:1/1/4    Up    No    Disabled No Limit Local     1
sap:2/2/1:100 Up    No    Disabled No Limit Local     0
-----
IGMP Snooping Querier info
-----
Sap Id       : 2/2/1:100
IP Address   : 10.20.1.6
Expires      : 3s
Up Time      : 0d 00:15:23
Version      : 3

General Query Interval : 2s
Query Response Interval : 1.0s
Robust Count           : 2
-----
IGMP Snooping Multicast Routers
-----
MRouter      Sap/Sdp Id          Up Time          Expires          Version
-----
10.20.1.6    2/2/1:100          0d 00:15:24     2s              3
-----
Number of mrouter: 1
-----
IGMP Snooping Proxy-reporting DB
-----
Group Address  Mode    Up Time          Num Sources
-----
239.0.0.0     exclude 0d 00:00:04     0
-----
Number of groups: 1
-----
IGMP Snooping SAP 1/1/4 Port-DB
-----
Group Address  Mode    Type    From-VPLS  Up Time          Expires          Num Src
-----
239.0.0.0     exclude dynamic local      0d 00:00:05     4s              0
-----
Number of groups: 1
```

```

-----
IGMP Snooping SAP 2/2/1:100 Port-DB
-----
Group Address      Mode      Type      From-VPLS  Up Time      Expires      Num Src
-----
Number of groups: 0
-----
IGMP Snooping Static Source Groups
-----
IGMP Snooping Statistics
-----
Message Type              Received      Transmitted      Forwarded
-----
General Queries           463           0                 463
Group Queries             0             0                 0
Group-Source Queries      0             0                 0
V1 Reports                0             0                 0
V2 Reports                0             0                 0
V3 Reports                4             4                 0
V2 Leaves                 0             0                 0
Unknown Type              0             N/A               0
-----
Drop Statistics
-----
Bad Length                : 0
Bad IP Checksum           : 0
Bad IGMP Checksum         : 0
Bad Encoding              : 0
No Router Alert           : 0
Zero Source IP            : 0

Send Query Cfg Drops     : 0
Import Policy Drops      : 0
Exceeded Max Num Groups  : 0

MVR From VPLS Cfg Drops : 0
MVR To SAP Cfg Drops    : 0
-----
IGMP Snooping Multicast VPLS Registration info
-----
IGMP Snooping Admin State : Up

MVR Admin State          : Down
MVR Policy                : None
-----
Local SAPs/SDPs
-----
Svc Id      Sap/Sdp      Oper      From      Num Local
            Id              State     VPLS      Groups
-----
100         sap:1/1/4    Up        Local     1
100         sap:2/2/1:100 Up        Local     0
-----
MVR SAPs (from-vpls=100)
-----
Svc Id      Sap/Sdp      Oper      From      Num MVR
            Id              State     VPLS      Groups
-----
No MVR SAPs found.
-----
*A:ALA-42>show>service>id>snooping#
    
```

[Table 26: IGMP Snooping Show All Service-ID Field Descriptions](#) describes the show all service ID command output fields:

*Table 26: IGMP Snooping Show All Service-ID Field Descriptions*

Label	Description
Admin State	The administrative state of the IGMP instance
Querier	The address of the IGMP querier on the IP subnet to which the interface is attached
Sap/Sdp Id	The SAP and SDP IDs of the service ID
Oper State	The operational state of the SAP and SDP IDs of the service ID
Mrtr Port	The multicast router port
Send Queries	Send-queries command is enabled or disabled
Max Num Groups	The maximum number of multicast groups that can be joined on this SAP or SDP
MVR From VPLS	MVR from VPLS enabled
Num Groups	The actual number of multicast groups that can be joined on this SAP or SDP

all

### Syntax

all

### Context

[\[Tree\]](#) (show>redundancy>multi-chassis all)

### Full Context

show redundancy multi-chassis all

### Description

This command displays brief multi-chassis redundancy information.

### Platforms

All

### Output

The following output is an example of multi-chassis all information, and [Table 27: Redundancy multi-chassis all Field Descriptions](#) describes the output fields.



### Output Example

```

B:Dut-B# show redundancy multi-chassis all
=====
Multi-chassis Peer Table
=====
Peer
-----
Peer IP Address      : 10.10.10.2
Description          : Mc-Lag peer 10.10.10.2
Authentication      : Disabled
Source IP Address   : 0.0.0.0
Admin State         : Enabled
=====

B:Dut-B#

B:Dut-B# show lag detail
=====
LAG Details
=====
LAG 1
-----
Description: Description For LAG Number 1
-----
Details
-----
Lag-id           : 1                Mode           : access
Adm              : up                Opr            : up
Thres. Exceeded Cnt : 9                Port Threshold : 0
Thres. Last Cleared : 05/20/2006 00:12:35  Threshold Action : down
Dynamic Cost     : false              Encap Type     : null
Configured Address : 1c:71:ff:00:01:41  Lag-IfIndex    : 1342177281
Hardware Address  : 1c:71:ff:00:01:41  Adapt Qos     : distribute
Hold-time Down   : 0.0 sec
LACP              : enabled           Mode           : active
LACP Transmit Intvl : fast                LACP xmit stbby : enabled
Selection Criteria : highest-count       Slave-to-partner : disabled
Number of sub-groups: 1                Forced         : -
System Id        : 1c:71:ff:00:00:00  System Priority : 32768
Admin Key        : 32768                Oper Key       : 32666
Prtr System Id   : 20:f4:ff:00:00:00  Prtr System Priority : 32768
Prtr Oper Key    : 32768

MC Peer Address   : 10.10.10.2                MC Peer Lag-id   : 1
MC System Id     : 00:00:00:33:33:33  MC System Priority : 32888
MC Admin Key     : 32666                MC Active/Standby : active
MC Lacp ID in use : true                    MC extended timeout : false
MC Selection Logic : peer decided
MC Config Mismatch : no mismatch
-----
Port-id          Adm    Act/Stdby Opr    Primary  Sub-group  Forced  Prio
-----
331/2/1          up     active   up     yes      1          -       32768
331/2/2          up     active   up     yes      1          -       32768
331/2/3          up     active   up     yes      1          -       32768
331/2/4          up     active   up     yes      1          -       32768
-----
Port-id          Role    Exp  Def  Dist Col  Syn  Aggr  Timeout  Activity
-----
331/2/1          actor  No   No   Yes  Yes  Yes  Yes  Yes     Yes
331/2/1          partner No   No   Yes  Yes  Yes  Yes  Yes     Yes
331/2/2          actor  No   No   Yes  Yes  Yes  Yes  Yes     Yes
331/2/2          partner No   No   Yes  Yes  Yes  Yes  Yes     Yes
    
```

331/2/3	actor	No	No	Yes	Yes	Yes	Yes	Yes	Yes
331/2/3	partner	No	No	Yes	Yes	Yes	Yes	Yes	Yes
331/2/4	actor	No	No	Yes	Yes	Yes	Yes	Yes	Yes
331/2/4	partner	No	No	Yes	Yes	Yes	Yes	Yes	Yes

=====

B:Dut - B#

Table 27: Redundancy multi-chassis all Field Descriptions

Label	Description
Peer IP Address	The multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the MC peer.
Source IP Address	The source address used to communicate with the MC peer.
Admin State	The administrative state of the peer.

## all

### Syntax

**all** [*color color*] [**end-point** {*ipv4-address* | *ipv6-address*}] [**preference** *preference-id*] [**distinguisher** *distinguisher-id*] [**tunnel-id** *tunnel-id*]

**all summary**

### Context

[\[Tree\]](#) (show>router>seg-rt>sr-policies all)

### Full Context

show router segment-routing sr-policies all

### Description

This command displays the traffic statistics of all or a filtered set of the BGP and static policies, or displays summary parameters.

### Parameters

#### *color*

Specifies the color to filter on.

**Values** 0 to 4294967295

#### *ipv4-address* | *ipv6-address*

Specifies the end-point IPv4 or IPv6 address to filter on.

**Values** ipv4-address — a.b.c.d  
 ipv6-address — x:x:x:x:x:x:x (eight 16-bit pieces) or  
 x:x:x:x:x:x:d:d:d:d  
 x — [0..FFFF]H  
 d — [0..255]D

**preference-id**

Specifies the preference ID to filter on.

**Values** 0 to 4294967295

**distinguisher-id**

Specifies the distinguisher ID to filter on.

**Values** 0 to 4294967295

**summary**

Displays the summary information for the BGP and static policies.

**tunnel-id**

Specifies the tunnel ID to filter on.

**Values** 0 to 4294967295

**Platforms**

All

**Output**

The following output is an example of traffic statistics for all BGP and static policies.

**Output Example**

```
A:node-2# show router segment-routing sr-policies all
=====
SR-Policies Path
=====
-----
Type           : srMpls
Active         : No
Color          : 10
Head           : 0.0.0.0
RD             : 6
BSID           : 50001
TunnelId       : 917508
Origin ASN     : 0
NumReEval      : 0
Act S-BFD Sess. : 1
Maintenance Plcy: policy1
Ret Path BFD Lbl: 50008

Owner          : static
Endpoint Addr  : 3ffe::a14:103
Preference     : 10
Age            : 12
Origin         : 0.0.0.0
LastReEvalReason: route-add
Last Change    : 08/18/2023 05:42:53
S-BFD Threshold : 1

Path Segment Lists:
Segment-List   : 1
Num Segments   : 2
1 MPLS Label   : 524282
Weight         : 1
Last Change    : 08/17/2023 17:11:08
State          : resolved-up
```

```
2 MPLS Label : 524280 State : N/A
-----
Type          : srMpls
Active        : Yes           Owner          : static
Color         : 10
Head          : 0.0.0.0       Endpoint Addr : 3ffe::a14:103
RD            : 5             Preference    : 20
BSID          : 50001
TunnelId      : 917508       Age           : 12
Origin ASN    : 0            Origin        : 0.0.0.0
NumReEval     : 0            LastReEvalReason: route-add
NumActPathChange: 0         Last Change   : 08/18/2023 05:42:52
Act S-BFD Sess. : 1         S-BFD Threshold : 1
Maintenance Plcy: policy1
Ret Path BFD Lbl: 50008

Path Segment Lists:
Segment-List  : 1            Weight        : 1
Num Segments  : 2            Last Change   : 08/17/2023 17:11:08
 1 MPLS Label : 524281       State         : resolved-up
 2 MPLS Label : 524282       State         : N/A
=====
```

## all

### Syntax

all

### Context

[\[Tree\]](#) (show>redundancy>multi-chassis>omcr all)

### Full Context

show redundancy multi-chassis omcr all

### Description

This command displays detailed information about OMCR.

### Platforms

7750 SR

## 4.38 all-sources

### all-sources

#### Syntax

**all-sources**

#### Context

[\[Tree\]](#) (tools>dump>app-assure>group>ipassist all-sources)

#### Full Context

tools dump application-assurance group ip-identification-assist all-sources

#### Description

This command displays the statistics related to IP identification assist for top applications.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of statistics related to IP identification assist for top applications.

#### Output Example

```
=====
Application-Assurance ip-identification-assist all-sources:
=====
group                1
ip-identification-assist  no shutdown
passive-dns          enabled
positive-app-id      enabled
-----

isa 1/1
-----
Application Name      IPs in cache IPs added      IPs updated
IP lookups found      Parent Application Name
-----
"Application1"        6                6                0
  Dns Snoop           0 "ParentApplication1"  6                0
  Positive App Id     0                0                0
"Application2"        4                4                0
  Dns Snoop           0 "ParentApplication1"  4                0
```

Positive App Id	0	0	0
"Application3"	8	8	0
Dns Snoop	0 "ParentApplication1"	8	0
Positive App Id	0	0	0
"Application4"	12	12	0
Dns Snoop	0 "ParentApplication1"	12	0
Positive App Id	0	0	0
"Application5"	12	12	0
Dns Snoop	0 "ParentApplication2"	12	0
Positive App Id	0	0	0
"Application6"	53	53	0
Dns Snoop	0 "ParentApplication3"	53	0
Positive App Id	0	0	0
"Application7"	3	3	0
Dns Snoop	0 "ParentApplication3"	3	0
Positive App Id	0	0	0
"Application8"	6	6	0
Dns Snoop	0 "ParentApplication2"	6	0
Positive App Id	0	0	0
"Application9"	6	6	0
Dns Snoop	0 "ParentApplication4"	6	0
Positive App Id	0	0	0
"Application10"	16	16	0
Dns Snoop	0 "ParentApplication5"	16	0
Positive App Id	0	0	0
"Application11"	8	8	0
Dns Snoop	0 "ParentApplication6"	8	0

Positive App Id	0	0	0
"Application12"	6	6	0
Dns Snoop	6	6	0
Positive App Id	0	0	0
"Application13"	2	2	0
Dns Snoop	2	2	0
Positive App Id	0	0	0
"Application14"	8	8	0
Dns Snoop	8	8	0
Positive App Id	0	0	0
-----			
TOTAL (14 applications)	150	150	0
Dns Snoop	150	150	0
Positive App Id	0	0	0
=====			

## 4.39 all-subscriptions

### all-subscriptions

#### Syntax

**all-subscriptions**

#### Context

[\[Tree\]](#) (show>log>cli all-subscriptions)

#### Full Context

show log cli all-subscriptions

#### Description

This command displays all subscriptions to all event logs that have a destination of 'cli'.

## Platforms

All

### 4.40 ancp

ancp

#### Syntax

**ancp ancp-sub-string** *string*

#### Context

[\[Tree\]](#) (clear>subscr-mgmt ancp)

#### Full Context

clear subscriber-mgmt ancp

#### Description

This command clears subscriber ANCP data.

#### Parameters

*string*

Specifies the ANCP string to clear, up to 63 characters, corresponding to this subscriber ID.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### 4.41 ancp-policy

ancp-policy

#### Syntax

**ancp-policy** [*policy-name*]

**ancp-policy** *policy-name* **association**

#### Context

[\[Tree\]](#) (show>subscr-mgmt ancp-policy)



## Full Context

show subscriber-mgmt ancp-policy

## Description

This command displays subscriber Access Node Control Protocol (ANCP) policy information.

## Parameters

### *policy-name*

Displays information for the specified ANCP policy.

### **association**

Displays the information configured with the ANCP policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management ANCP policy information.

### Output Example

```
A:cses-E11>config>subscr-mgmt>ancp# show subscriber-mgmt ancp-policy "test"
=====
ANCP Policy "test"
=====
I. Rate Reduction      : 0 kbps
I. Rate Adjustment    : 100 percent
I. Rate Monitor       : 63360 kbps
I. Rate Monitor Alarm : Yes
I. Rate Modify        : N/A

E. Rate Reduction      : 0 kbps
E. Rate Adjustment    : 100 percent
E. Rate Monitor       : 0 kbps
E. Rate Monitor Alarm : no
E. Rate Modify        : N/A

Port Down : N/A

Last Mgmt Change: 02/13/2013 19:15:28
=====
*A:cses-E11>config>subscr-mgmt>ancp#
```

[Table 28: ANCP Policy Field Descriptions](#) describes ANCP policy output fields.

*Table 28: ANCP Policy Field Descriptions*

Field	Description
I. Rate Reduction	The ingress rate reduction to be applied for this subscriber in order to account for its video viewership
I. Rate Adjustment	The ingress rate adjustment

Field	Description
I. Rate Monitor	The ingress rate monitor
I. Rate Monitor Alarm	The ingress rate monitor alarm
I. Rate Modify	The ingress rate modification that is to be applied
E. Rate Reduction	The egress rate reduction to be applied for this subscriber in order to account for its video viewership
E. Rate Adjustment	The egress rate adjustment
E. Rate Monitor	The egress rate monitor
E. Rate Monitor Alarm	The egress rate monitor alarm
E. Rate Modify	The egress-rate modification that is to be applied
Port Down	The status of the port down configuration
Last Mgmt Change	The date and time of the last management change

## ancp-policy

### Syntax

**ancp-policy** [*policy-name*]

### Context

[\[Tree\]](#) (show>subscriber-management ancp-policy)

### Full Context

show subscriber-mgmt ancp-policy

### Description

This command displays subscriber ANCP policy information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of subscriber management ANCP policy information.

### Output Example

```
A:active# show subscriber-mgmt ancp-policy
=====
ANCP Policies
=====
```

```

adsl-operator1
vdsl-operator1
-----
Number of ANCP policies : 2
=====
A:active#
A:active# show subscriber-mgmt ancp-policy adsl-operator1
=====
ANCP Policy "adsl-operator1"
=====
I. Rate Reduction      : 0 kbps
I. Rate Adjustment    : 100 percent
I. Rate Monitor       : 0 kbps
I. Rate Monitor Alarm : no
I. Rate Modify        : scheduler "root"

E. Rate Reduction      : 10 kbps
E. Rate Adjustment    : 100 percent
E. Rate Monitor       : 0 kbps
E. Rate Monitor Alarm : no
E. Rate Modify        : scheduler "root"
Port Down : N/A
Last Mgmt Change: 01/26/2007 17:10:51
=====
A:active#
A:active# show subscriber-mgmt ancp-policy adsl-operator1 association
=====
ANCP Policy "adsl-operator1" associations
=====
SAP Static Map Associations
-----
- SAP      : 1/1/3                               Svc-id : 333 (VPLS)
  String  : "ANCP-String-1"
  String  : "ANCP-String-2"
-----
MSS Static Map Associations
-----
- Cust-id : 1                                   MSS-name: mss1
  String  : "ANCP-String-3"
-----
Subscriber Associations
-----
No associations found.
Number of associations : 3
=====
A:active#
    
```

[Table 29: ANCP Policy Field Descriptions](#) describes subscriber management ANCP policy fields.

*Table 29: ANCP Policy Field Descriptions*

Field	Description
I. Rate Reduction	The ingress rate reduction applied for this policy
I. Rate Adjustment	The ingress rate adjustment percentage
I. Rate Monitor	The ingress rate monitor rate

Field	Description
I. Rate Monitor Alarm	The ingress rate monitor enabled; yes or no
I. Rate Modify	The ingress rate modify scheduler policy
E. Rate Reduction	The egress rate reduction applied for this policy percentage
E. Rate Adjustment	The egress rate adjustment
E. Rate Monitor	The egress rate monitor rate
E. Rate Monitor Alarm	The egress rate monitor enabled; yes or no
E. Rate Modify	The egress rate monitor rate
Port Down	The actions taken on port-down
Last Mgmt Change	The time of the last modification of this entry
SAP	The ANCP static map entry SAP ID
Svc-id	The service ID associated with this static map
String	The ANCP string
Cust-id	The ID of the customer in which the multi-service-site specifies
MSS-name	The name of the multi-service-site used by this subscriber
Number of associations	The total number associations matching the search criteria

## 4.42 ancp-string

### ancp-string

#### Syntax

**ancp-string**

**ancp-string** *ancp-string*

**ancp-string customer** *customer-id* **site** *customer-site-name*

**ancp-string sap** *sap-id*

#### Context

[\[Tree\]](#) (show>subscriber-management ancp-string)

## Full Context

```
show subscriber-mgmt ancp-string
```

## Description

This command displays subscriber ANCP string information.

## Parameters

### *ancp-string*

Specify the ASCII representation of the DSLAM circuit-id name.

### *customer-id*

Specify the associated existing customer name.

### *customer-site-name*

Specify the associated customer's configured MSS name.

### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management ANCP string information.

### Output Example

```
A:active# show subscriber-mgmt ancp-string
=====
ANCP-Strings
=====
ANCP-String                               Assoc State
-----
"ANCP-String-1"                            SAP      Up
"ANCP-String-2"                            SAP      Down
"ANCP-String-3"                            MSS      Up
"ANCP-String-4"                            MSS      Unknown
"ANCP-String-5"                            ANCP     Up
"ANCP-String-6"                            MSS      Unknown
-----
Number of ANCP-Strings : 6
=====
A:active#

*A:Dut-C# show subscriber-mgmt ancp-string hpolSub43
=====
ANCP-String "hpolSub43"
=====
Type      : SUB - "hpolSub43"
State     : Up
I. Rate   : 100 kbps
Adj I. Rate: N/A
Act I. Rate: N/A
Service Id : 1 (VPRN)
Group     : Alu
Ancp Policy: ancpPol
E. Rate   : 200 kbps
Adj E. Rate: 200 kbps
Act E. Rate: 182 kbps
```

```
Neighbor : 10.100.100.1:49063
=====
*A:Dut-C#
```

Other applicable show command output:

```
A:active# show service id 333 sap 1/1/3 detail
=====
Service Access Points(SAP)
=====
Service Id      : 333
SAP             : 1/1/3          Encap      : null
...
-----
ANCP Override
-----
Ing Sched Name: root
- PIR      : 100 kbps
- String   : "ANCP-String-1"
Egr Sched Name: root
- PIR      : 100 kbps
- String   : "ANCP-String-1"
...
-----
Dro. InProf      : 0           0
Dro. OutProf     : 0           0
=====
A:active#

A:active# show service customer 1 site mss1
=====
Customer 1
=====
Customer-ID      : 1
Description      : Default customer
...
-----
ANCP Override
-----
Egr Sched Name: root
- PIR      : 90 kbps
- String   : "ANCP-String-3"
-----
Service Association
-----
No Service Association Found.
=====
A:active#
```

[Table 30: ANCP String Field Descriptions](#) describes ANCP string output fields.

*Table 30: ANCP String Field Descriptions*

Field	Description
ANCP-String	The ANCP string name
Assoc	The entity associated with the ANCP string
State	The state of the entity associated with the ANCP string

Field	Description
Number of ANCP-Strings	The number of ANCP strings matching the search criteria
Type	The location the ANCP string is configured
Ancp Policy	The ANCP policy name
I. Rate	The ingress rate
E. Rate	The egress rate
Adj I. Rate	The adjusted ingress rate
Adj E. Rate	The adjusted egress rate
Act I. Rate	The actual ingress rate
Act E. Rate	The actual egress rate
Service Id	The service ID
Group	The group name
Neighbor	The neighbor address

## 4.43 anycast

### anycast

#### Syntax

**anycast** [**family**] [**detail**]

#### Context

[\[Tree\]](#) (show>router>pim anycast)

#### Full Context

show router pim anycast

#### Description

This command displays PIM anycast rp-set information.

#### Parameters

##### *family*

Specifies the address family.

**Values** ipv4, ipv6

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of a PIM anycast configuration.

**Output Example**

```
A:dut-d# show router pim anycast
=====
PIM Anycast RP Entries
=====
Anycast RP          Anycast RP Peer
-----
100.100.100.1      10.102.1.1
                   10.103.1.1
                   10.104.1.1
-----
PIM Anycast RP Entries : 3
=====
```

[Table 31: PIM Anycast Fields](#) provides PIM anycast field descriptions

*Table 31: PIM Anycast Fields*

Label	Description
Anycast Address	Displays the candidate anycast address.
Anycast RP Peer	Displays the candidate anycast RP peer address.

## 4.44 anysec

### anysec

**Syntax**

**anysec port** *port-id*

**Context**

[\[Tree\]](#) (tools>dump anysec)

**Full Context**

tools dump anysec



## Description

This command dumps ANYsec information.

## Parameters

### *port-id*

Specifies the port ID.

**Values** slot, mda, connector, port

## Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-1se

## anysec

## Syntax

**anysec encryption-group *group-name* peer *ip-address* statistics**

## Context

[\[Tree\]](#) (clear anysec)

## Full Context

clear anysec

## Description

This command clears ANYsec statistics.

## Parameters

### *group-name*

Specifies the encryption group name, up to 32 characters.

### *ip-address*

Specifies a peer IP address.

**Values** ipv4-address: a.b.c.d  
ipv6-address:

- x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF] H
- d: [0 to 255] D

### **statistics**

Keyword used to clear ANYsec statistics

## Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-1se

anysec

## Syntax

anysec

## Context

[\[Tree\]](#) (show anysec)

## Full Context

show anysec

## Description

This command displays ANYsec information.

## Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-1se

## 4.45 app-filter

app-filter

## Syntax

app-filter [*entry-id*]

## Context

[\[Tree\]](#) (show>app-assure>group>policy app-filter)

## Full Context

show application-assurance group policy app-filter

## Description

This command displays application-assurance policy filter information.

## Parameters

### *entry-id*

Specifies an existing application filter entry.

**Values** 1 to 65535

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.46 app-group

### app-group

## Syntax

**app-group** [*app-group-name*] **count** [**detail**]

**app-group count top** *granularity* [**max-count** *max-count*]

## Context

**[Tree]** (show>app-assure>group>aa-sub app-group)

**[Tree]** (show>app-assure>group app-group)

## Full Context

show application-assurance group aa-sub app-group

show application-assurance group app-group

## Description

This command displays per-application-group statistics. System-wide statistics displayed account for all flows completed and the last internal snapshot of the active flows.

## Parameters

### *app-group-name*

Displays information about the specified application group name.

### **count**

Displays the counters for the application group.

### **detail**

Displays detailed information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **app-group** command information.

### Output Example

```
A:ALU>show>app-assure>group# app-group count
=====
App-group Statistics
=====
Application Group          Disc Octets          Packets          Flows
-----
File Transfer              0% 0                 0                0
Games                     0% 3865532           4952             144
Infrastructure             0% 174524             1217             1177
Instant Messaging         0% 2979117            9930             97
Local Content             0% 10581539           10942            74
Mail                      0% 57940              346              24
MultiMedia                0% 76911464           79417            198
Nntp                      0% 0                  0                0
Peer to Peer              0% 10903442           13901            485
Premium Partner           0% 0                  0                0
Remote Connectivity       0% 0                  0                0
Server                    0% 1097               8                2
Suspect                   72% 1012             11               11
Tunneling                  0% 19872617           33989            204
Unknown                   0% 5243395            27510            2648
Web                       0% 82135303           91828            2152
-----
A:ALU>show>app-assure>group#

A:ALU>show>app-assure>group# app-group "MultiMedia" count detail
=====
App-group "MultiMedia" Statistics
=====
Application Group:
Type          Octets          Packets          Flows
-----
MultiMedia:
Admitted from subscriber: 193605          1797            23
Denied from subscriber:  0                0                0
Active flows from subscriber:
Admitted to subscriber:  4835822         3366            23
Denied to subscriber:    0                0                0
Active flows to subscriber:
Total flow duration:     433 seconds
Terminated flows:
Short Duration flows:
Medium Duration flows:
Long Duration flows:
Active subscribers:      0
=====
A:ALU>show>app-assure>group#
```

## app-group

### Syntax

**app-group** [*app-group-name*]

## Context

[\[Tree\]](#) (show>app-assure>group>policy app-group)

## Full Context

show application-assurance group policy app-group

## Description

This command displays application-assurance policy application group information.

## Parameters

### *app-group-name*

Specifies the application group name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## app-group

## Syntax

**app-group** [*app-group-name*] **count**

## Context

[\[Tree\]](#) (show>app-assure>group>aa-sub>um app-group)

## Full Context

show application-assurance group aa-sub usage-monitor app-group

## Description

This command displays usage monitor statistics for the application group.

## Parameters

### *app-group-name*

Specifies the application group name, up to 32 characters.

### **count**

Displays counters for the application group.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## app-group

### Syntax

**app-group** [*app-group-name*] **count** [**detail**]

### Context

[\[Tree\]](#) (tools>dump>app-assure>group>aa-sub app-group)

### Full Context

tools dump application-assurance group aa-sub app-group

### Description

This command displays per-subscriber per-app-group statistics.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.47 app-profile

## app-profile

### Syntax

**app-profile** [*app-prof-name*]  
**app-profile** *app-prof-name* **associations**

### Context

[\[Tree\]](#) (show app-assure group policy app-profile)

### Full Context

show application-assurance group policy app-profile

### Description

This command displays application-assurance policy application profile information.

### Parameters

- app-prof-name***  
Specifies an existing application profile name.
- associations**  
Displays subscriber management associations.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.48 app-qos-policy

### app-qos-policy

#### Syntax

**app-qos-policy** [*entry-id*]  
**app-qos-policy non-zero**

#### Context

[\[Tree\]](#) (show>app-assure>group>policy app-qos-policy)

#### Full Context

show application-assurance group policy app-qos-policy

#### Description

This command displays application-assurance policy application QoS policy information.

#### Parameters

##### *entry-id*

Specifies an existing application QoS policy entry id.

**Values** 1 to 65535

##### **non-zero**

Selects only non-zero count entries.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.49 app-service-option

### app-service-option

#### Syntax

**app-service-option** [*characteristic-name*]

## Context

[\[Tree\]](#) (show>app-assure>group>policy app-service-option)

## Full Context

show application-assurance group policy app-service-option

## Description

This command displays application-assurance policy application service option information.

## Parameters

### *characteristic-name*

Specifies the characteristic name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.50 application

### application

## Syntax

**application** [*application-name*] **count** [**detail**]

**application count top** *granularity* [**max-count** *max-count*]

## Context

[\[Tree\]](#) (show>app-assure>group>aa-sub-study application)

[\[Tree\]](#) (show>app-assure>group application)

[\[Tree\]](#) (show>app-assure>group>aa-sub application)

## Full Context

show application-assurance group aa-sub-study application

show application-assurance group application

show application-assurance group aa-sub application

## Description

This command displays per-application statistics. The system-wide statistics displayed account for all flows completed and the last internal snapshot of the active flows.

Subscriber statistics are available for special-study subscribers and account for all completed and active flows at the moment of this statistics request.



## Parameters

### *application-name*

Displays information about the specified application name.

### **count**

Displays counter information.

### **detail**

Displays detailed information.

### **top**

Displays counters sorted by granularity.

### *granularity*

Displays counters sorted by octets, packets, or floe. This is indicated by granularity.

**Values** octets, packets, flows

### *max-count*

If the value is greater than 0, displays up to the indicated value of statistic rows. If 0, displays all.

**Values** 1 to 4294967295

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **application** command information.

### Output Example

```
A:ALU-ABC>show>app-assure>group# application count
=====
Application Statistics
=====
Application                Disc Octets          Packets          Flows
-----
...
DHT                        0% 0                0                0
DNS_53                     0% 96781            627              627
DNS_Local                  0% 0                0                0
DNS_Server                 0% 276              3                3
DNS_Suspect               100% 736            8                8
FTP                        0% 0                0                0
...
-----
A:ALU-ABC>show>app-assure>group#

A:ALU-ABC>show>app-assure>group# application "POP3" count detail
=====
Application "POP3" Statistics
=====
Application:
Type                Octets          Packets          Flows
-----
```

```

POP3:
Admitted from subscriber: 14095          149          10
Denied from subscriber:  0              0            0
Active flows from subscriber:
Admitted to subscriber:  30707          128          10
Denied to subscriber:    0              0            0
Active flows to subscriber:
Total flow duration:     7 seconds
Terminated flows:
Active subscribers:      0
A:ALU-ABC>show>app-assure>group#

A:ALU>show>app-assure>group# application "HTTP_Video" count detail
=====
Application "HTTP_Video" Statistics
=====
Application:
Type          Octets          Packets          Flows
-----
HTTP_Video:
Admitted from subscriber: 369528          5404           36
Denied from subscriber:  0              0              0
Active flows from subscriber:
Admitted to subscriber:  15387734         10629           36
Denied to subscriber:    0              0              0
Active flows to subscriber:
Total flow duration:     463 seconds
Terminated flows:
Short Duration flows:
Medium Duration flows:
Long Duration flows:
Active subscribers:      1
=====
A:ALU>show>app-assure>group#
    
```

## application

### Syntax

**application** [*app-name*]

### Context

[\[Tree\]](#) (show>app-assure>group>policy application)

### Full Context

show application-assurance group policy application

### Description

This command displays application-assurance policy application information.

### Parameters

***app-name***

Specifies the application name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## application

### Syntax

**application** [*application-name*] **count**

### Context

**[Tree]** (show>app-assure>group>aa-sub>um application)

### Full Context

show application-assurance group aa-sub usage-monitor application

### Description

This command displays usage monitor statistics for the application.

### Parameters

#### *application-name*

Specifies the application name, up to 32 characters.

#### **count**

Displays counters for the application.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## application

### Syntax

**application** [*application-name*] **count** [**detail**]

### Context

**[Tree]** (tools>dump>app-assure>group>aa-sub application)

### Full Context

tools dump application-assurance group aa-sub application

### Description

This command displays per-subscriber per-application statistics.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## application

### Syntax

```
application [app-name] [{dscp | dot1p}]
```

### Context

[\[Tree\]](#) (show>router>sgt-qos application)

### Full Context

```
show router sgt-qos application
```

### Description

This command displays application QoS settings.

### Parameters

#### *app-name*

Specifies the application.

**Values** Some of the following values may only apply to specific products. Refer to the *SR OS R24.x.Rx Software Release Notes* for details about application support for different SR OS products:

arp, bgp, bmp, call-trace, cflowd, dhcp, diameter, dns, ftp, grpc, gtp, http, icmp, igmp, igmp-reporter, isis, l2tp, ldp, mld, mpls-udp-return, msdp, mtrace2, ndis, ntp, ospf, pcep, pim, pppoe, ptp, radius, rip, rsvp, sflow, snmp, snmp-notification, srrp, ssh, syslog, tacplus, telnet, tftp, traceroute, vrrp

#### **dscp**

Specifies to show DSCP values only.

#### **dot1p**

Specifies to show dot1p values only.

## Platforms

All

## Output

The following output is an example of SGT QoS application information.

### Output Example

```
A:ALA-A# show router sgt-qos application
```

```
=====
DSCP Application Values
```

```

=====
Application          Configured DSCP Value      Default DSCP Value(s)
-----
bgp                  none                        nc1
bmp                  none                        af41
call-trace           none                        af41
cflowd              none                        nc1
dhcp                 none                        nc1, af41, nc2
diameter            none                        af41
dns                  none                        af41
ftp                  none                        af41
grpc                 none                        af41
gtp                  none                        nc2, nc1
http                 none                        af41
icmp                 none                        be, nc1
igmp                 none                        nc1
igmp-reporter        none                        nc1
l2tp                 none                        nc1
ldp                  none                        nc1
mld                  none                        nc1
mpls-udp-return      none                        nc1
msdp                 none                        nc1
mtrace2             none                        nc1
ndis                 none                        nc1, nc2
ntp                  none                        nc1
ospf                 none                        nc1
pcep                 none                        nc1
pim                  none                        nc1
ptp                  none                        nc1
radius               none                        nc1
rip                  none                        nc1
rsvp                 none                        nc1
sflow               none                        nc1
snmp                 none                        af41
snmp-notification    none                        af41
srrp                 none                        nc1
ssh                  none                        af41
syslog               none                        af41
tacplus              none                        af41
telnet               none                        af41
tftp                 none                        af41
traceroute           none                        be
vrrp                 none                        nc1
=====

Dot1p Application Values
=====
Application          Configured Dot1p Value      Default Dot1p Value
-----
arp                  none                        7
isis                 none                        7
pppoe                none                        7
=====
A:ALA-A#
    
```



**Note:**

Some applications have multiple DSCP default values depending on the context or service.

## 4.51 application-assurance

### application-assurance

#### Syntax

**application-assurance**

#### Context

[\[Tree\]](#) (clear application-assurance)

#### Full Context

clear application-assurance

#### Description

This command clears application assurance commands.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### application-assurance

#### Syntax

**application-assurance**

#### Context

[\[Tree\]](#) (show application-assurance)

#### Full Context

show application-assurance

#### Description

Commands in this context display application assurance commands.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## application-assurance

### Syntax

**application-assurance**

### Context

**[Tree]** (tools>dump application-assurance)

### Full Context

tools dump application-assurance

### Description

Commands in this context dump application assurance information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 4.52 application-assurance-group

### application-assurance-group

### Syntax

**application-assurance-group** [*aa-group-id* [ **load-balance** [**unassigned**]]]

### Context

**[Tree]** (show>isa application-assurance-group)

### Full Context

show isa application-assurance-group

### Description

This command displays ISA group information.

### Parameters

#### ***aa-group-id***

Specifies the AA ISA group ID.

#### **load-balance**

Specifies load balancing information.

**unassigned**

Specifies load balancing unassigned aa-sub information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

[Table 32: Show Application Assurance Group Output Fields](#) describes the show command output fields:

*Table 32: Show Application Assurance Group Output Fields*

Label	Description
ISA-AA Group Index	Indicates the group number of this group of MDAs.
Description	
Primary ISA-AA	Displays the primary slot and card number and whether the status is up or down and is either active or standby.
Backup ISA-AA	Displays the backup slot and card number and whether the status is up or down and is either active or standby. The status should be up and standby.
Last Active change	Indicates the last time a successful change was performed.
Admin State	Displays the administrative state, up or down.
Oper State	Displays the operational state, up or down.
Diverted FCs	Displays the forwarding class to be diverted.
Fail to mode	Displays how traffic is handled when there are no available ISA-AA cards to handle the traffic, either failToWire or failToOpen.
Egress <b>from</b> subscriber	
Pool	Displays the buffer pool as defined in TIMETRA-PORT-MIB::tmnxObjectAppPool for subscriber to network traffic egressing towards the ISA-AA MDA.
Reserved Cbs	Displays the percentage of the buffer pool reserved for high priority traffic for subscriber to network traffic egressing towards the ISA-AA MDA.
Slope Policy	Displays the policy as defined in TIMETRA-QOS-MIB::tSlopePolicyTable for subscriber to network traffic egressing towards the ISA-AA MDA.
Queue Policy	Displays the policy as defined in TIMETRA-QOS-MIB::tNetworkQueueTable for subscriber to network traffic egressing towards the ISA-AA MDA.



Label	Description
Scheduler Policy	Displays the policy as defined in TIMETRA-QOS-MIB::tSlope PolicyTable for network to subscriber traffic egressing towards the ISA-AA MDA
Egress <b>to</b> subscriber	
Pool	Displays the buffer pool as defined in TIMETRA-PORT-MIB::tmnxObjectAppPool for network to subscriber traffic egressing towards the ISA-AA MDA.
Reserved Cbs	Displays the percentage of the buffer pool reserved for high priority traffic for network to subscriber traffic egressing towards the ISA-AA MDA.
Slope Policy	Displays the policy as defined in TIMETRA-QOS-MIB::tSlope PolicyTable for network to subscriber traffic egressing towards the ISA-AA MDA.
Queue Policy	Displays the policy as defined in TIMETRA-QOS-MIB::tNetwork QueueTable for network to subscriber traffic egressing towards the ISA-AA MDA.
Scheduler Policy	Displays the policy as defined in TIMETRA-QOS-MIB::t SchedulerPolicyTable for network to subscriber traffic egressing towards the ISA-AA MDA.
Overload Sub-quarantine	Displays the overload quarantine state, up or down.
Overload Cut Through	Displays the overload cut through state, enabled or disabled.

### Output Example

```
*A:Dut-A# show isa application-assurance-group 1

=====
ISA Application-assurance-groups
=====
ISA-AA Group Index           : 1
Description                  : (Not Specified)
Subscriber Scale             : residential-8k
WLAN GW Group Index         : N/A
Primary ISA-AA               : esa-1/1 up/active
                             : esa-1/2 up/active
Backup ISA-AA                : none
Minimum ISA Generation       : 1
Last Active change          : 01/24/2024 19:26:50
Admin State                  : Up
Oper State                   : Up
Diverted FCs                 :
Fail to mode                  : fail-to-wire
QoS
  Egress from subscriber
    Pool                      : default
    Reserved Cbs              : default
```

```

    Slope Policy           : default
    Queue Policy          : default
    Scheduler Policy      :
Egress to subscriber
    Pool                  : default
    Reserved Cbs         : default
    Slope Policy         : default
    Queue Policy         : default
    Scheduler Policy     :
Capacity Cost
    High Threshold       : 4294967295
    Low Threshold        : 0
Overload Sub-quarantine : Down
Overload Cut Through    : disabled
Transit Prefix
    Max IPv4 entries     : 0
    Max IPv6 entries     : 0
    Max IPv6 remote entries : 0
HTTP Enrichment
    Max Packet Size     : 1500 octets
Shared Resources
    TCP Advanced Functions : 0%
    Web Service Cache      : 0%
    GTP Tunnel Database    : 0%
    Bandwidth Shaper Buffer : 0%
    Multi Device Detect    : 0%
VM Traffic Distribution by IP : disabled
VM Traffic Distribution by TEID : disabled
Sub Traffic Distribution by IP : enabled
=====
A:ALU>show>isa#

*A:Dut-C>show isa application-assurance-group 1 load-balance
=====
ISA Application-assurance-group 1
=====
load-balance status      : Complete
isa-capacity-cost-threshold : low 0
                          : high 4294967295
-----
              capacity  aa-sub  aa-sub  ip      transit-prefix-entries
              cost      sub    stats  addresses  ipv4  v4-rm  ipv6  v6-rm
-----
1/2           4          4      8      3         0     0     0     0
3/1           3          3      6      1         0     0     0     0
Mda Limit    n/a          1024  32768  16384     0     0     0     0
=====
aa-sub type count for group 1
=====
              all      esm      esm-mac  sap      spoke-sdp  transit
-----
1/2           4          1        3         0         0         0
3/1           3          2        1         0         0         0
Unassigned(*) 0          0        0         0         0         n/a**
-----
(*)  Subscribers are not initially load balanced until configuration and
    persistence files have been processed.
(**) For unassigned transits, refer to unassigned subscriber load-balance
    screen for details.
-----
Last tools load-balance complete reason:
Tool never performed or last performed on another AA group
Subs moved : 0
    
```

```
Next sub   : n/a
Service Id : n/a
=====

*A:Dut-C# show isa application-assurance-group 84 load-balance unassigned
=====
ISA Application-assurance-group 84 unassigned
=====
type      SvcId    aa-sub                App-Profile
-----
esm       2        Sub1                  Cost30
esm       50       Sub2                  Cost31
sap       29       2/1/10:527           Cost29
sap       30       2/1/10:528           Cost29
sap       31       2/1/10:529           Cost29
sap       31       2/1/10:530           Cost29
sap       31       2/1/10:531           Cost29
sap       32       2/1/10:546           Cost29
sap       32       2/1/10:547           Cost29
sap       33       2/1/10:548           Cost29
spoke    201      199:10                Cost27
spoke    202      199:17                Cost10
spoke    202      199:18                Cost10
spoke    202      199:19                Cost10
esm-mac  100     Sub3-000102030405    Cost30
=====
*A:Dut-C#
```

## 4.53 applications

### applications

#### Syntax

**applications**

#### Context

[\[Tree\]](#) (show>log applications)

#### Full Context

show log applications

#### Description

This command displays a list of all application names that can be used in event-control and filter commands.

#### Platforms

All

## Output

The following output is an example of log application information.

### Output Example

```
*A:7950 XRS-20# show log applications
=====
Log Event Application Names
=====
Application Name
-----
BGP
...
CHASSIS
...
IGMP
...
LDP
LI
...
MIRROR
...
MPLS
...
OSPF
PIM
...
PORT
...
SYSTEM
...
USER
...
VRTR
...
=====
A:ALA-1#
```

## applications

### Syntax

**applications** [*isa mda-id/esa-vm-id*]

### Context

[\[Tree\]](#) (tools>dump>app-assure>group>ipassist applications)

### Full Context

tools dump application-assurance group ip-identification-assist applications

### Description

This command dumps statistics showing the amount of traffic detected by IP identification assist for supported applications.

## Parameters

### isa mda-id

Specifies the slot and MDA of the ISA in the format *slot/mda*.

Values	
	<i>slot/mda</i>
	<i>slot</i> 1 to 10, depending on chassis model
	<i>mda</i> 1 to 2, depending on chassis model

### isa esa-vm-id

Specifies the ESA and ESA VM in the format *esa-esa-id/vm-id*.

Values	
	<i>esa-esa-id/vm-id</i>
	<i>esa-id</i> 1 to 16
	<i>vm-id</i> 1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

Use the following command to display statistics showing how much traffic is detected by the IP identification assist feature for supported applications.

```
tools dump application-assurance group 1:0 ip-identification-assist applications isa 1/1
```

## Output Example

```
=====
Application-Assurance group 1:0 ip-identification-assist application statistics
=====

isa 1/1
-----
Application Name      Detection              flows                packets              octets
-----
"Apple"              app-filter             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
                    ip-assist             32 (100.0%)         43768 (100.0%)      39252130 (100.0%)
"Apple App Store and iTunes"
                    app-filter             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
                    ip-assist             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
"Apple Music"
                    app-filter             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
                    ip-assist             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
"Apple iCloud"
                    app-filter             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
                    ip-assist             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
"Facebook"
                    app-filter             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
                    ip-assist             84 (100.0%)         90580 (100.0%)      96430386 (100.0%)
"Google"
                    app-filter             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
                    ip-assist             382 (100.0%)        25980 (100.0%)      21150315 (100.0%)
"Google Play Store"
                    app-filter             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
                    ip-assist             0 ( 0.0%)           0 ( 0.0%)           0 ( 0.0%)
```

"Instagram"	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	52 (100.0%)	18714 (100.0%)	18655139 (100.0%)
"Netflix"	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	78 (100.0%)	59059 (100.0%)	52961501 (100.0%)
"Snapchat"	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
"Spotify"	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	85 (100.0%)	35703 (100.0%)	32556052 (100.0%)
"Twitter"	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	38 (100.0%)	20555 (100.0%)	16997835 (100.0%)
"Whats App"	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
"YouTube"	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	6 (100.0%)	27562 (100.0%)	31582683 (100.0%)
-----				
TOTAL (14 applications)	app-filter	0 ( 0.0%)	0 ( 0.0%)	0 ( 0.0%)
	ip-assist	757 (100.0%)	321921 (100.0%)	309586041 (100.0%)
=====				

## 4.54 aps

### aps

#### Syntax

**aps** [*aps-id*] [*detail*]

#### Context

[\[Tree\]](#) (show aps)

#### Full Context

show aps

#### Description

This command displays Automated Protection Switching (APS) information.

#### Parameters

##### *aps-id*

Displays information for the specified APS group ID.

**Values** *aps-group-idaps*: keyword*group-id*: 1 to 128

##### *detail*

Displays detailed APS information.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## Output

See the following output examples:

- [Output Example: show aps \(Working Multi-chassis APS Node\)](#)
- [Output Example: show aps \(Protect MC-APS Node\)](#)
- [Output Fields: show aps](#)

### Output Example: show aps (Working Multi-chassis APS Node)

```
*A:Dut-A# show aps aps-1
=====
APS Group Info
=====
Interface Admin Oper MC-Ctl Work Prot Active Tx/Rx
           State State State Circuit Circuit Circuit K1 Byte
-----
aps-1     Up    Up    N/A    1/5/1  1/9/5  1/5/1  PC-Tx: No-Req
=====
*A:Dut-A#

*A:Dut-A# show aps aps-1 detail
=====
APS Group: aps-1
=====
Description      : APS Group
Group Id         : 1
Admin Status     : Up
Working Circuit  : 1/5/1
Switching-mode   : Uni-1plus1
Revertive-mode   : Non-revertive
Rx K1/K2 byte    : 0x00/0x00 (No-Req on Protect)
Tx K1/K2 byte    : 0x00/0x00 (No-Req on Protect)
Current APS Status : OK
Multi-Chassis APS : No
Neighbor         : 0.0.0.0
Control link state : N/A
Advertise Interval : 1000 msec
APS SF Hold Time  : 6000 msec
Mode mismatch Cnt : 0
PSB failure Cnt  : 0
Hold Time        : 3000 msec
APS SD Hold Time : 9000 msec
Channel mismatch Cnt : 0
FEPL failure Cnt : 0
-----
APS Working Circuit - 1/5/1
-----
Admin Status      : Up
Current APS Status : OK
Last Switchover   : None
Signal Degrade Cnt : 1
Last Switch Cmd   : No Cmd
Tx L-AIS         : None
Oper Status       : Up
No. of Switchovers : 0
Switchover seconds : 0
Signal Failure Cnt : 1
Last Exercise Result : Unknown
-----
APS Protection Circuit - 1/9/5
-----
Admin Status      : Up
Current APS Status : OK
Last Switchover   : None
Signal Degrade Cnt : 1
Last Switch Cmd   : No Cmd
Oper Status       : Up
No. of Switchovers : 0
Switchover seconds : 0
Signal Failure Cnt : 1
Last Exercise Result : Unknown
```

```
Tx L-AIS          : None
=====
*A:Dut-A#
```

**Output Example: show aps (Protect MC-APS Node)**

```
B:Dut-E# show aps
=====
APS Group Info
=====
Interface Admin Oper MC-Ctl Work Prot Active Tx/Rx
           State State State State Circuit Circuit Circuit K1 Byte
-----
aps-20    Up    Up    N/A    3/1/1  3/1/2  3/1/1  PC-Tx: No-Req
=====
B:Dut-E#

B:Dut-E# show aps aps-30 detail
=====
APS Group: aps-30
=====
Description      : APS Group
Group Id         : 30                Active Circuit    : N/A
Admin Status     : Up                Oper Status      : Up
Working Circuit  : N/A                Protection Circuit : 2/2/2
Switching-mode   : Bi-directional    Switching-arch   : 1+1
Revertive-mode   : Non-revertive     Revert-time (min) :
Rx K1/K2 byte    : 0x00/0x05 (No-Req on Protect)
Tx K1/K2 byte    : 0x00/0x05 (No-Req on Protect)
Current APS Status : OK
Multi-Chassis APS : Yes
Neighbor         : 10.1.1.1
Control link state : Up
Advertise Interval : 1000 msec           Hold time         : 3000 msec
Mode mismatch Cnt : 0                Channel mismatch Cnt : 0
PSB failure Cnt  : 0                FEPL failure Cnt  : 1
-----
APS Working Circuit - Neighbor
-----
Admin Status     : N/A                Oper Status      : N/A
Current APS Status : OK                No. of Switchovers : 0
Last Switchover   : None                Switchover seconds : 0
Signal Degrade Cnt : 0                Signal Failure Cnt : 0
Last Switch Cmd   : No Cmd                Last Exercise Result : Unknown
Tx L-AIS         : None
-----
APS Protection Circuit - 2/2/2
-----
Admin Status     : Up                Oper Status      : Up
Current APS Status : OK                No. of Switchovers : 0
Last Switchover   : None                Switchover seconds : 0
Signal Degrade Cnt : 0                Signal Failure Cnt : 0
Last Switch Cmd   : No Cmd                Last Exercise Result : Unknown
Tx L-AIS         : None
=====
B:Dut-E#
```

**Output Fields: show aps**

Table 33: Output Fields: show aps describes output fields for the **show aps** command.



Table 33: Output Fields: show aps

Label	Description
Interface	Specifies the APS interface name (the APS group port).
Admin State	Up — APS is administratively up. Down — APS port is administratively down.
Oper State	Up — APS port is operationally up. Down — APS is operationally down.
MC-CTL State	Specifies the multi-chassis state.
Work Circuit	Specifies the working circuit ID.
Prot Circuit	Specifies the physical port that acts as the protection circuit for this APS group.
Active Circuit	Specifies the active circuit.
Tx/Rx K1 Byte	Displays the value of the SONET/SDH K1 byte received or transmitted on the protection circuit.
Group Id	Displays the APS group name.
Protection Circuit	Displays the physical port that will act as the protection circuit for this APS group.
Switching-mode	Displays the switching mode of the APS group.
Switching-arch	The architecture of the APS group.
Revertive-mode	Displays the revertive mode of the APS group. non-revertive — Traffic remains on the protection line until another switch request is received. revertive — When the condition that caused a switch to the protection line has been cleared the signal is switched back to the working line.
Revert-time	Displays the configured time, in minutes, to wait after the working circuit has become functional again, before making the working circuit active again. If the revertive mode is non-revertive, then this field will be empty.
Rx K1/K2 byte	Displays the value of the SONET/SDH K1/K2 byte received on the interface.
Tx K1/K2 byte	Displays the value of the SONET/SDH K1/K2 byte transmitted on the interface.
Current APS Status	Displays the current APS status.

Label	Description
Mode Mismatch Cnt	Indicates the number of times a conflict occurs between the current local mode and the received K2 mode information.
Channel mismatch Cnt	Indicates the number of mismatches between the transmitted K1 channel and the received K2 channel has been detected.
PSB failure Cnt	Displays a count of Protection Switch Byte (PSB) failure conditions. This condition occurs when either an inconsistent APS byte or an invalid code is detected.
FEPL failure Cnt	Displays a count of far-end protection-line (FEPL) failure conditions. This condition is declared based on receiving SF on the protection line in the K1 byte.
No. of Switchovers	Displays the number of times a switchover has occurred.
Last Switchover	Displays the time stamp of the last switchover.
Switchover seconds	Displays the cumulative Protection Switching Duration (PSD) time in seconds.  For a working channel, this is the cumulative number of seconds that service was carried on the protection line.  For the protection line, this is the cumulative number of seconds that the protection line has been used to carry any working channel traffic. This information is only valid if revertive switching is enabled.
Signal Degrade Cnt	Displays the number of times the signal was degraded.
Signal Failure Cnt	Displays the number of times the signal failed.
Last Switch Cmd	Reports the last switch command that was performed on a circuit.
Last Exercise Result	The result of the last exercise request on a circuit.
Neighbor address	Displays the neighbor IP address.
Advertise Interval	Displays the advertise interval.
Hold time	Displays the hold time.

## aps

### Syntax

**aps** *aps-id* [clear]

**aps mc-aps-signaling** [clear]

**aps mc-aps-ppp** [clear]

## Context

[Tree] (tools>dump aps)

## Full Context

tools dump aps

## Description

This command displays Automated Protection Switching (APS) information.

## Parameters

### *aps-id*

Specifies the APS ID.

**Values**    *aps-group-id*  
aps: keyword  
group-id: 1 to 64

### **clear**

Removes all Automated Protection Switching (APS) operational commands.

### **mc-aps-signaling**

Displays multi-chassis APS signaling information.

### **mc-aps-ppp**

Displays multi-chassis APS PPP information.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## Output

The following output is an example of APS information.

### Output Example

```
*A:AS_SR7_2# tools dump aps aps-33

GrpId = 33, state = Running, mode:cfg/oper = Bi-directional/Bi-directional
revert = 0, workPort: N/A, protPort: 2/1/1, activePort: working
rxK1 = 0x0 (No-Req on Protect), physRxK1 = 0x0, rxK2 = 0x5
txK1 = 0x0 (No-Req on Protect), physTxK1 = 0x0, txK2 = 0x5
K1ReqToBeTxed = 0x0, K1ChanToBeTxed = 0x0, lastRxReq = 0xc
MC-APS Nbr = 10.100.100.1 (Up), advIntvl = 10, hold = 30
workPort: status = OK, Tx-Lais = None, sdCnt = 1, sfCnt = 1
  numSwitched = 1, switchSecs = 0, lastSwitched = 07/25/2007 08:00:12
  disCntTime = , alarms = , switchCmd = No Cmd
protPort: status = OK, Tx-Lais = None, sdCnt = 1, sfCnt = 0
  numSwitched = 1, switchSecs = 0, lastSwitched = 07/25/2007 08:03:39
  disCntTime = , alarms = , switchCmd = No Cmd
GrpStatus: OK, mmCnt = 1, cmCnt = 1, psbfCnt = 1, feplfCnt = 2
LocalSwitchCmd: priority = No-Req, portNum = 0
RemoteSwitchCmd: priority = No-Req, portNum = 0
Running Timers = mcAdvIntvl mcHold
processFlag = apsFailures = , sonet = Y
```

```

DebugInfo: dmEv = 0, dmClrEv = 0, amEv = 1, amClrEv = 1
           cmEv = 1, cmClrEv = 1, psbfEv = 1, psbfClrEv = 1
           feplfEv = 2, feplfClrEv = 2, wtrEv = 0, psbfDetectEv = 0
           wSdEv = 1, wSfEv = 2, pSdEv = 1, pSfEv = 1
           portStatusEv = 8, rxK1Ev = 9, txLaisEv = 2, lastEvName = FeplClr
           CtlUpEv = 3, CtlDnEv = 2, wAct = 0, wDeAct = 0
Seq      Event TxK1/K2 RxK1/K2 Dir Active Time
====
000      ProtAdd 0xc005 0x0000 Tx--> Work 497 02:18:10.590
001      RxKByte 0xc005 0x6dea Rx<-- Work 497 02:20:14.820
002      RxKByte 0xc005 0xc005 Rx<-- Work 497 02:21:30.970
003      RxKByte 0xc005 0x2005 Rx<-- Work 497 02:21:36.530
004      pSFClr 0x0005 0x2005 Tx--> Work 497 02:21:40.590
005      RxKByte 0x0005 0x0005 Rx<-- Work 497 02:21:40.600
006      RxKByte 0x0005 0xc115 Rx<-- Work 497 02:25:22.840
007      RxKByte 0x2115 0xc115 Tx--> Prot 497 02:25:22.840
008      RxKByte 0x2115 0xa115 Rx<-- Prot 000 00:00:47.070
009      RxKByte 0x2115 0x1115 Rx<-- Prot 000 00:00:47.560
010      RxKByte 0x2115 0xc005 Rx<-- Prot 000 00:00:57.010
011      RxKByte 0x2005 0xc005 Tx--> Work 000 00:00:57.010
012      RxKByte 0x2005 0x0005 Rx<-- Work 000 00:01:06.170
013      RxKByte 0x0005 0x0005 Tx--> Work 000 00:01:06.170
    
```

### Output Example

```

:AS_SR7_1# tools dump aps mc-aps-ppp

pppmMcsModStarted = Yes
pppmMcsDbgDoSync = Yes
pppmMcsApsGrpHaAuditDone = Yes
pppmMcsPostHaSyncedApsGrpId = 47
pppmMcsMcApsChanCnt = 1280

pppmMcsDbgRxPktCnt = 2560
pppmMcsDbgRxPktNotProcessedCnt = 0
pppmMcsDbgRxPktInvalidCnt = 0
pppmMcsDbgInconsistentRxPktDropCnt = 0
pppmMcsDbgInconsistentTxPktDropCnt = 1176
pppmMcsDbgTxPktNotSentCnt = 0
pppmMcsDbgTxPktSentCnt = 25
pppmMcsDbgEvtDropCnt = 0
pppmMcsDbgMemAllocErrCnt = 0
pppmMcsDbgReTxCnt = 0
pppmMcsDbgReTxExpCnt = 0
pppmMcsDbgReReqCnt = 0

pppmMcsStateAckQueueCnt (curr/peek) = 0/130
pppmMcsStateReqQueueCnt (curr/peek) = 0/1280
pppmMcsStateReReqQueueCnt (curr/peek) = 0/256
pppmMcsStateTxQueueCnt (curr/peek) = 0/512
pppmMcsStateReTxQueueCnt (curr/peek) = 0/130

MC-APS Peer Info :
-----

Grp 13 Addr 10.100.100.2 - Up
Grp 20 Addr 10.100.100.2 - Up
Grp 35 Addr 10.100.100.2 - Up
Grp 43 Addr 10.100.100.2 - Up
Grp 47 Addr 10.100.100.2 - Up

Number of ppmMcs Evt Msgs dispatched:
ctl_link_state : 0
    
```

```
ctl_link_up_tmr : 0  
ctl_link_down_tmr : 0  
ha_audit_done : 0
```

### Output Example

```
*A:eth_aps_sr7# tools dump aps mc-aps-signaling
```

```
MC-APS Control Debug Counters :  
-----  
Ctl Pkt Rx = 0  
Invalid Rx Ctl Pkt = 0  
Incompatible Rx Ctl Pkt = 0  
Nbr not Rx Ctl Pkt = 0  
Invalid Rx Ctl Pkt Tlv = 0  
Ctl Pkt Rx-ed before HaReady = 0  
Not sent Tx Ctl Pkt = 0  
  
MC-APS-LAG Debug Counters :  
-----  
Ctl Pkt Rx from IOM          = 0  
  
Not processed Rx Ctl Pkt    = 0  
Invalid Rx Ctl Pkt          = 0  
Incompatible Rx Ctl Pkt     = 0  
Rx Ctl Pkt queueing failed = 0  
  
Ctl Pkt Tx (direct)         = 0  
Ctl Pkt Tx (UDP socket)     = 0  
Not sent Tx Ctl Pkt        = 0  
  
Route Update                = 0  
Matched Route Update        = 0  
  
Msg Buf Alloc Failed        = 0  
  
MC-APS-LAG NbrRoute Entries :  
-----  
NbrAddr 10.1.1.1 NextHopAddr ::  
EgressIfIndex = 0  
EgressPortId = Unknown  
app refCnt = 1  
refCntTotal = 1
```

## aps

### Syntax

**aps**

### Context

[\[Tree\]](#) (tools>perform aps)

### Full Context

tools perform aps

## Description

Commands in this context perform Automated Protection Switching (APS) operations.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## 4.55 arbiter-stats

### arbiter-stats

#### Syntax

**arbiter-stats**

#### Context

[\[Tree\]](#) (clear>qos arbiter-stats)

#### Full Context

clear qos arbiter-stats

#### Description

Commands in this context clear arbiter statistics.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

### arbiter-stats

#### Syntax

**arbiter-stats**

#### Context

[\[Tree\]](#) (monitor>qos arbiter-stats)

#### Full Context

monitor qos arbiter-stats

#### Description

Commands in this context configure monitor functionality for arbiter statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## arbiter-stats

### Syntax

**arbiter-stats**

### Context

[\[Tree\]](#) (show>qos arbiter-stats)

### Full Context

show qos arbiter-stats

### Description

Commands in this context display arbiter statistics information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## 4.56 area

## area

### Syntax

**area** [*area-id*] [**detail**] [**lfa**]

**area** [*area-id*] [**detail**] **lfa flex-algo** *flex-algo-id*

**area** [*area-id*] [**detail**] **lfa flex-algo all**

### Context

[\[Tree\]](#) (show>router>ospf area)

### Full Context

show router ospf area

### Description

This command displays configuration information about all areas or the specified area.

## Parameters

### **area-id**

Displays the OSPF area ID expressed in dotted decimal notation or as a 32-bit decimal integer.

**Values** ip-address — a.b.c.d  
 area — 0 to 4294967295

### **flex-algo-id**

Displays the flexible algorithm identifier.

**Values** 128 to 255

### **detail**

Displays detailed operational and statistical information about the specified area.

### **lfa**

Displays Loop-Free Alternate (LFA) next-hop information. This information corresponds to the backup next hops for IP links and nodes written in RTM by the base LFA feature.

### **flex-algo**

Displays OSPFv2 information for the specified algorithm identifier.

### **flex-algo all**

Displays OSPFv2 information for all flexible algorithms.

## Platforms

All

## Output

The following outputs are examples of OSPF area outputs.

[Table 34: OSPF Area Output Fields](#) describes the standard and detailed command output fields for an OSPF area.

*Table 34: OSPF Area Output Fields*

Label	Description
Area Id	A 32 bit integer uniquely identifying an area.
Type	NSSA — This area is configured as an NSSA area. Standard — This area is configured as a standard area (not NSSA or Stub). Stub — This area is configured as a stub area.
SPF Runs	The number of times that the intra-area route table has been calculated using this area's link state database.
LSA Count	The total number of link-state advertisements in this area's link state database, excluding AS External LSAs.



Label	Description
LSA Cksum Sum	The 32-bit unsigned sum of the link-state database advertisements LS checksums contained in this area's link state database. This checksum excludes AS External LSAs (type-5).
No. of OSPF Areas	The number of areas configured on the router.
Virtual Links	The number of virtual links configured through this transit area.
Active IFs	The active number of interfaces configured in this area.
Area Bdr Rtrs	The total number of ABRs reachable within this area.
AS Bdr Rtrs	The total number of ASBRs reachable within this area.
Last SPF Run	The time when the last intra-area SPF was run on this area.
Router LSAs	The total number of router LSAs in this area.
Network LSAs	The total number of network LSAs in this area.
Summary LSAs	The summary of LSAs in this area.
Asbr-summ LSAs	The summary of ASBR LSAs in this area.
Nssa-ext LSAs	The total number of NSSA-EXT LSAs in this area.
Area opaque LSAs	The total number of opaque LSAs in this area.
Total Nbrs	The total number of neighbors in this area.
Total IFs	The total number of interfaces configured in this area.
Total LSAs	The sum of LSAs in this area excluding autonomous system external LSAs.
Blackhole Range	False — No blackhole route is installed for aggregates configured in this area. True — A lowest priority blackhole route is installed for aggregates configured in this area.
Export Database	False — The extended TE Database (TE-DB) is not exported in this area. True — The extended TE Database (TE-DB) is exported in this area.
Export Policies	The export policies configured in this area.
Export Filtrd LSAs	The total number of LSAs filtered by area export policies.
Import Policies	The import policies configured in this area.
Import Filtrd LSAs	The total number of LSAs filtered by area import policies.

**Output Example: show router ospf area detail**

```
A:SetupCLI# show router ospf 0 area detail
=====
Rtr Base OSPFv2 Instance 0 Areas (detail)
=====
-----
Area Id: 0.0.0.0
-----
Area Id      : 0.0.0.0          Type      : Standard
Key Rollover Int.: 10         LFA       : Include
Virtual Links : 0             Total Nbrs : 0
Active IFs    : 0             Total IFs  : 2
Area Bdr Rtrs : 0             AS Bdr Rtrs : 0
SPF Runs     : 0             Last SPF Run : Never
Router LSAs  : 0             Network LSAs : 0
Summary LSAs : 0             Asbr-summ LSAs : 0
Nssa ext LSAs : 0           Area opaque LSAs : 1
Total LSAs   : 1             LSA Cksum Sum : 0xd6af
Blackhole Range : False      Unknown LSAs : 0
Export Database : False
Export Policies : None
Export Fltrd LSAs: 0
Import Policies : None
Import Fltrd LSAs: 0
-----
Area Id: 1.1.1.1
-----
Area Id      : 1.1.1.1          Type      : Stub
Default Cost : 16777215       Import Summary : Send Summary
Key Rollover Int.: 10         LFA       : Exclude
Virtual Links : 0             Total Nbrs : 0
Active IFs    : 0             Total IFs  : 1
Area Bdr Rtrs : 0             AS Bdr Rtrs : 0
SPF Runs     : 0             Last SPF Run : Never
Router LSAs  : 0             Network LSAs : 0
Summary LSAs : 0             Asbr-summ LSAs : 0
Nssa ext LSAs : 0           Area opaque LSAs : 1
Total LSAs   : 1             LSA Cksum Sum : 0xf493
Blackhole Range : False      Unknown LSAs : 0
Export database : False
Export Policies : None
Export Fltrd LSAs: 0
Import Policies : None
Import Fltrd LSAs: 0
-----
Area Id: 2.2.2.2
-----
Area Id      : 2.2.2.2          Type      : Standard
Key Rollover Int.: 10         LFA       : Include
Virtual Links : 1             Total Nbrs : 0
Active IFs    : 0             Total IFs  : 0
Area Bdr Rtrs : 0             AS Bdr Rtrs : 0
SPF Runs     : 0             Last SPF Run : Never
Router LSAs  : 0             Network LSAs : 0
Summary LSAs : 0             Asbr-summ LSAs : 0
Nssa ext LSAs : 0           Area opaque LSAs : 1
Total LSAs   : 1             LSA Cksum Sum : 0xd6af
Blackhole Range : True       Unknown LSAs : 0
Export database : False
Export Policies : None
Export Fltrd LSAs: 0
Import Policies : None
Import Fltrd LSAs: 0
```

```

=====
A:SetupCLI#
*A:Dut-B# show router ospf area 0.0.0.0 detail
=====
Rtr Base OSPFv2 Instance 0 Area 0.0.0.0 (detail)
=====
-----
Configuration
-----
Area Id          : 0.0.0.0          Type          : Standard
-----
Statistics
-----
Virtual Links    : 0                Total Nbrs    : 2
Active IFs       : 3                Total IFs     : 3
Area Bdr Rtrs   : 0                AS Bdr Rtrs  : 0
SPF Runs        : 7                Last SPF Run  : 10/26/2006 10:09:18
Router LSAs     : 3                Network LSAs  : 3
Summary LSAs    : 0                Asbr-summ LSAs : 0
Nssa ext LSAs   : 0                Area opaque LSAs : 3
Total LSAs      : 9                LSA Cksm Sum  : 0x28b62
Blackhole Range : True                Unknown LSAs  : 0
Export database  : False
Export Policies  : None
Export Fltrd LSAs: 0
Import Policies  : None
Import Fltrd LSAs: 0
=====

*A:Dut-B# show router ospf 0 area 0.0.0.0 lfa
=====
Rtr Base OSPFv2 Instance 0 Path Table
=====
-----
Node          Interface          Nexthop
              LFA Interface      LFA Nexthop
-----
10.20.1.1     to_Dut-A1           10.20.1.1
              to_Dut-C1           10.20.1.3
10.20.1.3     to_Dut-C1           10.20.1.3
              to_Dut-A1           10.20.1.1
10.20.1.4     to_Dut-D1           10.20.1.4
10.20.1.6     to_Dut-D1           10.20.1.4
              to_Dut-C1           10.20.1.3
=====

*A:Dut-B#

*A:Dut-B# show router ospf 0 area 0.0.0.0 lfa detail
=====
Rtr Base OSPFv2 Instance 0 Path Table (detail)
=====
OSPF Area   : 0.0.0.0
-----
Node          : 10.20.1.1      Metric          : 10
Interface     : to_Dut-A1      Nexthop         : 10.20.1.1
LFA Interface  : to_Dut-C1      LFA Metric      : 20
LFA type      : linkProtection  LFA Nexthop    : 10.20.1.3

Node          : 10.20.1.3      Metric          : 10
Interface     : to_Dut-C1      Nexthop         : 10.20.1.3
LFA Interface  : to_Dut-A1      LFA Metric      : 20
LFA type      : linkProtection  LFA Nexthop    : 10.20.1.1
    
```

```

Node           : 10.20.1.4      Metric           : 10
Interface      : to_Dut-D1      Nexthop         : 10.20.1.4

Node           : 10.20.1.6      Metric           : 20
Interface      : to_Dut-D1      Nexthop         : 10.20.1.4
LFA Interface  : to_Dut-C1      LFA Metric      : 30
LFA type       : nodeProtection LFA Nexthop       : 10.20.1.3
    
```

=====  
 \*A:Dut-B#

### Output Example: show router ospf area lfa flex-algo

```

*A:Dut-C# show router ospf area lfa flex-algo 128
=====
Rtr Base OSPFv2 Instance 0 Flex-Algo 128 Path Table
=====
10.20.1.2      C1/1/5-B1/1/8      10.20.1.2
                C1/1/7-E1/1/1      10.20.1.5
10.20.1.5      C1/1/7-E1/1/1      10.20.1.5
                C1/1/5-B1/1/8      10.20.1.2
=====
*A:Dut-C#
    
```

## area

### Syntax

**area** [*area-id*] [*detail*] [*lfa*]

### Context

[\[Tree\]](#) (show>router>ospf3 area)

### Full Context

show router ospf3 area

### Description

This command displays configuration information about all areas or the specified area. When detail is specified operational and statistical information will be displayed.

### Parameters

#### *area-id*

Displays the OSPF area ID expressed in dotted decimal notation or as a 32-bit decimal integer.

**Values** ip-address — a.b.c.d  
 area — 0 to 4294967295

#### **detail**

Displays detailed information about the specified area.

**lfa**

Displays Loop-Free Alternate (LFA) next-hop information. This information corresponds to the backup next hops for IP links and nodes written in RTM by the base LFA feature.

**Platforms**

All

**Output**

OSPF Area Output

The following table describes the standard and detailed command output fields for an OSPF area.

*Table 35: OSPF Area Output Fields*

Label	Description
Area Id	A 32 bit integer uniquely identifying an area.
Type	NSSA — This area is configured as an NSSA area. Standard — This area is configured as a standard area (not NSSA or Stub). Stub — This area is configured as a stub area.
SPF Runs	The number of times that the intra-area route table has been calculated using this area's link state database.
LSA Count	The total number of link-state advertisements in this area's link state database, excluding AS External LSAs.
LSA Cksum Sum	The 32-bit unsigned sum of the link-state database advertisements LS checksums contained in this area's link state database. This checksum excludes AS External LSAs (type-5).
No. of OSPF Areas	The number of areas configured on the router.
Virtual Links	The number of virtual links configured through this transit area.
Active IFs	The active number of interfaces configured in this area.
Area Bdr Rtrs	The total number of ABRs reachable within this area.
AS Bdr Rtrs	The total number of ASBRs reachable within this area.
Last SPF Run	The time when the last intra-area SPF was run on this area.
Router LSAs	The total number of router LSAs in this area.
Network LSAs	The total number of network LSAs in this area.
Summary LSAs	The summary of LSAs in this area.
Asbr-summ LSAs	The summary of ASBR LSAs in this area.

Label	Description
Nssa-ext LSAs	The total number of NSSA-EXT LSAs in this area.
Area opaque LSAs	The total number of opaque LSAs in this area.
Total Nbrs	The total number of neighbors in this area.
Total IFs	The total number of interfaces configured in this area.
Total LSAs	The sum of LSAs in this area excluding autonomous system external LSAs.
Blackhole Range	False — No blackhole route is installed for aggregates configured in this area.  True — A lowest priority blackhole route is installed for aggregates configured in this area.
Export Database	False — The extended TE Database (TE-DB) is not exported in this area.  True — The extended TE Database (TE-DB) is exported in this area.
Export Policies	The export policies configured in this area.
Export Fltrd LSAs	The total number of LSAs filtered by area export policies.
Import Policies	The import policies configured in this area.
Import Fltrd LSAs	The total number of LSAs filtered by area import policies.

### Output Example

```
A:SetupCLI# show router ospf 0 area detail
=====
Rtr Base OSPFv2 Instance 0 Areas (detail)
=====
-----
Area Id: 0.0.0.0
-----
-----
Area Id       : 0.0.0.0           Type           : Standard
Key Rollover Int.: 10           LFA            : Include
Virtual Links  : 0               Total Nbrs     : 0
Active IFs     : 0               Total IFs      : 2
Area Bdr Rtrs  : 0               AS Bdr Rtrs    : 0
SPF Runs      : 0               Last SPF Run   : Never
Router LSAs   : 0               Network LSAs   : 0
Summary LSAs  : 0               Asbr-summ LSAs : 0
Nssa ext LSAs : 0               Area opaque LSAs : 1
Total LSAs    : 1               LSA Cksum Sum  : 0xd6af
Blackhole Range : False          Unknown LSAs   : 0
Export Database : False
Export Policies : None
Export Fltrd LSAs: 0
Import Policies : None
Import Fltrd LSAs: 0
-----
```

```

Area Id: 1.1.1.1
-----
Area Id      : 1.1.1.1          Type           : Stub
Default Cost : 16777215        Import Summary : Send Summary
Key Rollover Int.: 10         LFA           : Exclude
Virtual Links : 0              Total Nbrs    : 0
Active IFs   : 0              Total IFs     : 1
Area Bdr Rtrs : 0             AS Bdr Rtrs  : 0
SPF Runs     : 0              Last SPF Run  : Never
Router LSAs  : 0              Network LSAs  : 0
Summary LSAs : 0              Asbr-summ LSAs : 0
Nssa ext LSAs : 0            Area opaque LSAs : 1
Total LSAs   : 1              LSA Cksum Sum : 0xf493
Blackhole Range : False      Unknown LSAs  : 0
Export database : False
Export Policies : None
Export Fltrd LSAs: 0
Import Policies : None
Import Fltrd LSAs: 0
-----

Area Id: 2.2.2.2
-----
Area Id      : 2.2.2.2          Type           : Standard
Key Rollover Int.: 10         LFA           : Include
Virtual Links : 1              Total Nbrs    : 0
Active IFs   : 0              Total IFs     : 0
Area Bdr Rtrs : 0             AS Bdr Rtrs  : 0
SPF Runs     : 0              Last SPF Run  : Never
Router LSAs  : 0              Network LSAs  : 0
Summary LSAs : 0              Asbr-summ LSAs : 0
Nssa ext LSAs : 0            Area opaque LSAs : 1
Total LSAs   : 1              LSA Cksum Sum : 0xd6af
Blackhole Range : True        Unknown LSAs  : 0
Export database : False
Export Policies : None
Export Fltrd LSAs: 0
Import Policies : None
Import Fltrd LSAs: 0
=====
A:SetupCLI#

*A:Dut-B# show router ospf area 0.0.0.0 detail
=====
Rtr Base OSPFv2 Instance 0 Area 0.0.0.0 (detail)
=====
-----
Configuration
-----
Area Id      : 0.0.0.0          Type           : Standard
-----
Statistics
-----
Virtual Links : 0              Total Nbrs    : 2
Active IFs   : 3              Total IFs     : 3
Area Bdr Rtrs : 0             AS Bdr Rtrs  : 0
SPF Runs     : 7              Last SPF Run  : 10/26/2006 10:09:18
Router LSAs  : 3              Network LSAs  : 3
Summary LSAs : 0              Asbr-summ LSAs : 0
Nssa ext LSAs : 0            Area opaque LSAs : 3
Total LSAs   : 9              LSA Cksum Sum : 0x28b62
Blackhole Range : True        Unknown LSAs  : 0
Export database : False
Export Policies : None
Export Fltrd LSAs: 0
    
```

```

Import Policies : None
Import Fltrd LSAs: 0
=====

*A:Dut-B# show router ospf 0 area 0.0.0.0 lfa
=====
Rtr Base OSPFv2 Instance 0 Path Table
=====
Node                Interface                Nexthop
                   LFA Interface            LFA Nexthop
-----
10.20.1.1           to_Dut-A1                10.20.1.1
                   to_Dut-C1                10.20.1.3
10.20.1.3           to_Dut-C1                10.20.1.3
                   to_Dut-A1                10.20.1.1
10.20.1.4           to_Dut-D1                10.20.1.4
10.20.1.6           to_Dut-D1                10.20.1.4
                   to_Dut-C1                10.20.1.3
=====

*A:Dut-B#

*A:Dut-B# show router ospf 0 area 0.0.0.0 lfa detail
=====
Rtr Base OSPFv2 Instance 0 Path Table (detail)
=====
OSPF Area : 0.0.0.0
-----
Node                : 10.20.1.1           Metric                : 10
Interface           : to_Dut-A1            Nexthop               : 10.20.1.1
LFA Interface       : to_Dut-C1            LFA Metric            : 20
LFA type            : linkProtection       LFA Nexthop           : 10.20.1.3

Node                : 10.20.1.3           Metric                : 10
Interface           : to_Dut-C1            Nexthop               : 10.20.1.3
LFA Interface       : to_Dut-A1            LFA Metric            : 20
LFA type            : linkProtection       LFA Nexthop           : 10.20.1.1

Node                : 10.20.1.4           Metric                : 10
Interface           : to_Dut-D1            Nexthop               : 10.20.1.4

Node                : 10.20.1.6           Metric                : 20
Interface           : to_Dut-D1            Nexthop               : 10.20.1.4
LFA Interface       : to_Dut-C1            LFA Metric            : 30
LFA type            : nodeProtection       LFA Nexthop           : 10.20.1.3
=====

*A:Dut-B#
    
```

## 4.57 arp

### arp

#### Syntax

```

arp {[ip-address] | [mac ieee-address] | [sap sap-id] | [interface ip-int-name] | [sdp sdp-id:vc-id] |
    [summary] }
    
```



## Context

[\[Tree\]](#) (show>service>id arp)

## Full Context

show service id arp

## Description

This command displays the ARP cache entries for this service.

## Parameters

### *ip-address*

Specifies the IP address in IP address dotted decimal notation.

### *ieee-mac-address*

Specifies the 48-bit MAC address in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

### *sap-id*

Specifies a Service Access Point (SAP) within a service.

### *ip-int-name*

Specifies the name of the IP interface. Interface names can be from 1 to 32 alphanumeric characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed between double quotes.

### *sdp-id*

Specifies the SDP identifier. Allowed values are integers in the range of 1 and 17407 for existing SDPs.

### *vc-id*

Specifies the virtual circuit identifier.

**Values** 1 to 4294967295

## Platforms

All

## Output

The following output is an example of service ID information. [Table 36: Service-ID ARP Field Descriptions](#) describes the output fields.

### Output Example

```
A:ALA-A# show service id 100 base
=====
ARP Table
=====
IP Address      MAC Address      Type   Age      Interface      Port
-----
10.1.0.1        00:00:66:66:66:01 Other   00h00m00s ies-10-101.1.0.1 1/1/4
239.1.1.2       00:00:5e:00:01:64 Other   00h00m00s ies-10-239.1.1.2 1/1/3
```

```

239.1.1.201    00:00:22:2e:a5:61 Static  00h00m00s ies-10-239.1.1.2 1/1/3
239.1.1.202    00:00:22:2e:a5:62 Static  00h00m00s ies-10-239.1.1.2 1/1/3
=====
A:ALA-A#
    
```

Table 36: Service-ID ARP Field Descriptions

Label	Description
IP Address	Specifies the IP address of the ARP cache entry.
MAC Address	Specifies the MAC address associated with the IP address.
Type	Other — Learned through normal ARP queries. Static — Configured by <b>static-arp</b> commands. Managed — Learned from DHCP snooping or configured by <b>host</b> commands.
Age	Indicates age of the ARP entry.
Interface	Indicates the name of the IP interface.
Port	Indicates the port upon which the entry was learned.

## arp

### Syntax

**arp** {all | *ip-address*}

**arp interface** {*ip-int-name* | *ip-address*}

### Context

[\[Tree\]](#) (clear>router arp)

### Full Context

clear router arp

### Description

This command clears all or specific ARP entries.

The scope of ARP cache entries cleared depends on the command line options specified.

### Parameters

**all**

Clears all ARP cache entries.

***ip-address***

Clears the ARP cache entry for the specified IP address.

**Values**            ipv4-address: a.b.c.d

***ip-int-name***

Clears all ARP cache entries for the IP interface with the specified name, up to 32 characters.

***ip-address***

Clears all ARP cache entries for the specified IP interface with the specified IP address.

**Values**            ipv4-address: a.b.c.d

**Platforms**

All

arp

**Syntax**

arp

**Context**

[\[Tree\]](#) (clear>service>id arp)

**Full Context**

clear service id arp

**Description**

This command clears all ARP entries. This command is only valid for Ipipe and VPRN services.

**Platforms**

All

arp

**Syntax**

arp *[[ip-int-name | ip-address[/mask] | mac ieee-mac-address | summary]] [arp-type]*

**Context**

[\[Tree\]](#) (show>router arp)

**Full Context**

show router arp

## Description

This command displays the router ARP table sorted by IP address. If no command line options are specified, all ARP entries are displayed.

## Parameters

### *ip-int-name*

Only displays ARP entries associated with the specified IP interface name.

### *ip-address[/mask]*

Only displays ARP entries associated with the specified IP address and mask.

### *ieee-mac-address*

Only displays ARP entries associated with the specified MAC address.

### *summary*

Displays an abbreviate list of ARP entries.

### *arp-type*

Only displays ARP information associated with the keyword.

**Values** local, dynamic, static, managed

## Platforms

All

## Output

**ARP Table Output** — The following output is an example of router ARP table information, and [Table 37: ARP Fields](#) describes the ARP table output fields.

### Output Example

```
*B:7710-Red-RR# show router arp
=====
ARP Table (Router: Base)
=====
IP Address      MAC Address      Expiry      Type      Interface
-----
10.20.1.24      00:16:4d:23:91:b8 00h00m00s 0th      system
10.10.4.11      00:03:fa:00:d0:c9 00h57m03s Dyn[I]    to-core-sr1
10.10.4.24      00:03:fa:41:8d:20 00h00m00s 0th[I]    to-core-sr1
-----
No. of ARP Entries: 3
=====

A:ALA-A# show router ARP 10.10.0.3
=====
ARP Table
=====
IP Address      MAC Address      Expiry      Type      Interface
-----
10.10.0.3      04:5d:ff:00:00:00 00:00:00 0th      system
=====
A:ALA-A#
```

```
A:ALA-A# show router ARP to-ser1
=====
ARP Table
=====
IP Address      MAC Address      Expiry      Type Interface
-----
10.10.13.1      04:5b:01:01:00:02 03:53:09    Dyn to-ser1
=====
A:ALA-A#
```

Table 37: ARP Fields

Label	Description
IP Address	The IP address of the ARP entry
MAC Address	The MAC address of the ARP entry
Expiry	The age of the ARP entry
Type	Dyn — the ARP entry is a dynamic ARP entry Inv — the ARP entry is an inactive static ARP entry (invalid) Oth — the ARP entry is a local or system ARP entry Sta — the ARP entry is an active static ARP entry
*Man	The ARP entry is a managed ARP entry
Int	The ARP entry is an internal ARP entry
[!]	The ARP entry is in use
Interface	The IP interface name associated with the ARP entry
No. of ARP Entries	The number of ARP entries displayed in the list

## 4.58 arp-host

### arp-host

#### Syntax

```
arp-host [wholesaler service-id] {[sap sap-id | interface interface-name | ip-address ip-address[/mask] |
    mac ieee-address | {[ port port-id] [no-inter-dest-id | inter-dest-id inter-dest-id]]} [detail]
arp-host statistics [sap sap-id | interface interface-name]
arp-host summary {[interface interface-name | saps ]
```

#### Context

[\[Tree\]](#) (show>service>id arp-host)

## Full Context

show service id arp-host

## Description

This command displays ARP host related information.

## Parameters

### *service-id*

The VPRN service ID of the wholesaler. When specified in this context, SAP, SDP, interface, IP address and MAC parameters are ignored.

**Values** 1 to 2148007980, *svc-name: 64 chars max*

### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

### *interface-name*

Displays information for the specified IP interface. 32 characters maximum.

### *ip-address[/mask]*

Displays information associated with the specified IP address.

**Values** ip-address: a.b.c.d.  
mask: 1 to 32

### *ieee-address*

Specifies the MAC address.

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

### *port-id*

Specifies the port ID.

**Values** slot, mda, port

### *no-inter-dest-id*

Displays the information about no intermediate destination ID.

### *inter-dest-id*

Indicates the intermediate destination identifier received from either the DHCP or the RADIUS server or the local user database. 32 characters maximum

### *detail*

Displays detailed information.

### *statistics*

Displays ARP host statistics.

### *summary*

Displays summary information.

### *saps*

Displays SAP ARP host related information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example ARP host information for specified service IDs.

### Output Example

```
*A:Dut-C# show service id 2 arp-host
=====
ARP host table, service 2
=====
IP Address      Mac Address      Sap Id           Remaining      MC
                  Time                               Stdby
-----
128.128.1.2    00:80:00:00:00:01 2/1/5:2         00h04m41s
128.128.1.3    00:80:00:00:00:02 2/1/5:2         00h04m42s
128.128.1.4    00:80:00:00:00:03 2/1/5:2         00h04m43s
128.128.1.5    00:80:00:00:00:04 2/1/5:2         00h04m44s
128.128.1.6    00:80:00:00:00:05 2/1/5:2         00h04m45s
128.128.1.7    00:80:00:00:00:06 2/1/5:2         00h04m46s
128.128.1.8    00:80:00:00:00:07 2/1/5:2         00h04m47s
128.128.1.9    00:80:00:00:00:08 2/1/5:2         00h04m48s
128.128.1.10   00:80:00:00:00:09 2/1/5:2         00h04m49s
128.128.1.11   00:80:00:00:00:0a 2/1/5:2         00h04m50s
-----
Number of ARP hosts : 10
=====
*A:Dut-C#

*A:Dut-C# show service id 2 arp-host ip-address 128.128.1.2 detail
=====
ARP hosts for service 2
=====
Service ID      : 2
IP Address      : 128.128.1.2
MAC Address     : 00:80:00:00:00:01
SAP             : 2/1/5:2
Remaining Time  : 00h04m58s

Sub-Ident       : "alu_1_2"
Sub-Profile-String : ""
SLA-Profile-String : ""
App-Profile-String : ""
ARP host ANCP-String : ""
ARP host Int Dest Id : ""

RADIUS-User-Name : "128.128.1.2"

Session Timeout (s) : 301
Start Time         : 02/09/2009 16:35:07
Last Auth         : 02/09/2009 16:36:34
Last Refresh      : 02/09/2009 16:36:38
Persistence Key   : N/A

Subscriber Host Limit Overrides
ipv4-arp         : 1
ipv4-dhcp        : 1
ipv4-ppp         : 1
ipv4-overall     : 1
ipv6-pd-ipoe-dhcp : 1
```

```
ipv6-pd-ppp-dhcp      : 1
ipv6-pd-overall       : 1
ipv6-wan-ipoe-dhcp    : 1
ipv6-wan-ipoe-slaac   : 1
ipv6-wan-ppp-dhcp     : 1
ipv6-wan-ppp-slaac    : 1
ipv6-wan-overall      : 1
ipv6-overall          : 1
lac-overall           : 1
overall               : 1
SLA Profile Instance Host Limit Overrides
ipv4-arp              : 1
ipv4-dhcp             : 1
ipv4-ppp              : 1
ipv4-overall          : 1
ipv6-pd-ipoe-dhcp     : 1
ipv6-pd-ppp-dhcp     : 1
ipv6-pd-overall       : 1
ipv6-wan-ipoe-dhcp    : 1
ipv6-wan-ipoe-slaac   : 1
ipv6-wan-ppp-dhcp     : 1
ipv6-wan-ppp-slaac    : 1
ipv6-wan-overall      : 1
ipv6-overall          : 1
lac-overall           : 1
overall               : 1
Subscriber Session Limit Overrides
ipoe                  : 1
pppoe-local          : 1
pppoe-lac             : 1
pppoe-overall        : 1
l2tp-lns              : 1
l2tp-lts              : 1
l2tp-overall         : 1
overall              : 1
SLA Profile Instance Session Limit Overrides
ipoe                  : 1
pppoe-local          : 1
pppoe-lac             : 1
pppoe-overall        : 1
l2tp-lns              : 1
l2tp-lts              : 1
l2tp-overall         : 1
overall              : 1
-----
Number of ARP hosts : 1
=====
*A:Dut-C#

*A:Dut-C# show service id 2 arp-host statistics
=====
ARP host statistics
=====
Num Active Hosts      : 20
Received Triggers     : 70
Ignored Triggers      : 10
Ignored Triggers (overload) : 0
SHCV Checks Forced    : 0
Hosts Created         : 20
Hosts Updated         : 40
Hosts Deleted         : 0
Authentication Requests Sent : 40
=====
```



```
*A:Dut-C#

*A:Dut-C# show service id 2 arp-host summary
=====
ARP host Summary, service 2
=====
Sap                Used          Provided      Admin State
-----
sap:2/1/5:2        20           8000          inService
-----
Number of SAPs : 1
-----
*A:Dut-C#
```

**Table 38: Service ARP Host Field Descriptions** describes service ARP host information.

*Table 38: Service ARP Host Field Descriptions*

Field	Description
IP Address	The IP address
Mac Address	The MAC address of the this ARP host
Sap Id	The service SAP ID
Remaining Time	The remaining time
MC Stdbby	The MC standby
Number of ARP hosts	The total number of ARP hosts
Service ID	The service identifier
Sub-Ident	The name of the subscriber identification policy
Sub-Profile-String	The name of the subscriber profile
SLA-Profile-String	The name of the SLA profile
App-Profile-String	The application profile string
ARP host ANCP-String	The name of the ARP host
ARP host Int Dest Id	The ARP host internal destination ID
RADIUS-User-Name	The RADIUS user name
Session Timeout (s)	The session timeout value
Start Time	The start time
Last Auth	The date and time of the last authentication
Last Refresh	The date and time of the last refresh

Field	Description
Persistence Key	The key value that can be used to track this ARP host in the persistence file.
Subscriber Host Limit Overrides and SLA Profile Instance Host Limit Overrides: (only shown when overrides are active)	
ipv4-arp	The total number of IPv4 ARP hosts limit
ipv4-dhcp	The total number of IPv4 DHCP hosts limit
ipv4-ppp	The total number of IPv4 PPP hosts limit
ipv4-overall	The total number of IPv4 hosts limit
ipv6-pd-ipoe-dhcp	The total number of IPv6 IPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-ppp-dhcp	The total number of IPv6 PPPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-overall	The total number of IPv6 DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-wan-ipoe-dhcp	The total number of IPv6 IPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ipoe-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit
ipv6-wan-ppp-dhcp	The total number of IPv6 PPPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ppp-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit
ipv6-wan-overall	The total number of IPv6 WAN hosts limit
ipv6-overall	The total number of IPv6 hosts limit
lac-overall	The total number of L2TP LAC hosts limit
overall	The total number of subscriber hosts limit
Subscriber Session Limit Overrides and SLA Profile Instance Session Limit Overrides: (only shown when overrides are active)	
ipoe	The total number of IPoE sessions limit
ppoe-local	The total number of PPPoE local terminated sessions (PTA) limit
ppoe-lac	The total number of PPPoE L2TP LAC sessions limit
ppoe-overall	The total number of PPPoE sessions limit

Field	Description
l2tp-lns	The total number of L2TP LNS sessions limit
l2tp-lts	The total number of L2TP LTS sessions limit
l2tp-overall	The total number of L2TP sessions limit
overall	The total number of subscriber sessions limit
Number of hosts	The total number of hosts matching the search criteria
MC-Stdby	The number of SAPs defined on this service on a port which is in multi-chassis standby mode

## arp-host

### Syntax

```
arp-host {all | mac ieee-address | sap sap-id | ip-address ip-address[/mask]}
arp-host {port port-id | {inter-dest-id intermediate-destination-id | no-inter-dest-id} [port port-id]}
arp-host statistics [sap sap-id | interface interface-name]
```

### Context

[\[Tree\]](#) (clear>service>id arp-host)

### Full Context

```
clear service id arp-host
```

### Description

This command clears ARP host data.

### Parameters

#### all

Clears all ARP host statistics.

#### ieee-address

Clears the ARP host MAC address information. The 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

#### sap-id

Clears the specified SAP information.

***ip-address[/mask]***

Clears the specified IP address and mask.

**Values** a.b.c.d  
mask: 1 to 32

***port-id***

Clear the specified port ID information.

<b>Values</b>	<i>port-id</i>	<i>slot/mda/port [.channel]</i>	
	aps-id	<i>aps-group-id</i> [ <i>.channel</i> ]	
		aps	keyword
		<i>group-id</i>	1 to 64
	ccag-id	<i>ccag-id.path-id</i> [ <i>cc-type</i> ]	
		ccag	keyword
		id	1 to 8
		<i>path-id</i>	a, b
		<i>cc-type</i>	.sap-net, net-sap
	eth-tunnel-id	<i>eth-tunnel-id</i>	
		<i>eth-tunnel</i>	keyword
		id	1 to 1024
	lag-id	<i>lag-id</i>	
		lag	keyword
		id	1 to 800

***intermediate-destination-id***

Displays information about the specified intermediate destination ID. 32 characters maximum.

***no-inter-dest-id***

Displays the information about no intermediate destination ID.

***interface-name***

Clears the interface name. 32 characters maximum.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 4.59 arp-table

### arp-table

#### Syntax

```
arp-table [ip ipv4-address] [class class] [next-index index]
```

#### Context

[\[Tree\]](#) (tools>dump>wlan-gw>lanext>bd arp-table)

#### Full Context

```
tools dump wlan-gw lanext bd arp-table
```

#### Description

This command dumps the specified ARP table entries for the specified HLE BD.

#### Parameters

##### *ipv4-address*

Specifies the IP address of the ARP entry to be displayed.

##### *class*

Specifies the source on which to filter the ARP table entries.

**Values** access, network, remote

##### *index*

Specifies the next set of results if there are more results than the current output. The additional results are shown at the bottom of the current output.

**Values** 0 to 4294967295

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of ARP table information.

#### Output Example

```
tools>dump>wlan-gw>lanext>bd# arp-table
=====
MATCHED 1 ARP ENTRY ON SLOT #2 MDA #1
=====
IP ADDRESS      MAC ADDRESS      CLASS      TIMESTAMP
-----
192.168.0.1     AA:BB:CC:00:00:01 ACCESS      05/30/2017 23:49:11
```

---

## 4.60 aspath-regex

### aspath-regex

#### Syntax

**aspath-regex** *reg-exp* {**detail** | **longer**}

**aspath-regex** *reg-exp*

**aspath-regex** *reg-exp* **hunt**

#### Context

[\[Tree\]](#) (show>router>bgp>routes aspath-regex)

#### Full Context

show router bgp routes aspath-regex

#### Description

This command displays BGP routes with an AS path matching the specified regular expression.

**aspath-regex** is a parameter of the **show router bgp routes** command. Depending on the parameters that are used to issue the command, the output can display a narrower or wider set of routes, including routes belonging to other address families. See the **show router bgp routes** command description for syntax variants, parameter descriptions and values, and output examples.

#### Platforms

All

## 4.61 association

### association

#### Syntax

**association** [*ma-index* | *ma-admin-name*] [**detail**]

#### Context

[\[Tree\]](#) (show>eth-cfm association)

## Full Context

show eth-cfm association

## Description

This command displays ETH-CFM association information.

## Parameters

*ma-index*

Specifies the maintenance association (MA) index.

**Values** 1 to 4294967295

*ma-admin-name*

Specifies the administrative name for the association, up to 64 characters.

**detail**

Keyword to display detailed information for the ETH-CFM association.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of ETH-CFM association information, and the following table describes the output fields.

### Output Example

```
A:node-2# show eth-cfm association
=====
CFM Association Table
=====
Md-index  Ma-index  Name                               Int  Hold  Bridge-id  MEPS TxSid
md-admin-name
ma-admin-name
bridge-name
-----
10        100       vpls-100-0                         1    n/a   1          no
10
100
vpls-100
12        1000      vpls-100-1                         1    n/a   4          yes
12
vpls-100-1
vpls-100
=====

*A:node-2# show eth-cfm association 1 detail
-----
Domain 1 Associations:
-----
Md-index      : 1                Ma-index      : 1
Name Format    : charString      CCM-interval  : 10
Name          : test-ma-1
Bridge-id     : 2                MHF Creation  : defMHFnone
```

```

PrimaryVlan      : 0                Num Vids        : 0
Remote Mep Id   : 1
Remote Mep Id   : 4
Remote Mep Id   : 5
-----
  
```

Table 39: Output fields: ETH-CFM association

Label	Description
Md-index	Displays the maintenance domain (MD) index
Ma-index	Displays the maintenance association (MA) index
Name	Displays the part of the maintenance association identifier which is unique within the maintenance domain name
Int	Displays the CCM transmission interval for all MEPs in the association
Hold	Displays the CCM hold time, in milliseconds, that is added before the defect condition is raised. A value of "n/a" indicates that the MEP is not subsecond and does not support the CCM hold time.
Bridge-id	Displays the bridge-identifier value for the domain association
MEPS	Displays the total local and remote maintenance association end point (MEP)
TxSid	Yes — the Sender ID TLV is included in the supported ETH-CFM PDUs No — the Sender ID TLV is not included in the supported ETH-CFM PDUs
md-admin-name	Displays the administrative MD name
ma-admin-name	Displays the administrative MA name
bridge-name	Displays the administrative bridge-identifier name

## association

### Syntax

**association**

**association** *name* [**statistics**]

### Context

[\[Tree\]](#) (show>subscr-mgmt>pfcf association)



## Full Context

show subscriber-mgmt pfcf association

## Description

This command displays PFCF association information. If no parameters are entered, it displays an overview of all PFCF associations present on the system.

## Parameters

### *name*

Specifies the name of the configured PFCF association, up to 32 characters, for which detailed overview information is displayed.

### *statistics*

Specifies that the packet counters for each PFCF message and upstream IBCP message for the specified PFCF association *name* are displayed.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following outputs are examples of PFCF association output information and the corresponding table describes the output fields:

- [Output Example: show subscriber-mgmt pfcf association](#); [Table 40: PFCF Association Field Descriptions](#)
- [Output Example: show subscriber-mgmt pfcf association name](#); [Table 41: PFCF Association Name Field Descriptions](#)
- [Output Example: show subscriber-mgmt pfcf association name statistics](#)

### Output Example: show subscriber-mgmt pfcf association

```
#BNG-UPF# show subscriber-mgmt pfcf association
=====
PFCF Associations
=====
Name                Description
-----
bng-cpf              (Not Specified)
-----
No. of configured PFCF Associations: 1
=====
```

[Table 40: PFCF Association Field Descriptions](#) describes the output fields for the **show subscriber-mgmt pfcf association** command.

Table 40: PFCF Association Field Descriptions

Label	Description
Name	Displays the name of each PFCF association configured in the system

Label	Description
Description	Displays the description of each PFCP association, if configured

**Output Example: show subscriber-mgmt pfcf association name**

```

=====
A:BNG-UPF# show subscriber-mgmt pfcf association "bng-cpf"
=====
PFCF Association bng-cpf
=====
Admin Status           : up
Oper Status           : up
Router                : to_cpf
Interface             : endpoint
Peer Node Id          : 17.17.17.10
Peer Address          : 17.17.17.10
Local Node Id         : 192.0.2.11
Local Address         : 192.0.2.11
UP Features           : FTUP TREU PDIU FRRT ADPDP MNOP IP6PL
UP BBF Features       : PPPOE IPOE LCPKO
UP NOKIA Features    : BULKAUDIT
CP Features           :
Setup Retry           : 1 second
Release Timeout       : 1 hour
Path Restoration Time : (Not Specified)
Heartbeat Interval    : 1 minute
Heartbeat Timeout     : 5 seconds
Heartbeat Retries     : 4
Tx Timeout            : 5 seconds
Tx Retries            : 3
Tx TTL                : 255
NAT group             : (Not Specified)
Created               : 01/08/2021 16:26:07
Last Updated          : 01/08/2021 16:26:07
=====
    
```

**Table 41: PFCF Association Name Field Descriptions** describes the output fields for the **show subscriber-mgmt pfcf association name** command.

*Table 41: PFCF Association Name Field Descriptions*

Label	Description
Admin Status	Administrative status of this PFCF association down — association is administratively disabled up — association is administratively enabled
Oper Status	Operational status of this PFCF association down — association is operationally disabled up — association is operationally enabled
Router	Router name for this association
Interface	Interface for this association

Label	Description
Peer Node Id	CPF peer node ID
Peer address	CPF peer node IP address
Local Node Id	Local UPF node ID
Local address	Local UPF node IP address
UP Features	UPF features
UP BBF Features	UPF BBF features
UP NOKIA Features	UPF Nokia features
CP Features	CPF features
Setup Retry	Configured time to wait before an association setup retry attempt after failure
Release Timeout	Configured time to wait for a response to a release request
Path Restoration Time	Configured time to wait before the path is declared down
Heartbeat Interval	Configured interval time between two heartbeat request messages
Heartbeat Timeout	Configured time the system waits for a heartbeat response message
Heartbeat Retries	Configured number of retries after the heartbeat timeout expires
Tx Timeout	Configured transmit timeout
Tx Retries	Configured transmit retries
Tx TTL	Configured transmit TTL
NAT group	Configured NAT group
Created	PFCP association create time
Last Updated	PFCP association update time

**Output Example: show subscriber-mgmt pfcf association name statistics**

```

=====
A:BNG-UPF# show subscriber-mgmt pfcf association "bng-cpf" statistics
=====
PFCF Statistics for Association 'bng-cpf'
=====

PFCF Session Related Messages

Session Establish Req      : 1          Session Establish Resp    : 1
    
```

```
Session Establish Resp fail: 0
Session Modify Req      : 0      Session Modify Resp      : 0
Session Modify Resp fail : 0      Session Deletion Resp    : 0
Session Deletion Req    : 1      Session Report Resp      : 0
Session Deletion Resp fail : 1   Session Report DDR Resp   : 0
Session Report Req      : 0      Session Report UR Resp   : 0
Session Report Resp fail : 0      Session Report EIR Resp  : 0
Session Report DDR Req  : 0      Session Report UPIR Resp : 0
Session Report DDR Rsp fail: 0
Session Report UR Req   : 0
Session Report UR Rsp fail : 0
Session Report EIR Req  : 0
Session Report EIR Rsp fail: 0
Session Report UPIR Req : 0
Session Report UPIR Rs fail: 0

PFCP Session Audit Related Messages

Session Modify Req      : 0      Session Modify Resp      : 0
Session Modify Resp fail : 0
Session Report Req      : 0      Session Report Resp      : 0
Session Report Rsp fail : 0

PFCP Node Related Messages

Node Report Req        : 0      Node Report Resp        : 0
Node Report Resp fail  : 0
Assoc Setup Req Rx     : 0      Assoc Setup Resp Rx     : 1
Assoc Setup Resp fail Rx : 0    Assoc Setup Resp Tx     : 0
Assoc Setup Req Tx     : 1      Assoc Upd Resp Rx       : 0
Assoc Setup Resp fail Tx : 0    Assoc Upd Resp Tx       : 0
Assoc Upd Req Rx       : 0      Assoc Upd Req with GRP  : 0
Assoc Upd Resp fail Rx : 0      Assoc Release Resp      : 0
Assoc Upd Req Tx       : 0
Assoc Upd Resp fail Tx : 0
Assoc Upd Req with ARR : 0
Assoc Upd Req ARR & GRP : 0
Assoc Release Req      : 0
Assoc Release Resp fail : 0
Heartbeat Req Rx       : 2      Heartbeat Resp Rx       : 0
Heartbeat Req Tx       : 0      Heartbeat Resp Tx       : 2
Heartbeat Aud Trig Req Tx : 0    Heartbeat Aud Trig Rsp Rx : 0
Heartbeat Aud Start Req Rx : 0    Heartbeat Aud Start Rsp Tx : 0
Heartbeat Aud End Req Rx : 0      Heartbeat Aud End Rsp Tx : 0

IBCP upstream packet statistics

Ipoe Rx Pkts          : 0
Pppoe Ctrl Rx Pkts    : 0
Pppoe Data Rx Pkts    : 0
Tx Pkts to Smf        : 0

IBCP upstream packet discard statistics

Missing pkt detection rule : 0
Default tnl trigger missing: 0
Default tunnel missing     : 0
Parsing error               : 0
Tx error                    : 0

IBCP default tunnel
overwrite                   : 0

Last cleared time          : 01/08/2021 16:26:07
```

## 4.62 associations

### associations

#### Syntax

**associations**

#### Context

**[Tree]** (show>router>dhcp6>local-dhcp-server associations)

**[Tree]** (show>router>dhcp>local-dhcp-server associations)

#### Full Context

show router dhcp6 local-dhcp-server associations

show router dhcp local-dhcp-server associations

#### Description

This command displays the interfaces associated with this DHCP or DHCP6 server.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of information associated with this DHCP or DHCP6 server.

#### Output Example

```
*A:SUB-Dut-A# show router dhcp local-dhcp-server dhcpS1 associations
=====
DHCP server s1  router 3
=====
Associations                Admin
-----
tosim5                       Up
=====
*A:SUB-Dut-A#
```

```
*A:SUB-Dut-A# show router dhcp6 local-dhcp-server abc associations
=====
DHCP server abc  router 3
=====
Associations                Admin
-----
tosimxyz                   Up
=====
*A:SUB-Dut-A#
```

[Table 42: DHCP6 Summary Field Descriptions](#) describes DHCP associations fields.

Table 42: DHCP6 Summary Field Descriptions

Label	Description
Associations	The entity associated with the local DHCP server
Admin	The administrative state

## associations

### Syntax

**associations**

**associations per-link-hash interface**

**associations per-link-hash class {1 | 2 | 3} interface**

**associations link-map-profile [*link-map-profile*] interface**

**associations per-link-hash [class {1 | 2 | 3}] sap**

**associations link-map-profile [*link-map-profile*] sap**

### Context

[\[Tree\]](#) (show>lag associations)

### Full Context

show lag associations

### Description

This command displays LAG association information.

### Parameters

#### *link-map-profile*

Displays information about a specified LAG link map profile.

**Values** 1 to 32 (VSR)  
1 to 64 (all other platforms)

### Platforms

All

## 4.63 auth-keychain

### auth-keychain

#### Syntax

**auth-keychain** [*keychain*]

#### Context

[\[Tree\]](#) (show>router>bgp auth-keychain)

#### Full Context

show router bgp auth-keychain

#### Description

This command displays BGP sessions using a particular authentication keychain.

#### Parameters

**keychain**

Specifies an existing keychain name.

#### Platforms

All

#### Output

The following output is an example of authentication keychain information.

#### Output Example

```
*A:ALA-48# show router 2 bgp auth-keychain
=====
Sessions using key chains
=====
Peer address          Group          Keychain name
-----
10.20.1.3             1              eta_keychain1
30.1.0.2              1              eta_keychain1
=====
*A:ALA-48#
*A:ALA-48>config>router>bgp# show router bgp group "To_AS_10000"
=====
BGP Group : To_AS_10000
-----
Group                : To_AS_10000
-----
Group Type           : No Type          State                : Up
Peer AS              : 10000            Local AS             : 200
Local Address        : n/a              Loop Detect           : Ignore
Import Policy        : None Specified - Default Accept
Export Policy         : ospf3
```

```

Hold Time      : 90                Keep Alive     : 30
Cluster Id    : 0.0.0.100         Client Reflect  : Enabled
NLRI          : Unicast           Preference     : 170
TTL Security  : Disabled          Min TTL Value  : n/a
Graceful Restart : Enabled        Stale Routes Time: 360
Auth key chain : testname

List of Peers
- 10.0.0.8 :
  To Router B - EBGP Peer
Total Peers    : 1                Established    : 0
-----
Peer Groups : 1
=====
*A:ALA-48>config>router>bgp#

*A:ALA-48>config>router>bgp# show router bgp neighbor 10.0.0.8
=====
BGP Neighbor
-----
Peer : 10.0.0.8
Group : To_AS_10000
-----
Peer AS      : 10000                Peer Port     : 0
Peer Address : 10.0.0.8             Local Port    : 0
Local AS     : 200                  Local Address : 0.0.0.0
Peer Type    : External
State        : Active               Last State    : Idle
Last Event   : stop
Last Error   : Cease
Local Family : IPv4
Remote Family : Unused
Hold Time    : 90                    Keep Alive    : 30
Active Hold Time : 0                Active Keep Alive : 0
Cluster Id   : 0.0.0.100
Preference   : 99                    Num of Flaps  : 0
Recd. Paths  : 0
IPv4 Recd. Prefixes : 0            IPv4 Active Prefixes : 0
IPv4 Suppressed Pfxs : 0          VPN-IPv4 Suppr. Pfxs : 0
VPN-IPv4 Recd. Pfxs : 0            VPN-IPv4 Active Pfxs : 0
Mc IPv4 Recd. Pfxs. : 0            Mc IPv4 Active Pfxs. : 0
Mc IPv4 Suppr. Pfxs : 0            IPv6 Suppressed Pfxs : 0
IPv6 Recd. Prefixes : 0            IPv6 Active Prefixes : 0
Input Queue  : 0                      Output Queue  : 0
i/p Messages : 0                      o/p Messages  : 0
i/p Octets   : 0                      o/p Octets    : 0
i/p Updates  : 0                      o/p Updates   : 0
TTL Security : Disabled              Min TTL Value  : n/a
Graceful Restart : Enabled          Stale Routes Time : 360
Advertise Inactive : Disabled      Peer Tracking   : Disabled
Advertise Label : None
Auth key chain : testname
Local Capability : RouteRefresh MP-BGP
Remote Capability :
Import Policy  : None Specified - Default Accept
Export Policy  : ospf3
-----
Neighbors : 1
=====
*A:ALA-48>config>router>bgp#
    
```



```
*A:ALA-48>config>router>bgp# show router bgp auth-keychain testname
=====
Sessions using key chain: keychain
=====
Peer address          Group                Keychain name
-----
10.0.0.8              To_AS_10000         testname
=====
*A:ALA-48>config>router>bgp#
```

## 4.64 authentication

### authentication

#### Syntax

**authentication** **user-name** *user-name* **password** *password* [**circuit-id** *circuit-id*] [**circuit-id-hex** *circuit-id-hex*] [**derived-id** *derived-id*] [**mac** *ieee-address*] [**remote-id** *remote-id*] [**remote-id-hex** *remote-id-hex*] [**sap-id** *sap-id*] [**service-name** *service-name*]

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>loc-user-db>ppp authentication)

#### Full Context

tools perform subscriber-mgmt local-user-db ppp authentication

#### Description

This command authenticates the PPPoE user name.

#### Parameters

##### **user-name**

Specifies the PPP user name up to 253 characters.

##### **password**

Specifies the password of this host up to 64 characters.

##### **circuit-id**

Specifies the circuit ID up to 127 characters.

##### **circuit-id-hex**

Specifies the circuit ID in hexadecimal format.

**Values** 0x0 to 0xFFFFFFFF (maximum 254 hex nibbles)

##### **derived-id**

Specifies an ASCII string that uniquely identifies a host, and is derived by a Python script from packet content available during a DHCP transaction up to 255 characters.

***ieee-address***

Specifies information about the MAC address of the PPP session.

***remote-id***

Specifies that information that goes into the remote-id sub-option in the DHCP relay packet, up to 255 characters.

***remote-id-hex***

Specifies the remote ID in hexadecimal format.

**Values** 0x0 to 0xFFFFFFFF (maximum 510hex nibbles)

***sap-id***

Specifies a SAP ID, up to 255 characters.

***service-name***

Specifies the service name.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## authentication

**Syntax**

**authentication** *policy-name* **association**

**authentication** [*policy-name*]

**authentication** [*policy-name*] **statistics**

**authentication** **coa-statistics**

**Context**

[\[Tree\]](#) (show>subscr-mgmt authentication)

**Full Context**

show subscriber-mgmt authentication

**Description**

This command displays subscriber management RADIUS authentication policy information and statistics.

**Parameters**

***policy-name***

Specifies the subscriber management RADIUS authentication policy name, up to 32 characters, for which information is requested.

**association**

Displays SAP, interface, local user database host, AA and L2TP associations of this policy.

### coa-statistics

Displays the overall statistics for incoming RADIUS Change of Authorization (CoA) messages and Disconnect Messages. For dropped requests, a counter for different drop reasons is available.

### statistics

Displays a list of policies with basic statistics (without specifying a policy name) or detailed statistics, including per-server statistics for the specified policy-name. These statistics apply only to the legacy RADIUS server configuration method where the servers are directly configured in the authentication policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management authentication information.

### Output Example

```
# show subscriber-mgmt authentication
=====
Authentication Policies
=====
Name                               Description
-----
auth-policy-1                      Radius auth policy - servers
auth-policy-2                      Radius auth policy - radius-server-policy
-----
Number of Authentication Policies : 2
=====

# show subscriber-mgmt authentication "auth-policy-2"
=====
Authentication Policy auth-policy-2
=====
Description           : Radius auth policy - radius-server-policy
Re-authentication     : Yes                               Username Format      : MAC Address
PPPoE Access Method  : PAP/CHAP                               Username Mac-Format : "aa:"
PPP-Username Oper    : None
PPP-Domain-Name      : N/A
Username Oper        : None
Domain-Name          : N/A
Acct-Stop-On-Fail    :
RADIUS Server Policy : "aaa-server-policy-1"
Fallback Action       : deny
Last Mgmt Change     : 06/24/2013 21:16:50
-----
Include Radius Attributes
-----
Remote Id             : Yes                               Circuit Id          : Yes
NAS Port Id          : Yes                               NAS Identifier     : Yes
PPPoE Service Name   : Yes                               DHCP Vendor Class Id : Yes
Access Loop Options  : Yes                               MAC Address        : Yes
NAS Port Prefix      : None                               NAS Port Suffix    : None
NAS-Port-Type        : Yes (standard)                   Acct Session Id    : Host
Calling Station Id   : Yes (sap-string)                   Called Station Id   : Yes
Tunnel Server Attr   : Yes                               DHCP Options       : Yes
NAS Port             : Yes
```

```

NAS Port Bits Spec : *3s*1m*4p*12o*12i
-----
Radius Servers
-----
Router          : management + Base   Source Address      : N/A
Access Algorithm : Direct              Retry               : 3
Timeout (s)     : 5                  Hold down time (s) : 30
-----
Index IP Address      Port  Pend-Req-Limit Out/Overload time (s) Oper State
-----
No Radius Servers configured.
-----
Accept Radius Attributes
-----
No Matching Entries
-----
Radius Script Policies
-----
Access-Request      : "N/A"
Access-Accept       : "N/A"
Change-of-Authorization : "N/A"
=====

# show subscriber-mgmt authentication "auth-policy-2" association
=====
Authentication Policy auth-policy-2
=====
-----
SAP Associations
-----
No associations found.
-----
Interface Associations
-----
Service-Id : 3000 (VPRN)
- If Name : group-int-ws-1-1
-----
Local-User-Db PPPoE Host Associations
-----
Local-User-Db : ludb-1
- Host : host-1
-----
Local-User-Db DHCP Host Associations
-----
Local-User-Db : ludb-1
- Host : default
-----
Application Assurance Associations
-----
No associations found.
=====
No associated L2TP groups found.
No associated L2TP tunnels found.

# show subscriber-mgmt authentication statistics
=====
Authentication Policy Statistics
=====
Policy Name                Subscr. Pkts   Subscr. Pkts   Subscr. Pkts
                             Authenticated  Rejected       Rejected
                                                           Send Failed
-----
    
```

```

auth-policy-1          0          0          0
auth-policy-2          0          0          0
-----
Number of Authentication Policies : 2
=====

# show subscriber-mgmt authentication "auth-policy-1" statistics
=====
Authentication Policy Statistics
=====
-----
Policy name           : auth-policy-1
subscriber packets authenticated : 0
subscriber packets rejected      : 0
subscriber packets rejected send failed : 0
-----
radius server  requests  requests  requests  requests  requests  requests
idx IP-address  accepted  rejected  no reply  md5 failed  pending  send failed
-----
1 172.16.1.1    0         0         0         0         0         0
-----

# show subscriber-mgmt authentication coa-statistics
=====
Radius Notify Statistics    Change-Of-Authorization    Disconnect-Messages
=====
Requests Received          7                          10
Requests Accepted          5                          6
Requests Rejected          2                          4
Requests Dropped           0                          0
  No Auth Policy found     0                          0
  Invalid message          0                          0
  Out of resources         0                          0
  Authentication failure    0                          0
=====
    
```

Table 43: Subscriber Authentication Field Descriptions

Label	Description
Re-authentication	Whether re-authentication on IPOE renewal is enabled
Username Format	The user name format in RADIUS message
PPPoE Access Method	The PPPoE access method, none, padi, pap-chap
Username Mac-Format	The username is represented when contacting a RADIUS server.
PPP-Username Oper	The PPP user name operation
PPP-Domain-Name	The PPP domain name
Username Oper	The username

Label	Description
Acct-Stop-On-Fail	The failure condition a RADIUS accounting-stop message indicating the failure has to be sent
RADIUS Server Policy	The RADIUS server policy name
Fallback Action	The authentication action in case no RADIUS server is available
Lack Mgmt Change	The time of the most recent management-initiated change to this policy server
Remote Id	The value of the remote ID sub-option
NAS Port Id	NAS port ID generation enabled or disabled
PPPoE Service Name	The PPPoE service name
Access Loop Options	The generation of the DSL forum access loop characteristics RADIUS attributes enabled or disabled
NAS Port Prefix	The type of prefix added to the NAS-Port attribute if included in RADIUS authentication request messages
NAS-Port-Type	The kind of value to be put in the RADIUS NAS-Port-Type attribute if included in RADIUS authentication request messages
Calling Station Id	The string will be put in the RADIUS Calling-Station-Id attribute if included in RADIUS authentication request messages
Tunnel Server Attr	The tunnel-server-attrs RADIUS attribute enabled or disabled
NAS Port	The NAS-Port attribute included or excluded
NAS Port Bits Spec	The number that will be put in the RADIUS NAS-Port attribute if included in RADIUS authentication request messages
Circuit Id	Circuit ID generation enabled or disabled
NAS Identifier	NAS-Identifier RADIUS attribute enabled or disabled
DHCP Vendor Class Id	dhcp-vendor-class-id RADIUS attribute enabled or disabled
MAC Address	The generation of the client MAC address RADIUS attribute enabled or disabled
NAS Port Suffix	The type of suffix is added to the NAS-Port-Id attribute if included in RADIUS accounting-request messages
Acct Session Id	The RADIUS accounting session id for this subscriber host
DHCP Options	DHCP options enabled or disabled
Router	The RADIUS router name

Label	Description
Access Algorithm	The algorithm used to access the set of RADIUS servers
Timeout (s)	The timeout for a response from the RADIUS server
Source Address	The source address of the RADIUS message
Retry	The number of retries for contacting the RADIUS server
Hold down time (s)	The hold down time
Index IP Address	The IP address of the index
Port	The port ID
Pend-Req-Limit	The limit of the number of pending RADIUS authentication requests for this RADIUS server
Out/Overload time (s)	The accumulated time that the value of the object RADIUS server has been equal to 'overloaded' since created
Oper State	The operational state
Access-Request	The number of Access-Request packets received by this RADIUS proxy server
Access-Accept	The number of Access-Accept packets received by this RADIUS proxy server
Change-of-Authorization	Change of authorization enabled or disabled
Policy Name	The authentication policy name
Subscr. Pkts Authenticated	The number of subscriber packets authenticated
Subscr. Pkts Rejected	The number of subscriber packets rejected
Subscr. Pkts Rejected Send Failed	The number of subscriber messages (such as DHCP and PPPoE) failed to be sent
subscriber packets authenticated	The number of subscriber packets authenticated
subscriber packets rejected	The number of subscriber packets rejected
subscriber packets send failed	The number of subscriber packets failed to be sent
Requests Received	The number of notify Change-of-Authorization requests received
Requests Accepted	The number of notify Change-of-Authorization requests accepted

Label	Description
Requests Rejected	The number of notify Change-of-Authorization requests rejected
Requests Dropped	The number of notify Change-of-Authorization requests dropped
No Auth Policy found	The number of notify Change-of-Authorization requests found
Invalid message	The number of notify Change-of-Authorization requests rejected because of decode errors
Out of resources	The number of notify Change-of-Authorization requests rejected due to lack of resources
Authentication Failure	The number of notify Change-of-Authorization requests which do not have NAS-Port-ID or Framed-IP-Address set or have mismatched subscriber-id

## authentication

### Syntax

**authentication** [*policy-name*]  
**authentication coa-statistics**

### Context

[\[Tree\]](#) (clear>subscr-mgmt authentication)

### Full Context

clear subscriber-mgmt authentication

### Description

This command clears subscriber authentication data.

### Parameters

#### ***policy-name***

Clears the specifies existing authentication policy name.

#### **coa-statistics**

Clears statistics for incoming RADIUS Change of Authorization requests.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## authentication

### Syntax

**authentication**

### Context

[\[Tree\]](#) (show>service>id authentication)

### Full Context

show service id authentication

### Description

Commands in this context show session authentication information.

### Platforms

All

## authentication

### Syntax

**authentication**

### Context

[\[Tree\]](#) (clear>service>id authentication)

### Full Context

clear service id authentication

### Description

Commands in this context clear session authentication information.

### Platforms

All

## authentication

### Syntax

**authentication**

## Context

[\[Tree\]](#) (show>router authentication)

## Full Context

show router authentication

## Description

This command enables the command to display authentication statistics.

## Platforms

All

## authentication

## Syntax

**authentication**

## Context

[\[Tree\]](#) (clear>router authentication)

## Full Context

clear router authentication

## Description

This command clears authentication related data.

## Platforms

All

## authentication

## Syntax

**authentication [statistics]**

## Context

[\[Tree\]](#) (show>system>security authentication)

## Full Context

show system security authentication

## Description

This command displays system login authentication configuration and statistics.

## Parameters

### statistics

Appends login and accounting statistics to the display.

## Platforms

All

## Output

The following output is an example of authentication information.

[Table 44: Show System Security Authentication Output Fields](#) describes system security authentication output fields.

### Output Example

```
A:ALA-4# show system security authentication statistics
=====
Authentication          sequence : radius tacplus ldap local
=====
type                    status      timeout (secs)  retry count
server address
server name
-----
radius                  up          3                3
192.168.0.10:1812
tacplus                 up          3                n/a
192.168.1.10:49
ldap                    up          3                3
10.1.1.1:389
-----
radius admin/oper status : up/up
                        UDP port : 1812
tacplus admin/oper status : up/up
ldap admin/oper status   : up/up
health check             : enabled (interval 30 secs)
-----
No. of Servers: 3
=====
Login Statistics
=====
server address          conn  accepted  rejected
                        errors logins   logins
-----
192.168.0.10           0     0          0
192.168.1.10           0     0          0
10.1.1.1                0     0          0
local                   n/a    0          0
=====
Authorization Statistics (TACACS+)
=====
server address          conn  sent  rejected
                        errors pkts  pkts
-----
192.168.1.10           0     0     0
=====
Accounting Statistics
=====
server address          conn  sent  rejected
                        errors pkts  pkts
-----
```

```

192.168.0.10          0      0      0
192.168.1.10        0      0      0
=====
    
```

Table 44: Show System Security Authentication Output Fields

Label	Description
sequence	The sequence in which authentication is attempted
type	The type of server
status	The status of the server
timeout (secs)	The number of seconds the system waits for a response from a server
retry count	The number of retry attempts to contact the server
server address	The IP address of the server
server name	The optional description of the server
admin/oper status	The administrative and operational status for each type, and RADIUS server ports in use
health check	Whether the servers are periodically monitored
No. of Servers	The total number of configured servers
conn errors	The number of connection errors
accepted logins	The number of logins accepted by the server
rejected logins	The number of logins rejected by the server
sent pkts	The number of packets sent
rejected pkts	The number of packets rejected

## 4.65 authentication-origin

### authentication-origin

#### Syntax

**authentication-origin** [**priority** [*priority*]]

#### Context

**[Tree]** (show>subscr-mgmt authentication-origin)

## Full Context

show subscriber-mgmt authentication-origin

## Description

This command displays subscriber authentication origin information.

## Parameters

### *priority*

Displays information about the specified authentication origin priority override.

**Values** 1 to 7

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of authentication origin information. [Table 45: Show Authentication Origin Output Fields](#) describes authentication origin output fields.

### Output Example

```
*A:cses-V26>config>subscr-mgmt>auth-orig# show subscriber-mgmt authentication-origin
=====
Authentication Origins
=====
Priority                Source
-----
1                       python
2                       diameterGx
3                       ludb
4                       radius
5                       diameterNasreq
6                       localAddressAssignment
7                       gtp
8                       dhcp
-----
Number of Authentication Origins : 8
=====
*A:cses-V26>config>subscr-mgmt>auth-orig#
```

Table 45: Show Authentication Origin Output Fields

Field	Description
Priority	The relative order of authentication priorities
Source	The source of authentication priority
Number of Authentication Origins	The number of authentication origins

## 4.66 authentication-server-check

### authentication-server-check

#### Syntax

```
authentication-server-check server-address ip-address [port port] {{user-name user-name password password } | attr-from-file file-url } secret key [source-address ip-address] [timeout seconds] [router router-instance | service-name service-name] nas-identifier nas-id [ debug ]
```

#### Context

[\[Tree\]](#) (tools>perform>security authentication-server-check)

#### Full Context

tools perform security authentication-server-check

#### Description

This command is used to perform an authentication check on the RADIUS server.

#### Parameters

##### **server-address** *ip-address*

Specifies the IP address of the RADIUS server.

##### **port**

Specifies the port of the RADIUS server.

**Values** 1 to 65535

##### **user-name**

Specifies the user name, up to 253 characters.

##### **password**

Specifies the user password, up to 64 characters.

##### **file-url**

Specifies to attach additional VSAs from a file.

##### **Values**

*local-url:* [*cflash-id*] [*file-path*]

200 characters maximum, including cflash-id directory length, up to 99 characters each

*remote-url:* [{ftp://| tftp://}<login>:<pswd>@<remote-locn>/][<file-path>]

255 characters maximum, directory length, up to 99 characters each

*remote-locn:* [<hostname> | <ipv4-address> | <ipv6-address>]

*ipv4-address:* a.b.c.d

*ipv6-address:* x:x:x:x:x:x[-interface]  
 x:x:x:x:x:d.d.d[-interface]  
 x - [0..FFFF]H  
 d - [0..255]D  
 interface - up to 32 characters for link local addresses

*cflash-id:* cf1:, cf1-A:, cf1-B:, cf2:, cf2-A:, cf2-B:, cf3:, cf3-A:, cf3-B:

**key**

Specifies the secret key shared between the RADIUS client and server, up to 64 characters.

**source address *ip-address***

Specifies the source address used for the access-request message.

<b>Values</b>	<i>ipv4-address</i>	a.b.c.d
	<i>ipv6-address</i>	x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H d - [0 to 255]D

**seconds**

Specifies the time to wait for the RADIUS server response.

**Values** 1 to 90

**router-instance**

Specifies the router instance that should be used by the access request message.

<b>Values</b>	<i>router-name</i>   <i>vprn-svc-id</i>	
	<i>router-name</i>	Base, management Default - Base
	<i>vprn-svc-id</i>	1 to 2147483647

**service-name**

Specifies the service name that should be used by the access request message, up to 64 characters.

**nas-id**

Specifies the NAS identifier, up to 64 characters.

### **debug**

Specifies to display the full debug message, including all VSAs and full hex sting, of the RADIUS reply message.

### **Platforms**

All

## **4.67 auto-boot**

### **auto-boot**

#### **Syntax**

**auto-boot** {**retry** | **terminate**}

**auto-boot echo** [**debugger**]

**no auto-boot echo** [**debugger**]

#### **Context**

[\[Tree\]](#) (tools>perform auto-boot)

#### **Full Context**

tools perform auto-boot

#### **Description**

This command starts and stops the auto-boot process. It is also used to enable the display of auto-discovery information in the CLI.

This command can be used only if the **auto-boot** flag is enabled in the BOF.

The **no** form of this command disables the display of auto-discovery information.

#### **Parameters**

##### **retry**

Executes the auto-boot process.

##### **terminate**

Stops an ongoing auto-boot process.

##### **echo**

Enables the display of auto-discovery information in the CLI.

##### **debugger**

Includes debugging information in the displayed auto-discovery information.

#### **Platforms**

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s



## auto-boot

### Syntax

**auto-boot** [**detail**]

**auto-boot log**

### Context

[\[Tree\]](#) (tools>dump auto-boot)

### Full Context

tools dump auto-boot

### Description

This command displays auto-boot process information.

### Parameters

**detail**

Displays detailed information.

**log**

Saves auto-boot process information to a log file.

### Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## 4.68 auto-disc

## auto-disc

### Syntax

**auto-disc** [**hunt** | **detail**] [**rd** *rd*] [**community** *comm-id*] [**tag** *tag*] [**next-hop** *next-hop*] [**esi** *esi*] [**aspath-regex** *reg-exp*]

### Context

[\[Tree\]](#) (show>router>bgp>routes>evpn auto-disc)

### Full Context

show router bgp routes evpn auto-disc

## Description

This command displays BGP-EVPN auto discovery routes.

## Parameters

### hunt

Displays entries for the specified route.

### detail

Displays detailed information.

### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### comm-id

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val | ext-comm | well-known-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type:{ ip-address:comm-val1 | as-number1:comm-val2 | as-number2:comm-val1 }*  
where:
  - *as-number1* — 0 to 65535
  - *comm-val1* — 0 to 65535
  - **type** — target, origin
  - *ip-address* — a.b.c.d
  - *comm-val2* — 0 to 4294967295
  - *as-number2* — 0 to 4294967295
- *well-known-comm* — **null | no-export | no-export-subconfed | no-advertise |**

### tag

Specifies the auto discovery route tag.

**Values** 0to 4294967295 | MAX-ET

### next-hop

Specifies the IPv4 or IPv6 BGP next-hop address.

**Values** ipv4-address: a.b.c.d

ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x: [0 to FFFF]H  
d: [0 to 255]D

**esi**

Specifies a 10-byte ESI by which to filter the displayed information. For example, ESI-0 | ESI-MAX or 00-11-22-33-44-55-66-77-88-99 with any of these separators('-',':','.')

**reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

**Platforms**

All

## 4.69 auto-discovered-meps

### auto-discovered-meps

**Syntax**

**auto-discovered-meps** [*mep-id*] **domain** *md-index* **association** *ma-index*

**Context**

[\[Tree\]](#) (clear>eth-cfm auto-discovered-meps)

**Full Context**

clear eth-cfm auto-discovered-meps

**Description**

This command clears remote MEPs that were auto discovered. The function clears a specific auto-discovered MEP learned within an association or all auto-discovered MEPs in the association. When the *mep-id* representing the auto-discovered MEP is omitted and only the **domain** *md-index* and **association** *ma-index* are provided, all auto-discovered MEPs in the association are cleared. At a minimum the **domain** *md-index* and the **association** *ma-index* must be provided.

Only auto-discovered MEPs may be cleared. This command has no effect on manually configured MEPs.

**Parameters**

***mep-id***

Specifies the MEP ID of the remote MEP that was auto-discovered.

**Values** 1 to 8191

***md-index***

Specifies the domain context in which the remote MEP was auto-discovered.

**Values** 1 to 4294967295

***ma-index***

Specifies the association context in which the remote MEP was auto-discovered.

**Values** 1 to 4294967295

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 4.70 auto-lsp

### auto-lsp

**Syntax**

auto-lsp

**Context**

[\[Tree\]](#) (clear>router>mpls>lsp auto-lsp)

**Full Context**

clear router mpls lsp auto-lsp

**Description**

Commands in this context reset and restart all auto LSPs.

**Platforms**

All

## 4.71 auto-node-provisioning

### auto-node-provisioning

**Syntax**

auto-node-provisioning

### Context

[\[Tree\]](#) (tools>perform>system auto-node-provisioning)

### Full Context

tools perform system auto-node-provisioning

### Description

This command initiates auto-provisioning of the node on all ports that are operationally up but do not have an IP address.

### Platforms

All

## 4.72 autoconfigure

### autoconfigure

#### Syntax

**autoconfigure**

#### Context

[\[Tree\]](#) (clear>router autoconfigure)

#### Full Context

clear router autoconfigure

#### Description

Commands in this context clear IP autoconfiguration information.

#### Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

### autoconfigure

#### Syntax

**autoconfigure**

#### Context

[\[Tree\]](#) (show router autoconfigure)

### **Full Context**

show router autoconfigure

### **Description**

Commands in this context display IP autoconfiguration information.

### **Platforms**

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## 5 b Commands

### 5.1 bandwidth-policy

#### bandwidth-policy

##### Syntax

**bandwidth-policy** *policy-name* [**detail**]

##### Context

[\[Tree\]](#) (show>mcast-management bandwidth-policy)

##### Full Context

show mcast-management bandwidth-policy

##### Description

This command displays multicast path management bandwidth policy information.

##### Parameters

###### *policy-name*

Specifies the bandwidth policy name, up to 32 characters.

###### **detail**

Displays detailed information.

##### Platforms

7450 ESS, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-7/12/12e, 7750 SR-s, 7950 XRS, VSR

##### Output

The following output is an example of multicast management bandwidth policy information.

##### Output Example

```
*A:PE-1# show mcast-management bandwidth-policy "default" detail
=====
Bandwidth Policy Details
=====
-----
Policy                : default
-----
Admin BW Thd         : 10 kbps           Falling Percent RST: 50
Mcast Pool Total     : 10                Mcast Pool Resv Cbs: 50
Slope Policy         : default
```

```
Primary
Cbs           : 5.00           Mbs           : 7.00
Low Drop Tail : 10
Secondary
Cbs           : 30.00          Mbs           : 40.00
Low Drop Tail : 10           Paths(Single/Dual) : 1/1
=====
Bandwidth Policies : 1
=====
*A:PE-1#
```

## 5.2 base

### base

#### Syntax

**base** [msap]

#### Context

[\[Tree\]](#) (show>service>id base)

#### Full Context

show service id base

#### Description

This command displays basic information about the service ID, including service type, description, SAPs, and SDPs.

#### Parameters

**msap**

Displays MSAPs.

#### Platforms

All

#### Output

The following output is an example of base service ID information, and [Table 46: Show Service-ID Base Output Fields](#) describes the output fields.

#### Output Example

```
*A:Dut-C>config>service>vpls# show service id 1 base
=====
Service Basic Information
=====
Service Id       : 1           Vpn Id         : 1
Service Type    : VPLS
```



```

MACSec enabled      : no
Name                : 1
Description         : Vpls 1 - BgpVpls
Customer Id        : 1           Creation Origin   : manual
Last Status Change: 01/19/2022 21:36:58
Last Mgmt Change  : 01/19/2022 21:45:55
Etree Mode        : Disabled
Admin State       : Up           Oper State      : Up
MTU               : 1400
SAP Count        : 1           SDP Bind Count  : 2
Snd Flush on Fail: Disabled    Host Conn Verify: Disabled
SHCV pol IPv4    : None
Propagate MacFlush: Disabled   Per Svc Hashing : Disabled
Allow IP Intf Bind: Disabled
Fwd-IPv4-Mcast-To*: Disabled   Fwd-IPv6-Mcast-To*: Disabled
Mcast IPv6 scope : mac-based
Def. Gateway IP   : None
Def. Gateway MAC  : None
Temp Flood Time   : Disabled    Temp Flood      : Inactive
Temp Flood Chg Cnt: 0
SPI load-balance  : Disabled
TEID load-balance: Disabled
Lbl Eth/IP L4 TEID: Disabled
Src Tep IP        : N/A
Vxlan ECMP       : Disabled
MPLS ECMP        : Disabled
Ignore MTU Mismatch*: Enabled
    
```

-----  
 Service Access & Destination Points  
 -----

Identifier	Type	AdmMTU	OprMTU	Adm	Opr
sap:1/1/4:1	q-tag	1518	1518	Up	Up
sdp:32766:4294967292 SB(10.20.1.6)	BgpVpls	0	1492	Up	Up
sdp:32767:4294967295 SB(10.20.1.1)	BgpVpls	0	1492	Up	Up

=====

\* indicates that the corresponding row element may have been truncated.

```
# show service id 2000 base
```

=====  
 Service Basic Information  
 =====

<snip>

```

Router Oper State : Up
Route Dist.       : auto-rd           VPRN Type      : regular
Oper Route Dist   : 192.0.2.3:64000
Oper RD Type      : auto
AS Number         : None             Router Id      : 192.0.2.3
ECMP              : Enabled          ECMP Max Routes : 1
Max IPv4 Routes   : No Limit
Local Rt Domain-id: 65000:1
    
```

Table 46: Show Service-ID Base Output Fields

Label	Description
Service Id	Displays the service identifier

Label	Description
Vpn Id	Displays the VPN ID assigned to the service
Service Type	Displays the type of service: Epipe, Apipe, Fpipe, Ipipe, VPLS, IES, VPRN
MACSec enabled	Indicates whether MACsec is enabled
Name	Displays the service name
Description	Displays the generic information about the service
Customer Id	Displays the customer identifier
Creation Origin	Displays how the service was created
Last Status Change	Displays the date and time of the most recent status change to this customer
Last Mgmt Change	Displays the date and time of the most recent management-initiated change to this customer
Etree Mode	Indicates whether Etree mode is enabled
Admin State	Displays the state of the service
Oper State	Displays the operating state of the service
MTU	Displays the largest frame size (in octets) that the service can handle
SAP Count	Displays the number of SAPs defined on the service
SDP Bind Count	Displays the number of SDPs bound to the service
Snd Flush on Fail	Indicates whether sending MAC flush messages is enabled
Host Conn Verify	Indicates whether the host is connected
Propagate MacFlush	Indicates whether MAC flush messages are propagated to remote Target LDP (TLDP) peers
Per Svc Hashing	Indicates whether per-service hashing is enabled for this service
Allow IP Intf Bind	Indicates whether allow IP interface binding is enabled for R-VPLS services
Fwd-IPv4-Mcast-To*	Indicates whether IPv4 multicast traffic to the VPRN interface attached to the R-VPLS is enabled
Fwd-IPv6-Mcast-To*	Indicates whether IPv6 multicast traffic to the VPRN interface attached to the R-VPLS is enabled
Mcast IPv6 scope	Displays the IPv6 multicast scope

Label	Description
Def. Gateway IP	Displays the default gateway
Def. Gateway MAC	Displays the default gateway MAC address
Temp Flood Time	Displays the temporary flood time
Temp Flood	Displays the temporary flood time state
Temp Flood Chg Cnt	Displays the temporary flood change count
SPI load-balance	Indicates whether SPI load-balance is enabled
TEID load-balance	Indicates whether TEID load balancing is enabled
Lbl Eth/IP L4 TEID	Indicates whether load balancing based on MPLS labels and inner Ethernet, IP addresses, L4 ports, and TEID is enabled
Src Tep IP	Displays the Termination Endpoint address
Vxlan ECMP	Indicates whether VXLAN ECMP is enabled
MPLS ECMP	Indicates whether MPLS ECMP is enabled
Ignore MTU Mismatch	Displays the configuration state of the <b>ignore-l2-mtu-mismatch</b> command for the service
SAP Type	Displays the type of SAPs allowed in the service and describes the processing applied by the node packets received on these SAPs
Vxlan Src Tep Ip	Displays the VXLAN source tunnel endpoint (TEP) ID
Force QTag Fwd	Indicates whether force Q-tag forwarding is enabled
Oper Group	Displays the operational group for this service
Identifier	Displays the service access (SAP) and destination (SDP) points
Type	Displays the signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on the SDP
AdmMTU	Displays the largest service frame size (in octets) that can be transmitted through this SDP to the far-end ESR, without requiring the packet to be fragmented
OprMTU	Displays the operational MTU of the SAP or SDP bind
Admin State (Adm)	Displays the administrative state
Oper State (Opr)	Displays the operation state

Label	Description
PBB Tunnel Point	Displays the endpoint in the B-VPLS environment where the Epipe terminates
Admin MTU	Displays the B-VPLS admin MTU
Backbone-Flooding	Indicates whether traffic is flooded in the B-VPLS for the destination instead of unicast. If the backbone destination MAC is in the B-VPLS FDB, it is unicast.
ISID	Displays the 24 bit field carrying the service instance identifier associated with the frame. It is used at the destination PE as a demultiplex or field.
Router Oper State	Displays the operational state of the router
Route Dist.	Displays the route distinguisher (RD) type
VPRN Type	Displays the VPRN type
Oper Route Dist	Displays the IP address of the operational RD
Oper RD Type	Displays the operational RD type
AS Number	Displays the AS number
Router Id	Displays the router ID
ECMP	Displays the status of ECMP
ECMP Max Routes	Displays the maximum ECMP routes
Max IPv4 Routes	Displays the maximum IPv4 routes
Local Rt Domain-id	Displays the local route domain ID

## base

### Syntax

**base**

### Context

[\[Tree\]](#) (show>service>id>mld-snooping base)

### Full Context

show service id mld-snooping base

### Description

This command displays basic MLD snooping information.

## Platforms

All

## base

## Syntax

**base**

## Context

[\[Tree\]](#) (show>service>id>spb base)

## Full Context

show service id spb base

## Description

This command displays SPB base information.

## Platforms

All

## Output

The following output is an example of service SPB base information.

### Output Example

```
*A:Dut-A# show service id 100001 spb base
=====
Service SPB Information
=====
Admin State      : Up                Oper State      : Up
ISIS Instance    : 1024                FID             : 1
Bridge Priority   : 8                Fwd Tree Top Ucast : spf
Fwd Tree Top Mcast : st
Bridge Id        : 80:00.00:10:00:01:00:01
Mcast Desig Bridge : 80:00.00:10:00:01:00:01
=====

ISIS Interfaces
=====
Interface                Level CircID  Oper State  L1/L2 Metric
-----
sap:1/2/2:1.1            L1    65536    Up          10/-
sap:1/2/3:1.1            L1    65537    Up          10/-
-----
Interfaces : 2
=====

FID ranges using ECT Algorithm
-----
1-99    low-path-id
100-100 high-path-id
101-4095 low-path-id
=====
```

## 5.3 base-routing-instance

### base-routing-instance

#### Syntax

**base-routing-instance** [**locator** *locator-name*] [**end-x**] [**end-dt4**] [**end-dt6**] [**end-dt46**] [**end**]

**base-routing-instance all**

**base-routing-instance micro** [**micro-segment-locator** *locator-name*] [**ua**] [**udt4**] [**udt6**] [**udt46**]

#### Context

[\[Tree\]](#) (show>router>srv6 base-routing-instance)

#### Full Context

show router segment-routing-v6 base-routing-instance

#### Description

This command displays SRv6 Base routing instances.

#### Parameters

##### **locator-name**

Specifies the locator or micro-segment locator name, up to 64 characters.

##### **end-x**

Displays the End.X SID function associated with a P2P interface.

##### **end-dt4**

Displays the End.DT4 function associated with the Base routing instance.

##### **end-dt6**

Displays the End.DT6 function associated with the Base routing instance.

##### **end-dt46**

Displays the End.DT46 function associated with the Base routing instance.

##### **end**

Displays the End SID function of a locator.

##### **ua**

Displays the uA SID function associated with a P2P interface.

##### **udt4**

Displays the uDT4 function associated with the Base routing instance.

##### **udt6**

Displays the uDT6 function associated with the Base routing instance.

## udt46

Displays the uDT46 function associated with the Base routing instance.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## 5.4 bcg

### bcg

#### Syntax

**bcg** *Burst-Control-Group-name* **member-queues** [ **at-risk-only**] [**exp-util-bw** *megabits-persecond*] [**port** *port-id*] [**sap** *sap-id*] [**subscriber** *sub-ident*] [**access-queue-grp** *queue-group-name*] [**service-id** *service-id*]

**bcg** *burst-control-group-name* [**member-queues**] [**exp-util-bw** *mega-bits-per-second*]

**bcg** *card-slot-number* [**ingress** | **egress**]

#### Context

[\[Tree\]](#) (show>qos bcg)

#### Full Context

show qos bcg

#### Description

The **show qos bcg** command outputs the current and historical visitation time associated with the specified BCG name.

A Burst Control Group (BCG) represents a list of queues that share the same non-scheduling PIR and CIR bucket target update interval. When a queue's scheduled rate bursts above its PIR bucket depth, the queue is removed from its scheduling context. The system uses a BCG in order to visit the queues PIR bucket to periodically drain an appropriate amount from the bucket. When the bucket has been drained below the PIR bucket threshold, the queue is allowed back onto its scheduling context. The amount decremented from the bucket is a function of the amount of time that has elapsed since the last bucket update and the queue's shaping rate (PIR). If the queue's shaping rate is configured as 1 Mb/s and 1 ms has elapsed since the last bucket update, the system decrements the PIR bucket by 125 bytes. One caveat is that the bucket cannot be decremented past a depth of 0. This fact drives how the system chooses which BCG is used to manage the queue bucket update interval.

If a queue's shaping rate is 1 Mb/s and the threshold (burst limit) is set to 10 kbytes, the maximum amount of time that can expire before the queue is updated without resulting in a negative bucket depth is 81.92 ms. This can be calculated by taking the number of bits represented by the bucket depth (10 kbytes = 10 \* 1,024 \* 8 = 81,920 bits) and dividing it by the rate (81,920 bits / 1,000,000 bits per second = 81.92 ms). The queue is not removed from the scheduler until the PIR bucket depth has equaled or exceeded the configured burst threshold, so the bucket is at least 10 kbytes deep. If the system visits the queue PIR bucket within 81.92 ms, the resulting decrement operation leaves the bucket. If the system takes longer

than 81.92 ms, the decrement result will be greater than 10 kbytes and part of the decrement result is lost. The net result is that, because of less than timely updates, the queue will not be returned to the scheduler context fast enough and some shaping bandwidth for the queue will be lost (underrun the shaping rate).

Each FP2- and FP3-based Q-chip maintains eight BCGs, each targeting a certain queue bucket visitation time. A 1 s, 40 ms, 20 ms, 10 ms, 5 ms, 1 ms, 500  $\mu$ s, and 100  $\mu$ s BCG is supported. An FP4- or FP5-based Q-chip has an additional four BCGs with target visitation times of 50  $\mu$ s, 10  $\mu$ s, 5  $\mu$ s, and 1  $\mu$ s. By default, queues are placed in a BCG based on shaping rate and the queue's burst limit (PIR threshold depth) is set based on the BCG visitation time and the queue's specified shaping rate.

When explicit burst-limit threshold values are defined for a shaping queue, the system picks an appropriate BCG based on the queue's configured shaping rate and the explicit threshold to find a BCG with the best target visitation time that results in worst-case decrement values that are less than the configured threshold. However, when a queue is placed on a 'faster' BCG, more visitation resources are consumed and it is possible that the system will not meet a queue's decrement constraints.

The **show qos bcg** command allows visibility into a BCG's historic and current visitation time. The system samples the amount of time it takes each list to visit each of its associated queues once each second and stores the last 10 samples. It also keeps the longest visitation time seen since the last time the BCG statistics were cleared, the longest visitation time for the current queue-to-BCG lists associations, calculated longest visitation time based on maximum scheduling bandwidth, and the longest visitation time for an optionally defined scheduling rate.

With each sample, the system indirectly calculates the amount of scheduling bandwidth based on how many Q-chip resources were diverted from BCG visitation processing. This calculated scheduling bandwidth is used to evaluate the worst-case visitation times for each BCG. The calculated scheduling bandwidth value is stored with the longest-seen-visitiation time and the longest-seen-visitiation time with the current queue-to-BCG mappings. This is not applicable to an FP4- or FP5-based Q-chip, so the **exp-util-bw** parameter is not applicable to an FP4- or FP5-based Q-chip.

## Parameters

### **Burst-Control-Group-name**

Specifies which globally unique Burst Control Group to display. If the specified Burst Control Group does not exist, the show command will fail.

**Values** <slot>/<fp>-< target-visitiation-time>[-<direction>]

*slot* - 1 to 20

*fp* - 1 to 8

*target-visitiation-time* -1  $\mu$ s, 5  $\mu$ s, 10  $\mu$ s, 50  $\mu$ s, 100  $\mu$ s, 500  $\mu$ s, 1ms, 5ms, 10ms, 20ms, 40ms, 1s

*direction* - i, e

### **member-queues**

Includes a list of all queues attached to the specified burst-control-group-name. The 100% scheduling bandwidth used in the 'at-risk' determination may be overridden with a specified scheduling bandwidth by using the exp-util-bw parameter. When the **member-queues** parameter is specified, the output includes a single-entry summary of the internal queues.

### **exp-util-bw mega-bits-per-second**

Displays a calculated worst-case visitation rate for the specified BCG name based on the specified value of *megabits-persecond* which also modifies the member queue's 'at-risk' state output. This parameter is not applicable to FP4- or FP5-based hardware which has



dedicated internal resources for handling BCG visitations and is unaffected by scheduling bandwidth.

**Values** 0 to 4294967

**port *port-id***

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues associated with the specified *port-id*. If the specified *port-id* does not exist, the show command will fail.

**Values** Up to 17 characters

**sap *sap-id***

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues associated with the specified *sap-id*. If the specified *sap-id* does not exist, the show command will fail.

**Values** Up to 64 characters

**subscriber *sub-ident***

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues associated with the specified *sub-ident*. If the specified *sub-ident* does not exist, the show command will fail.

**Values** Up to 32 characters

**access-queue-grp *queue-group-name***

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues within the specified *queue-group-name*. If the specified *queue-group-name* is not found, the show command will fail.

**Values** Up to 32 characters

**service *service-id***

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues associated with the specified *service-id*. If the specified *service-id* does not exist, the show command will fail.

**Values** 1 to 2147483647

***card-slot-number***

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for all queues associated with the specified *card-slot-number*. If the specified *card-slot-number* does not exist, the show command will fail.

**Values** 1 to 40

**[*ingress* | *egress*]**

The **ingress** and **egress** keywords specify the direction to display and are mutually exclusive.

**Platforms**

All

## 5.5 bd

bd

### Syntax

**bd** [*bridge-id*]

### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>lanext bd)

### Full Context

show subscriber-mgmt vrgw lanext bd

### Description

This command displays information for the specified HLE bridge. If no bridge is specified, then all domains are listed.

### Parameters

***bridge-id***

Specifies the BD ID.

**Values** 1 to 4294967295

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of HLE bridge information.

#### Output Example

```
show subscriber-mgmt vrgw lanext bd 100
=====
BRIDGE DOMAIN(S)
=====
BRIDGE-ID           : 100
VNI                  : 1
ROUTE TARGET        : TARGET:100:100
ROUTE DISTINGUISHER : 100:100
WLANGW GRPID        : 1
ISA MEMBERID        : 1
WLANGW BD VLANTAG   : N/A
WLANGW BD SERVICE   : 500
WLANGW BD INTERFACE : G1
WLANGW BD MAC TRANSLATION : N/A
WLANGW BD MAC        : AA:BB:CC:00:00:01
WLANGW BD ASSIST.ADDR.RES : DISABLED
WLANGW BD NETW MAXMAC : 20
```

```
WLANGW BD NETW STATE      : ENABLED
WLANGW BD ACCS MAXMAC     : 20
-----
NO. OF BRIDGE DOMAINS: 1
=====
```

## bd

### Syntax

**bd** *bridge-id*

### Context

[\[Tree\]](#) (tools>perform>wlan-gw>lanext bd)

[\[Tree\]](#) (tools>dump>wlan-gw>lanext bd)

### Full Context

tools perform wlan-gw lanext bd

tools dump wlan-gw lanext bd

### Description

Commands in this context enter the specified HLE BD to perform tools commands.

### Parameters

*bridge-id*

Specifies the HLE BD ID.

**Values** 1 to 4294967295

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 5.6 bfd

## bfd

### Syntax

**bfd**

### Context

[\[Tree\]](#) (tools>dump>router bfd)

### Full Context

tools dump router bfd

### Description

Commands in this context dump LSP-BFD information for LDP and RSVP LSPs.

### Platforms

All

**bfd**

### Syntax

**bfd**

### Context

[\[Tree\]](#) (show>router bfd)

### Full Context

show router bfd

### Description

Commands in this context display bidirectional forwarding detection (BFD) information.

### Platforms

All

**bfd**

### Syntax

**bfd**

### Context

[\[Tree\]](#) (clear>router bfd)

### Full Context

clear router bfd

### Description

Commands in this context clear bidirectional forwarding (BFD) sessions and statistics.

### Platforms

All

## bfd

### Syntax

**bfd**

### Context

[\[Tree\]](#) (show>lag bfd)

### Full Context

show lag bfd

### Description

This command displays per-member BFD information.

### Platforms

All

## 5.7 bfd-template

## bfd-template

### Syntax

**bfd-template** *template-name*

**bfd-template**

### Context

[\[Tree\]](#) (show>router>bfd bfd-template)

### Full Context

show router bfd bfd-template

### Description

This command displays BFD template information.

### Parameters

***template-name***

Displays the BFD template name, up to 32 characters.

### Platforms

All

## Output

The following output is an example of BFD template information.

### Output Example

```
A:node-2# show router bfd bfd-template "privatebed-bfd-template"
=====
BFD Template privatebed-bfd-template
=====
Template Name       : privatebed-*  Template Type       : cpmNp
Transmit Timer      : 10 msec       Receive Timer       : 10 msec
CV Transmit Interval : 1000 msec
Template Multiplier  : 3           Echo Receive Interval : 100 msec

Mpls-tp Association
privatebed-oam-template
=====
* indicates that the corresponding row element may have been truncated.
*A:mlstp-dutA# show router bfd session
=====
BFD Session
=====
Interface/Lsp Name      State      Tx Intvl  Rx Intvl  Multipl
Remote Address/Info     Protocols Tx Pkts   Rx Pkts   Type
-----
wp::lsp-32              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-33              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-34              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-35              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-36              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-37              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-38              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-39              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-40              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
wp::lsp-41              Down (1)   1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-32              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-33              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-34              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-35              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-36              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-37              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-38              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
pp::lsp-39              Up (3)     1000      1000      3
0::0.0.0.0             mplsTp    N/A       N/A       cpm-np
```

```

pp::lsp-40          Up (3)          1000    1000    3
  0::0.0.0.0       mplsTp         N/A     N/A     cpm-np
pp::lsp-41          Up (3)          1000    1000    3
  0::0.0.0.0       mplsTp         N/A     N/A     cpm-np
-----
No. of BFD sessions: 20
-----
wp = Working path   pp = Protecting path
=====
    
```

```

A:node-2# show router bfd bfd-template "privatebed-bfd-template"
=====
BFD Template privatebed-bfd-template
=====
Template Name       : privatebed-*  Template Type       : cpmNp
Transmit Timer      : 10 msec       Receive Timer       : 10 msec
CV Transmit Interval : 1000 msec
Template Multiplier : 3           Echo Receive Interval : 100 msec

Mpls-tp Association
privatebed-oam-template
=====
* indicates that the corresponding row element may have been truncated.
    
```

## 5.8 bfd-templates-in-use

### bfd-templates-in-use

#### Syntax

**bfd-templates-in-use**

#### Context

[\[Tree\]](#) (tools>dump>router>ldp>lsp-bfd bfd-templates-in-use)

#### Full Context

tools dump router ldp lsp-bfd bfd-templates-in-use

#### Description

This command indicates the named BFD templates that are configured for use by LSP BFD for LDP.

#### Platforms

All

## 5.9 bgp

```
bgp
```

### Syntax

```
bgp [bgp-instance]
```

### Context

[\[Tree\]](#) (show>service>id bgp)

### Full Context

```
show service id bgp
```

### Description

This command displays BGP-related information for the service.

### Parameters

#### **bgp-instance**

Specifies the ID value for the BGP instance.

**Values** 1, 2

### Platforms

All

### Output

The following output is an example of BGP-related information, and [Table 47: Output Fields: Service BGP](#) describes the output fields.

#### Output Example

```
*A:PE-2>config>service>vpls$ /show service id 1985 bgp
=====
BGP Information
=====
Vsi-Import      : None
Vsi-Export      : vsi-exp1
Route Dist      : None
Oper Route Dist : 0:0
Oper RD Type    : none
Rte-Target Import : 64500:1985      Rte-Target Export: None
Oper RT Imp Origin : configured    Oper RT Import   : 64500:1985
Oper RT Exp Origin : vsi          Oper RT Export   : Policy Based
PW-Template Id   : None
ADV Service MTU  : 1450
PW-Template Id   : None
-----
```



Table 47: Output Fields: Service BGP

Label	Description
Vsi-Import	Displays the names of the VSI import policies used for the service
Vsi-Export	Displays the names of the VSI export policies used for the service
Route Dist	Displays the configured route distinguisher (RD) component
Oper Route Dist	Displays the IP address of the operational RD
Oper RD Type	Displays the operational RD type
Rte-Target Import	Displays the IP address of the configured route target (RT) import <i>ext-community</i>
Rte-Target Export	Displays the IP address of the configured RT export <i>ext-community</i>
Oper RT Imp Origin	Displays the origin of the operational RT import information
Oper RT Import	Displays the operational RT import information
Oper Rt Exp Origin	Displays the origin of the operational RT export information
Oper Rt Export	Displays the operational RT export information
ADV Service MTU	Displays the MTU value that is configured using the <b>adv-service-mtu</b> command
PW-Template Id	Displays the configured pseudowire (PW) template ID

## bgp

### Syntax

**bgp**

### Context

**[Tree]** (clear>router bgp)

### Full Context

clear router bgp

### Description

This command clears or resets the route damping information for received routes.

## Platforms

All

bgp

## Syntax

bgp

## Context

[\[Tree\]](#) (show>router bgp)

## Full Context

show router bgp

## Description

Commands in this context display BGP related information.

## Platforms

All

bgp

## Syntax

**bgp** [*color color*] [**end-point** {*ipv4-address* | *ipv6-address*}] [**preference** *preference-id*] [**distinguisher** *distinguisher-id*]

**bgp summary**

## Context

[\[Tree\]](#) (show>router>seg-rt>sr-policies bgp)

## Full Context

show router segment-routing sr-policies bgp

## Description

This command displays the traffic statistics of all or a filtered set of the BGP policies, or displays summary parameters.

## Parameters

*color*

Filters on the color.

**Values** 0 to 4294967295

**ipv4-address | ipv6-address**

Filters on the end-point IPv4 or IPv6 address.

**Values**    ipv4-address — a.b.c.d  
               ipv6-address — x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d:d:d:d  
               x — [0 to FFFF]H  
               d — [0 to 255]D

**preference-id**

Filters on the preference ID.

**Values**    0 to 4294967295

**distinguisher-id**

Filters on the distinguisher ID.

**Values**    0 to 4294967295

**summary**

Displays the summary information for the BGP policies.

**Platforms**

All

**Output**

The following outputs are examples of traffic statistics for the BGP policies.

**Output Example Information for all BGP Policies**

```
*A:Dut-C# show router segment-routing sr-policies bgp
=====
SR-Policies Path
=====
-----
Type           : srv6
Active         : No                Owner           : bgp
Color         : 50
Head          : 0.0.0.0           Endpoint Addr   : 3ffe::a14:102
RD            : 5                 Preference      : 14
SRv6 BSID 1   : 1111:1:1:1:0:b::
TunnelId      : 917511            Age             : 0
Origin ASN    : 2                 Origin          : 3ffe::a14:102
NumReEval     : 7                 ReEvalReason   : tunnel-down
NumActPathChange: 0             Last Change    : 06/13/2022 17:45:57
Maintenance Policy: N/A

Path Segment Lists:
Segment-List   : 1                Weight          : 1
S-BFD State    : Down            S-BFD Transitio*: 0
Num Segments   : 2                Last Change    : 06/10/2022 17:07:01
  Seg 1 SID    : 3333:3:3:3:0:a:: State           : resolved-up
  Seg 2 SID    : 2222:2:2:2:0:a:: State           : N/A
=====
* indicates that the corresponding row element may have been truncated.
```

### Output Example Information for a Subset of BGP Policies

```
*A:Dut-C# show router segment-routing sr-policies bgp end-point 3ffe::a14:102
=====
SR-Policies Path
=====
-----
Type           : srv6
Active         : No           Owner           : bgp
Color          : 50
Head           : 0.0.0.0      Endpoint Addr   : 3ffe::a14:102
RD             : 5           Preference      : 14
SRv6 BSID 1   : 1111:1:1:1:0:b::
TunnelId      : 917511       Age             : 0
Origin ASN    : 2           Origin          : 3ffe::a14:102
NumReEval     : 2           ReEvalReason    : tunnel-down
NumActPathChange: 0        Last Change     : 06/13/2022 17:45:57
Maintenance Policy: N/A

Path Segment Lists:
Segment-List   : 1           Weight          : 1
S-BFD State    : Down       S-BFD Transitio*: 0
Num Segments   : 2           Last Change     : 06/10/2022 17:07:01
  Seg 1 SID    : 3333:3:3:3:0:a:: State           : resolved-up
  Seg 2 SID    : 2222:2:2:2:0:a:: State           : N/A
=====
* indicates that the corresponding row element may have been truncated.
```

## bgp

### Syntax

**bgp**

### Context

[\[Tree\]](#) (monitor>router bgp)

### Full Context

monitor router bgp

### Description

This command monitors commands for the BGP instance.

### Platforms

All

## 5.10 bgp-auto-rd

bgp-auto-rd

### Syntax

**bgp-auto-rd**

### Context

[\[Tree\]](#) (show>service>system bgp-auto-rd)

### Full Context

show service system bgp-auto-rd

### Description

This command displays BGP auto route distinguisher (RD) information.

### Platforms

All

### Output

The following shows an example of BGP auto route distinguisher (RD) information

### Output Example

```
*A:Dut#show service system bgp-auto-rd
=====
Service BGP Auto Route Distinguisher Information
=====
IP address       : 192.0.2.69
Comm Val Start  : 1200           End           : 1300
In Use          : 1
=====
```

## 5.11 bgp-evpn

bgp-evpn

### Syntax

**bgp-evpn** [**instance** *instance-id*]

### Context

[\[Tree\]](#) (show>service>id bgp-evpn)

## Full Context

```
show service id bgp-evpn
```

## Description

This command displays the **bgp-evpn** configured parameters for a specified service, including the administrative status of VXLAN, the configuration for **mac-advertisement** and **unknown-mac-route**, as well as the **mac-duplication** parameters. The command displays the duplicate MAC addresses that **mac-duplication** has detected.

This command also displays whether the **ip-route-advertisement** command (and the **incl-host** parameter) is enabled. If the service is BGP-EVPN MPLS, the command also displays the parameters corresponding to EVPN-MPLS.

## Parameters

### *instance-id*

Filters on the instance ID.

**Values** 1 to 2

## Platforms

All

## Output

The following output is an example of BGP EVPN information and [Table 48: Output Fields: Service BGP-EVPN](#) describes the output fields.

### Output Example

```
show service id 100 bgp-evpn
```

```
=====
BGP EVPN Table
=====
EVI                : 100                Creation Origin   : manual
-----
Local AC Name      Eth Tag  Endpoint          Ingress Label
-----
mpls                1        mpls              0
srv6                1        srv6              0
-----
Number of local ACs : 2
-----
Remote AC Name     Eth Tag  Endpoint
-----
mpls                1        mpls
srv6                1        srv6
-----
Number of Remote ACs : 2
=====
BGP EVPN MPLS Information
```

```

=====
Admin Status      : Enabled          Bgp Instance      : 1
Force Vlan Fwding : Disabled
Force QinQ Fwding : none
Route NextHop Type : system-ipv4
Control Word      : Disabled
Max Ecmp Routes   : 2
Entropy Label     : Disabled
Default Route Tag : none
Oper Group        :
MH Mode           : network
Domain-Id         : 64500:1
Evi 3-byte Auto-RT : Disabled
Dyn Egr Lbl Limit : Disabled
Hash Label        : Disabled
-----

=====
BGP EVPN MPLS Auto Bind Tunnel Information
=====
Allow-Flex-Algo-Fallback : false
Resolution                : any          Strict Tnl Tag    : false
Max Ecmp Routes           : 1
Bgp Instance              : 1          Untagged Route    : none
Filter Tunnel Types       : (Not Specified)
Weighted Ecmp             : false
-----

=====
Segment Routing v6 Instance 2 Service 100
=====
Admin State            : Enabled
Srv6 Instance         : 1
Default Locator        : LOC-2-16bits

Oper Group             : (Not Specified)
Default Route Tag     : 0x0
Source Address         : 2001:db8::3
ECMP                   : 1
Force Vlan VC Fwd     : disabled
Next Hop Type         : system-ipv4
Evi 3-byte Auto-RT    : disabled
Route Resolution      : route-table
Force QinQ VC Fwd     : none
MH Mode               : access
Domain-Id             : 64500:2
=====
    
```

Table 48: Output Fields: Service BGP-EVPN

Label	Description
BGP EVPN Table	
EVI	The EVI value
Creation Origin	The creation origin
Local AC Name	The local AC name

Label	Description
Eth Tag	The Ethernet tag
Endpoint	The endpoint
Ingress Label	The ingress label
Number of Local ACs	The total number of localACs
Remote AC Name	The remote AC name
Number of Remote ACs	The total number of remote ACs
BGP EVPN MPLS Information	
Admin Status	The administrative state
BGP Instance	Displays the operational RT import information
Force Vlan Fwding	The force VLAN forwarding state
Force Qinq Fwding	The force QinQ forwarding state
RouteNextHop Type	The route next-hop type
Control Word	The control word state
Max Ecmp Routes	The maximum number of ECMP routes
Entropy Label	The entropy label state
Default Route Tag	The route tag
Oper Group	The operational group
MH Mode	The MH mode
Domain-Id	The domain ID
Evi 3-byte Auto-RT	The EVI 3-byte auto RT state
Dyn Egr Lbl Limit	The dynamic egress label limit state
Hash Label	The hash label state
BGP EVPN MPLS Auto Bind Tunnel Information	
Allow-Flex-Algo-Fallback	The allow Flex Algo fallback state
Resolution	The resolution type
Strict Tnl Tag	The strict tunnel tag state



Label	Description
Max Ecmp Routes	The maximum number of ECMP routes
Bgp Instance	The BGP instance ID
Untagged Route	The untagged route
Filter Tunnel Types	The filter tunnel types
Weighted Ecmp	The weighted ECMP state
Segment Routing v6 Instance X Service Y	
Admin State	The administrative state
Srv6 Instance	The SRv6 instance ID
Default Locator	The default locator type
Oper Group	The operational group
Default Route Tag	The default route tag value
Source Address	The source IP address
ECMP	The ECMP value
Force Vlan VC Fwd	The force VLAN VC forwarding state
Next Hop Type	The next-hop type
Evi 3-byte Auto-RT	The EVI 3-byte auto-RT state
Route Resolution	The route resolution type
Force QinQ VC Fwd	The force QinQ VC forwarding state
MH Mode	The MH mode type
Domain-Id	The domain ID

```
show service id 110 bgp-evpn
```

```
=====
BGP EVPN Table
=====
```

```
EVI          : 110
Creation Origin : manual
```

```
Adv L2 Attributes : Enabled
Ignore Mtu Mismatch: Disabled
```

```
MAC/IP Routes
```

```
MAC Advertisement : Enabled           Unknown MAC Route : Disabled
CFM MAC Advertise : Disabled
```

ARP/ND Ext Comm Adv: Disabled

Multicast Routes

Sel Mcast Advert : Disabled  
Ing Rep Inc McastAd: Enabled

IP Prefix Routes

IP Route Advert : Disabled

MAC Duplication Detection

Num. Moves : 5 Window : 3  
Retry : 9 Number of Dup MACs : 0  
Black Hole : Disabled

-----  
Detected Duplicate MAC Addresses Time Detected  
-----  
=====

-----  
Locally Trusted MAC  
-----

MAC Address Time Detected  
-----  
00:de:ad:be:ef:04 04/11/2023 12:59:01  
-----  
=====

=====

BGP EVPN MPLS Information

=====

Admin Status : Enabled Bgp Instance : 1  
Force Vlan Fwding : Disabled  
Force Qinq Fwding : none  
Route NextHop Type : explicit  
NextHop Addr : 2001:db8::3  
Control Word : Enabled  
Max Ecmp Routes : 1  
Entropy Label : Disabled  
Default Route Tag : none  
Split Horizon Group: (Not Specified)  
Ingress Rep BUM Lbl: Enabled  
Ingress Ucast Lbl : 524254 Ingress Mcast Lbl : 524250  
RestProtSrcMacAct : none  
Evpn Mpls Encap : Enabled Evpn MplsoUdp : Disabled  
Oper Group :  
MH Mode : network  
Evi 3-byte Auto-RT : Disabled  
Dyn Egr Lbl Limit : Disabled  
-----  
=====

=====

BGP EVPN MPLS Auto Bind Tunnel Information

=====

Allow-Flex-Algo-Fallback : false  
Resolution : any Strict Tnl Tag : false  
Max Ecmp Routes : 1  
Bgp Instance : 1  
Filter Tunnel Types : (Not Specified)  
Weighted Ecmp : false  
-----  
=====

## bgp-evpn

### Syntax

**bgp-evpn** [**ethernet-segment**]

**bgp-evpn ethernet-segment name** *name* [**all**] [**evi** *evi*] [**isid** *isid*]

### Context

[\[Tree\]](#) (show>service>system bgp-evpn)

### Full Context

show service system bgp-evpn

### Description

This command displays all the information related to the base EVPN instance, including the base RD used for Ethernet Segment (ES) routes, the ESs or individual ES information.

### Parameters

#### **ethernet-segment**

Displays information for ES.

#### **name**

Specifies the name of an ES, up to 32 characters.

#### **all**

Displays all available information for the specified ES.

#### **evi**

Displays information for the specified EVI.

**Values** 1 to 65535

#### **isid**

Displays information for the specified ISID.

**Values** 1 to 16777215

### Platforms

All

### Output

The following output is an example of service system BGP EVPN information, and [Table 49: BGP EVPN Output Fields](#) describes the output fields.

Table 49: BGP EVPN Output Fields

Label	Description
Eth Seg Route Dist	Specifies the ES Route Distinguisher.
Eth Seg Oper Route Dist	Specifies the operational ES Route Distinguisher.
Eth Seg Oper Route Dist Type	Specifies the operational ES Route Distinguisher type.
Ad Per ES Route Target	Specifies the AD per-ES route target.
Leaf Label	Specifies the leaf label.
Alloc Leaf Label	Specifies the allocated leaf label.
Leaf Label Value	Specifies the leaf label value.
EVI RT set Route Dist.	Specifies the EVI RT set range.
Extended Evi Range	Specifies the EVI extended range status.
Mcast Leave Sync Prop	Specifies the multicast leave synchronization propagation time.
Attribute Uniform Prop	Specifies the attribute uniform propagation configuration.
BGP Path Selection	Specifies the configuration of the BGP Path Selection.

### Output Example

```
*A:PE-3# show service system bgp-evpn
=====
System BGP EVPN Information
=====
Eth Seg Route Dist.           : <none>
Eth Seg Oper Route Dist.     : 192.0.2.3:0
Eth Seg Oper Route Dist Type : default
Ad Per ES Route Target       : evi-rt
EVI RT set Route Dist.       : 1.2.3.6:1 - 1.2.3.6:512
Extended Evi Range           : Disabled
Leaf Label                    : 524259
Alloc Leaf Label              : Enabled
Leaf Label Value              : dynamic
Mcast Leave Sync Prop         : 5
Attribute Uniform Prop        : Enabled
BGP Path Selection            : Enabled
```

```

=====
*A:PE1# show service system bgp-evpn ethernet-segment
=====
Service Ethernet Segment
=====
Name                               ESI                               Admin   Oper
-----
ESI-71                             01:00:00:00:00:71:00:00:00:01 Enabled Up
-----
Entries found: 1
=====

*A:PE1# show service system bgp-evpn ethernet-segment name "ESI-71" all
=====
Service Ethernet Segment
=====
Name                               : ESI-71
Admin State                         : Enabled           Oper State       : Up
ESI                                 : 01:00:00:00:00:71:00:00:00:01
Multi-homing                       : allActive        Oper Multi-homing : allActive
Source BMac LSB                    : 71-71
ES BMac Tbl Size                   : 8                ES BMac Entries  : 1
Lag Id                             : 1
ES Activation Timer                 : 0 secs
Exp/Imp Route-Target               : target:00:00:00:00:71:00

Svc Carving                         : auto
ES SHG Label                       : 262142
=====

=====
EVI Information
=====
EVI          SvcId          Actv Timer Rem    DF
-----
1            1                0                no
-----
Number of entries: 1
=====

DF Candidate list
-----
EVI          DF Address
-----
1            192.0.2.69
1            192.0.2.72
-----
Number of entries: 2
=====

ISID Information
=====
ISID          SvcId          Actv Timer Rem    DF
-----
20001        20001         0                no
-----
Number of entries: 1
=====

DF Candidate list
    
```

```
-----  
ISID                               DF Address  
-----  
20001                              192.0.2.69  
20001                              192.0.2.72  
-----  
Number of entries: 2  
-----  
=====  
BMAC Information  
=====  
SvcId                               BMacAddress  
-----  
20000                              00:00:00:00:71:71  
-----  
Number of entries: 1  
=====
```

## bgp-evpn

### Syntax

**bgp-evpn**

### Context

[\[Tree\]](#) (tools>dump>service>system bgp-evpn)

### Full Context

tools dump service system bgp-evpn

### Description

Commands in this context display information about the BGP-EVPN base instance.

### Platforms

All

## 5.12 bgp-evpn-multi-homing

### bgp-evpn-multi-homing

### Syntax

**bgp-evpn-multi-homing**

### Context

[\[Tree\]](#) (show>redundancy bgp-evpn-multi-homing)

## Full Context

```
show redundancy bgp-evpn-multi-homing
```

## Description

This command shows the information related to the EVPN global timers.

## Platforms

All

## Output

### Output Example

```
*A:PE2# show redundancy bgp-evpn-multi-homing
=====
Redundancy BGP EVPN Multi-homing Information
=====
Boot-Timer           : 10 secs
Boot-Timer Remaining : 0 secs
ES Activation Timer  : 3 secs
=====
```

## 5.13 bgp-ipvpn

### bgp-ipvpn

## Syntax

```
bgp-ipvpn
```

## Context

[\[Tree\]](#) (show>service>id bgp-ipvpn)

## Full Context

```
show service id bgp-ipvpn
```

## Description

This command displays the BGP IPVPN configured parameters for a specified service.

## Platforms

All

## Output

The following output is an example of BGP IPVPN information, and [Table 50: BGP IPVPN Output Fields](#) describes the output fields.

Table 50: BGP IPVPN Output Fields

Label	Description
Admin State	Specifies the administrative state
VRF Import	Specifies the VRF import
VRF Export	Specifies the VRF export
Route Dist.	Specifies the route distinguisher
Oper Route Dist	Specifies the operational route distinguisher
Oper RD Type	Specifies the operational RD type
Route Target	Specifies the route target
Route Target Impor	Specifies the route target import
Route Target Expor	Specifies the route target export
D-Path Domain-Id	Specifies the D-Path domain ID

**Output Example**

```
# show service id 2000 bgp-ipvpn

=====
Service 2000 BGP-IPVPN MPLS Information
=====
Admin State      : Up
VRF Import      : None
VRF Export      : None
Route Dist.     : 0:0
Oper Route Dist : 192.0.2.3:64000
Oper RD Type    : auto
Route Target    : None
Route Target Impor: None
Route Target Expor: None
D-Path Domain-Id : 65000:1
<snip>
```



## 5.14 bgp-ls

### bgp-ls

#### Syntax

**bgp-ls** [**hunt**] [**node** | **link** | **ipv4-prefix** [*ipv4-prefix/mask-len*]]

#### Context

[\[Tree\]](#) (show>router>bgp>routes bgp-ls)

#### Full Context

show router bgp routes bgp-ls

#### Description

This command displays BGP-Link State (BGP-LS) routes.

#### Parameters

##### hunt

Displays detailed information about the routes, including information about the advertised routes (RIB-OUT).

##### node

Displays BGP-LS link NLRI routes.

##### link

Displays BGP-LS node NLRI routes.

##### ipv4-prefix

Displays BGP-LS IPv4-prefix NLRI routes.

##### *ipv4-prefix/prefix-length*

Displays the entries matching the specified IPv4 prefix and length.

#### Values

ipv4-prefix:	a.b.c.d (host bits must be 0)
ipv4-prefix-length:	0 to 32

#### Platforms

All

#### Output

The following outputs are examples of information displayed by the **bgp-ls** command.

## Output Example

```
# show router bgp routes bgp-ls
=====
BGP-LS NLRIs
=====
-----
Type: Node
Protocol: ISIS | OSPFLevel: L1 | L2 | NA
Identifier:
Network : 215.0.0.0/24
Nexthop : 202.50.0.2
Path Id : None
From : 10.255.105.141
AS Path: 65534
Local Node
  Name:
  Autonomous System:
  Area ID:
  Rtr ID:
  Flags:
Type: Link
Protocol: ISIS | OSPFLevel: L1 | L2 | NA
Identifier:
Network : 215.0.0.0/24
Nexthop : 202.50.0.2
Path Id : None
From : 10.255.105.141
AS Path: 65534
Local Node
  Name:
  Autonomous System:
  Area ID:
  Rtr ID:
Remote Node
  Name:
  Autonomous System:
  Area ID:
  Rtr ID:
Descriptor
  IPv4 Address: 10.10.1.1
Attributes
  Flags:
  IGP Metric: 1000
  Admin-Grp: 0
  Maximum Link BW (kbps): 100000
  Maximum Reservable BW (kbps): 100000
  TE Default Metric: 1000
  Unreserved BW (kbps): 10000
Type: IPv4 Prefix
Protocol: ISIS | OSPFLevel: L1 | L2 | NA
Identifier:
Network : 215.0.0.0/24
Nexthop : 202.50.0.2
Path Id : None
From : 10.255.105.141
AS Path: 65534
Local Node
  Name:
  Autonomous System:
  Area ID: 0.0.0.0
  Rtr ID: 10.20.1.6
  Flags:
```

```
Prefix descriptor
IPv4 Address: 10.20.1.6
Prefix-len: 32
MT_ID :0
Route Type :Unknown
```

```
# show router bgp routes bgp-ls hunt link
```

```
=====
BGP Router ID:38.120.48.226   AS:65000   Local AS:65000
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
                l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP-LS Link NLRIs
=====
-----
RIB In Entries
-----
Network:
Type          : LINK-NLRI
Protocol      : ISIS Level-2          Identifier      : 0xa
Local Node descriptor:
Autonomous System : 0.0.253.232
Link State Id    : 10
IGP Router Id    : 0x38120048184
Remote Node descriptor:
Autonomous System : 0.0.253.232
Link State Id    : 10
IGP Router Id    : 0x38120048223
Link descriptor:
IPV4 Interface Addr: 10.0.14.184
IPV4 Neighbor Addr : 10.0.14.223
Nextthop      : 38.120.48.199
From          : 38.120.48.199
Res. Nextthop : 0.0.0.0
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : No Community Members
Cluster       : No Cluster Members
Originator Id : None
Flags         : Valid Best IGP
Route Source  : Internal
AS-Path       : No As-Path
Route Tag     : 0
Neighbor-AS   : N/A
Orig Validation: N/A
Source Class  : 0
Add Paths Send : Default
Last Modified : 02h27m50s
-----
Link State Attribute TLVs :
Administrative group (color) : 0x0
Maximum link bandwidth : 100000 Kbps
Max. reservable link bandwidth : 100000 Kbps
Unreserved bandwidth0 : 100000 Kbps
Unreserved bandwidth1 : 100000 Kbps
Unreserved bandwidth2 : 100000 Kbps
-----
Peer Router Id : 38.120.48.199
Interface Name : NotAvailable
Aggregator     : None
MED            : None
Dest Class     : 0
```

```
Unreserved bandwidth3 : 100000 Kbps
Unreserved bandwidth4 : 100000 Kbps
Unreserved bandwidth5 : 100000 Kbps
Unreserved bandwidth6 : 100000 Kbps
Unreserved bandwidth7 : 100000 Kbps
TE Default Metric : 100
IGP Metric : 100
Adjacency Segment Identifier (Adj-SID) :      flags 0x30 weight 0 sid 262136
-----
Network:
Type          : LINK-NLRI
Protocol      : ISIS Level-2          Identifier      : 0xa
Local Node descriptor:
  Autonomous System : 0.0.253.232
  Link State Id     : 10
  IGP Router Id     : 0x38120048184
Remote Node descriptor:
  Autonomous System : 0.0.253.232
  Link State Id     : 10
  IGP Router Id     : 0x38120048223
Link descriptor:
  IPV4 Interface Addr: 10.0.14.184
  IPV4 Neighbor Addr : 10.0.14.223
Nexthop      : 38.120.48.221
From         : 38.120.48.221
Res. Nexthop : 0.0.0.0
Local Pref.  : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : No Community Members
Cluster      : No Cluster Members
Originator Id : None
Flags        : Valid IGP
TieBreakReason : OriginatorID
Route Source  : Internal
AS-Path       : No As-Path
Route Tag     : 0
Neighbor-AS   : N/A
Orig Validation: N/A
Source Class  : 0
Add Paths Send : Default
Last Modified : 02h27m54s
Interface Name : NotAvailable
Aggregator     : None
MED            : None
Peer Router Id : 38.120.48.221
Dest Class     : 0
-----
Link State Attribute TLVs :
Administrative group (color) : 0x0
Maximum link bandwidth : 100000 Kbps
Max. reservable link bandwidth : 100000 Kbps
Unreserved bandwidth0 : 100000 Kbps
Unreserved bandwidth1 : 100000 Kbps
Unreserved bandwidth2 : 100000 Kbps
Unreserved bandwidth3 : 100000 Kbps
Unreserved bandwidth4 : 100000 Kbps
Unreserved bandwidth5 : 100000 Kbps
Unreserved bandwidth6 : 100000 Kbps
Unreserved bandwidth7 : 100000 Kbps
TE Default Metric : 100
IGP Metric : 100
Adjacency Segment Identifier (Adj-SID) :      flags 0x30 weight 0 sid 262136
-----
```

## 5.15 bgp-multi-homing

### bgp-multi-homing

#### Syntax

**bgp-multi-homing**

#### Context

[\[Tree\]](#) (show>redundancy bgp-multi-homing)

#### Full Context

show redundancy bgp-multi-homing

#### Description

This command displays BGP multi-homing information.

#### Platforms

All

## 5.16 bgp-nh-info

### bgp-nh-info

#### Syntax

**bgp-nh-info** [**location** *location-id*] [**bgp-nh** *ip-address*]

#### Context

[\[Tree\]](#) (show>router>bgp>orr bgp-nh-info)

#### Full Context

show router bgp optimal-route-reflection bgp-nh-info

#### Description

This command displays the calculated IGP cost from a particular location ID to all prefixes containing BGP next-hop addresses.

#### Parameters

***location-id***

Specifies the ORR location identifier.

**Values** 1 to 16 (7750 SR-12, VSR)  
 1 to 255 (all other platforms)

**ip-address**

Specifies the IPv4 or IPv6 BGP next-hop address.

**Values**

ipv4-address:	a.b.c.d.
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

**Platforms**

All

**Output**

The following table describes the command output fields for the **show router bgp optimal-route-reflection bgp-nh-info** command output.

*Table 51: ORR bgp-nh-info Fields*

Label	Description
Next Hop Loc	The address of the next-hop location.
Dest-Prefix	Displays the longest prefix match for the BGP next-hop address from the point of view of a specific location. Displays "unreachable" if no route exists to the BGP next-hop from the location.
DB-Source	Displays the source of the reachability information in the TE database.
Type	Displays the type of route or reachability, either intra-area or inter-area.
Proto	Displays the source protocol that is providing reachability to the BGP next-hop address.
Metric	Displays the IGP cost to reach the BGP next-hop from the location reference point.
Preference	Displays the routing preference of the route that is providing reachability to the BGP next-hop address. This is derived from standard protocol preference values.

## Output Example

```
*A:Dut-C# show router bgp optimal-route-reflection bgp-nh-info
=====
ORR BGP-NH Table (Router: Base)
=====
Location 1:
  Primary       : 1.1.1.1
  Secondary     : -
  Tertiary      : -
  Primary-ipv6  : 2001::1
  Secondary-ipv6 : -
  Tertiary-ipv6 : -
Age           : 00h00m00s
Spf wait      : 60
Initial wait  : 5
Second wait   : 15
-----
Next Hop
  Loc      Dest-Prefix          DB-Source  Type      Proto      Metric      Pref
-----
10.0.0.10
   1      Unreachable
192.0.2.1
   1      Unreachable
-----
No. of BGP-NHs: 2
=====
```

## 5.17 bgp-peering-policy

### bgp-peering-policy

#### Syntax

```
bgp-peering-policy [policy-name]
```

#### Context

[\[Tree\]](#) (show>subscr-mgmt bgp-peering-policy)

#### Full Context

```
show subscriber-mgmt bgp-peering-policy
```

#### Description

This command displays BGP peering policy information.

#### Parameters

***policy-name***

Specifies the BPG peering policy name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of BOF, and [Table 52: Show BGP peering policy fields](#) describes the output fields.

```
show subscriber-mgmt bgp-peering-policy "bgp-policy-1"
```

## Output Example

```
=====
BGP Peering Policy: bgp-policy-1
=====
Description      : BGPv4 peering policy / single hop / bfd
IP address family
  IPv4           : Yes
  IPv6           : Yes
Advertise Inactive : Inherited      Aggregator id zero : Inherited
AS Override       : Inherited      Auth Key Chain     : Inherited
Authentication Key : Inherited
BFD Enable        : Enabled         Cluster Id         : Inherited
Connect Retry     : Inherited      Damping           : Inherited
Disable Client Ref* : Inherited    Disable Communities: Inherited
Disable FE Failover: Inherited    Hold Time         : Inherited
Keep Alive        : Inherited      Local Address      : 10.3.2.254
Local AS          : 65536           Local Preference   : Inherited
Loop Detect       : Inherited      MED Out           : Inherited
Min Route Advertis* : Inherited
Multihop          : Inherited      Next Hop Self     : Inherited
Passive           : Inherited      Peer AS           : 65536
Preference        : Inherited      Prefix Limit      : Inherited
Prefix Log Only   : Inherited      Prefix Threshold  : Inherited
Remove Private AS : Inherited      TTL Security      : Inherited
Type              : Internal        Disable 4byte ASN : Inherited
Export Policy     : None Specified / Inherited
Import Policy     : None Specified / Inherited
Last Mgmt Change  : 05/22/2023 14:35:03

-----
Prefix Limits Per Address Family
-----
Family      Limit      Idle Timeout  Threshold Log Only  Post Import
-----
ipv4        100        forever       90         Enabled  Disabled
ipv6        50         forever       90         Enabled  Disabled
-----
* indicates that the corresponding row element may have been truncated.
```

Table 52: Show BGP peering policy fields

Label	Description
Description	Displays the description of the BGP peering policy
IP address family IPv4	Displays whether the IPv4 family is enabled



Label	Description
IP address family IPv6	Displays whether the IPv6 family is enabled
Advertise Inactive	Displays whether inactive BGP routes are advertised to other BGP peers
Aggregator id zero	Displays whether the router ID in the BGP aggregator path attribute is set to zero when BGP aggregates routes
AS Override	Displays whether the peer ASN is overridden with the local ASN in AS Path
Auth Key Chain	Displays the authentication key chain name
Authentication Key	Displays whether and authentication key is configured
BFD enable	Displays the BFD enable status
Cluster Id	Displays the cluster ID
Connect Retry	Displays the connect retry timer value in seconds
Damping	Displays whether BGP route damping for learned routes is enabled
Disable Client Ref*	Displays whether routes received from neighbors considered to be RR clients are reflected to other clients
Disable Communities	Displays whether standard or extended communities are sent
Disable FE Failover	Displays the BGP fast external failover state
Hold Time	Displays the hold time in seconds before closing the BGP connection
Keep Alive	Displays the keepalive timer value in seconds
Local Address	Displays the local IP address
Local AS	Displays the local AS value
Local Preference	Displays the local preference value
Loop Detect	Displays the loop detect type: drop-peer ignore-loop off discard-route
MED Out	Displays the Multi-Exit Discriminator value or "IGP Cost"
Min Route Advertis*	Displays the minimum interval in seconds for a prefix to be advertised to a peer
Multihop	Displays the TTL value entered in IP header of packets sent to peer

Label	Description
Next Hop Self	Displays whether the next hop path attribute is set to self when advertising
Passive	Displays whether to wait passively for BGP peer to connect
Peer AS	Displays the peer AS value
Preference	Displays the preference value
Prefix Limit	Displays the prefix limit type
Prefix Log Only	Displays the prefix log only type
Prefix Threshold	Displays the prefix threshold type
Remove Private AS	Displays whether private AS numbers up to first public ASN encountered should be removed
TTL Security	Displays the minimum TTL value for incoming BGP packets
Type	Displays the BGP peer type (Internal   External   No Type)
Disable 4byte ASN	Displays whether 4-byte AS numbers are used
Export Policy	Displays the export policies
Import Policy	Displays the import policies
Last Mgmt Change	Displays the date and time of the last management change
Prefix Limits Per Address Family	
Family	Displays the address family: ipv4   ipv6
Limit	Displays the maximum number of BGP routes per address family that can be received from an ESM dynamic BGP peer before an administrative action is taken
Idle Timeout	Displays the time, in minutes, before a BGP peer is automatically re-established after reaching the prefix limit. When unconfigured, this value is "forever" and a manual reset must be performed to re-establish the BGP peer after reaching the prefix limit.
Threshold	Displays the percentage threshold before triggering a warning message
Log Only	Displays whether only a warning message is sent or also the BGP session is taken down
Post Import	Displays the state on whether limits should be applied after import policies

## 5.18 bgp-route-distinguisher

### bgp-route-distinguisher

#### Syntax

**bgp-route-distinguisher** [vprn] [vpls] [epipe]

**bgp-route-distinguisher svc**

**bgp-route-distinguisher ad-evi-rt-set**

**bgp-route-distinguisher system**

#### Context

[\[Tree\]](#) (show>service>system bgp-route-distinguisher)

#### Full Context

show service system bgp-route-distinguisher

#### Description

This command displays the BGP operational route distinguishers (RDs) used by all the BGP-enabled services in the system. The information can be filtered by service: VPRN, VPLS, or Epipe. The output can also be filtered to show only the relevant RD information related to services ( **svc**), or the EVPN Auto-Discovery routes (**ad-evi-rt-set**), or the system RDs (**system**).

#### Platforms

All

#### Output

The following output is an example of service BGP RD information.

```
Auto-rd <none>
Ethernet-segment <none>
EVI RT Set RD Range 1.2.3.6:1-1.2.3.6:512 configured
// the above is the case when the "Extended Evi Range" is disabled.
// When enabled :it is "1.2.3.6:1-1.2.3.6:65535"
```

#### Output Example

```
*A:PE-2# show service system bgp-route-distinguisher
=====
Service Route Distinguishers
=====
Svc Id      Type  Oper Route-Distinguisher      Route-Distinguisher
-----
501         vprn  192.0.2.2:60000                auto
800         vprn  192.0.2.2:60001                auto
1           vpls  192.0.2.2:1                    configured
1           vpls  192.0.2.2:2                    configured
101        vpls  192.0.2.2:101                  configured
```

```

101      vpls 192.0.2.2:102      configured
500      vpls 192.0.2.2:500      derivedEvi
600      vpls 192.0.2.2:600      derivedEvi
804      vpls 192.0.2.2:804      derivedEvi
701      epipe 192.0.2.2:701     derivedEvi
702      epipe 192.0.2.2:702     derivedEvi
-----
Number of RD Entries: 11
=====
Service System BGP Route Distinguisher Information
=====
              Oper Route Distinguisher              Type
-----
Auto-rd          192.0.2.2:60000-192.0.2.2:65000    configured
Ethernet-segment 192.0.2.2:0                          default
EVI RT Set RD Range 1.2.3.6:1-1.2.3.6:512          configured
// the above is the case when the "Extended Evi Range" is disabled.
// When enabled :it is "1.2.3.6:1-1.2.3.6:65535"
=====
BGP EVPN Ethernet Segment AD EVI RT Set Route Distinguishers
=====
Eth Seg              EVI      Svc ID      Route Distinguisher
-----
Number of Entries: 0
=====
*A:PE-2# show service system bgp-route-distinguisher vpls
=====
Service Route Distinguishers
=====
Svc Id   Type   Oper Route-Distinguisher      Route-Distinguisher
-----
1        vpls  192.0.2.2:1                    configured
1        vpls  192.0.2.2:2                    configured
101      vpls  192.0.2.2:101                  configured
101      vpls  192.0.2.2:102                  configured
500      vpls  192.0.2.2:500                  derivedEvi
600      vpls  192.0.2.2:600                  derivedEvi
804      vpls  192.0.2.2:804                  derivedEvi
-----
Number of RD Entries: 7
=====
Service System BGP Route Distinguisher Information
=====
              Oper Route Distinguisher              Type
-----
Auto-rd          192.0.2.2:60000-192.0.2.2:65000    configured
Ethernet-segment 192.0.2.2:0                          default
EVI RT Set RD Range <none>
=====
BGP EVPN Ethernet Segment AD EVI RT Set Route Distinguishers
=====
Eth Seg              EVI      Svc ID      Route Distinguisher
-----
Number of Entries: 0
=====

```

## 5.19 bgp-vpws

```
bgp-vpws
```

### Syntax

```
bgp-vpws
```

### Context

[\[Tree\]](#) (show>service>id bgp-vpws)

### Full Context

```
show service id bgp-vpws
```

### Description

This command displays BGP VPWS related information for the service.

### Platforms

All

### Output

The following output is an example of BGP VPWS information.

#### Output Example

```
*A:cses-E11>config>service>epipe>bgp-vpws# show service id 2 bgp-vpws
=====
BGP VPWS Information
=====
Admin State           : Enabled
VE Name               : PE1                VE Id           : 1
PW Template           : 2
Route Dist            : 65536:3
Rte-Target Import    : 65536:2            Rte-Target Export: 65536:2

PW-Template Id       : 2
Import Rte-Tgt       : None
-----
Remote-Ve Information
-----
Remote VE Name        : PE2                Remote VE Id     : 2
=====
*A:cses-E11>config>service>epipe>bgp-vpws#
```

## 5.20 bier

bier

### Syntax

bier

### Context

[\[Tree\]](#) (clear>router bier)

### Full Context

clear router bier

### Description

Commands in this context clear and reset BIER entities.

### Platforms

All

bier

### Syntax

bier

### Context

[\[Tree\]](#) (show>router bier)

### Full Context

show router bier

### Description

Commands in this context display BIER information.

### Platforms

All

## 5.21 bier-info

### bier-info

#### Syntax

**bier-info** [*system-id* | *lsp-id*] [**level** *level*]

#### Context

[\[Tree\]](#) (show>router>isis bier-info)

#### Full Context

show router isis bier-info

#### Description

This command displays IS-IS BIER sub-TLV information.

#### Parameters

##### *system-id*

Specifies the system ID, up to 72 characters.

##### *lsp-id*

Specifies the LSP ID, up to 72 characters.

#### Platforms

All

## 5.22 bin-group

### bin-group

#### Syntax

**bin-group** *bin-group-number* [**detail**]

#### Context

[\[Tree\]](#) (show>oam-pm bin-group)

#### Full Context

show oam-pm bin-group

## Description

Show the configuration data for one or all OAM Performance Monitoring bin groups.

## Parameters

### *bin-group-number*

Specifies an OAM Performance Monitoring bin group.

**Values** 1 to 255

### **detail**

Keyword to display additional exclusion and event monitoring information for the bin group.

## Platforms

All

## Output

The following output is an example of OAM-PM bin group information.

### Output Example

```
show oam-pm bin-group
-----
Configured Lower Bounds for Delay Tests, in microseconds
-----
Group Description                Admin Bin   FD(us)   FDR(us)  IFDV(us)
-----
1  OAM PM default bin group (not*  Up  0        0        0        0
                                 1      5000    5000    5000
                                 2     10000     -        -
-----
2                               Up  0        0        0        0
                                 1        1      500     250
                                 2       500    1000    500
                                 3      1000    1500   1000
                                 4      2000    2000   1500
                                 5      3000    2500   2000
                                 6      4000    3000   2500
                                 7      5000    3500   3000
                                 8      5500    4000   3500
                                 9      6500    4500   4000
-----
3                               Up  0        0        0        0
                                 1        1      500     250
                                 2       500    1000    500
                                 3      1000    1500   1000
                                 4      2000    2000   1500
                                 5      3000    2500   2000
                                 6      4000    3000   2500
                                 7      5000    3500   3000
                                 8      5500    4000   3500
                                 9      6500    4500   4000
-----
* indicates that the corresponding row element may have been truncated.

show oam-pm bin-group 3 detail
-----
Configured Lower Bounds for Delay Tests, in microseconds
```



```

-----
Group Description          Admin Bin    FD(us)    FDR(us)    IFDV(us)
-----
3                          Up  0         0         0         0
                          1         1         500        250
                          2         500       1000       500
                          3         1000      1500      1000
                          4         2000      2000      1500
                          5         3000      2500      2000
                          6         4000      3000      2500
                          7         5000      3500      3000
                          8         5500      4000      3500
                          9         6500      4500      4000
-----
    
```

-----  
 Bins Excluded from Average

```

-----
Bin Type    Direction    Bins
-----
FD          round-trip    0,9
-----
    
```

-----  
 Delay Events Configured

```

-----
Bin Type    Direction    Lowest Bin    Lower Bound (us)    Raise    Clear
-----
FD          round-trip    8             5500                100     none
-----
    
```

-----  
 Bins Excluded from Delay Event Count

```

-----
Bin Type    Direction    Lowest Excluded Bin    Lower Bound (us)
-----
FD          round-trip    9                     6500
-----
    
```

-----  
 Delay Events Configured

```

-----
Bin Type    Direction    Lowest Bin    Lower Bound (us)    Raise    Clear
-----
FD          forward      3             1000                200     none
-----
    
```

-----  
 Bins Excluded from Delay Event Count

```

-----
Bin Type    Direction    Lowest Excluded Bin    Lower Bound (us)
-----
FD          forward      4                     2000
-----
    
```

## 5.23 bin-group-using

### bin-group-using

#### Syntax

**bin-group-using** [**bin-group** *bin-group-number*]

#### Context

[\[Tree\]](#) (show>oam-pm bin-group-using)

#### Full Context

show oam-pm bin-group-using

#### Description

Show the list of sessions configured against one or all OAM Performance Monitoring bin groups.

#### Parameters

***bin-group-number***

Specifies an OAM Performance Monitoring bin group.

**Values** 1 to 255

#### Platforms

All

#### Output

The following output is an example of OAM-PM bin group session information.

#### Output Example

```
show oam-pm bin-group-using
=====
OAM Performance Monitoring Bin Group Configuration for Sessions
=====
Bin Group      Admin  Session                                     Session State
-----
2              Up     vpls1000-PM-AL5-1/1/9:1000.1000          Act
-----
3              Up     vpls1000-PM-YL4-1/1/9:1000.1000          Act
-----
Admin: State of the bin group
Session State: The state of session referencing the bin-group

show oam-pm bin-group-using bin-group 2
=====
OAM Performance Monitoring Bin Group Configuration for Sessions
```

```
=====
Bin Group      Admin  Session                               Session State
-----
2              Up     vpls1000-PM-AL5-1/1/9:1000.1000      Act
-----
Admin: State of the bin group
Session State: The state of session referencing the bin-group
=====
```

## 5.24 binding-label

### binding-label

#### Syntax

**binding-label** [/label] [detail]

**binding-label** [/label] egress-stats

**binding-label** [/label] ingress-stats

#### Context

[\[Tree\]](#) (show>router>mpls>forwarding-policies binding-label)

#### Full Context

show router mpls forwarding-policies binding-label

#### Description

This command displays the MPLS forwarding policy binding label information.

#### Parameters

##### **label**

Specifies the label value.

**Values** 32 to 1048575

##### **detail**

Displays detailed information of the binding label.

##### **egress-stats**

Displays the egress statistics, if any, of all the instances of the specified forwarding policy.

##### **ingress-stats**

Displays ingress statistics information.

#### Platforms

All

## Output

Table 53: MPLS Binding Label Output Fields describes MPLS binding label output fields.

Table 53: MPLS Binding Label Output Fields

Label	Description
Label	Specifies the label number.
Preference	Specifies the preference.
Oper State	Specifies the operational state (up   down).
Policy Name	Specifies the MPLS forwarding policies binding label name.
No. of Binding Labels	Specifies the number of binding labels.
OperDown Reason	Specifies the reason for being operationally down.
Down Time	Specifies the downtime date and time.
NumNextHop Grps	Specifies the number of next-hop groups.
Ingress Stats	Specifies if ingress stats are enabled for collection (disabled   enabled).
IngOperState	Specifies the ingress operational state (up   down)
Revert Timer	Specifies the revert timer value.
Retry Count	Specifies the retry count.
Next Retry In	Specifies the next retry value.
Next-hop Group	Specifies the next-hop group.
Resolution Type	Specifies the resolution type (direct   indirect).
Num Revert	Specifies the number of reverts.
Num Failover	Specifies the number of failovers.
Next Revert In	Specifies the next revert interval.
Primary nexthop	Specifies the IP address of the primary next-hop.
Resolved	Specifies the resolved status (false   true).
NHopDown Reason	Specifies the reason for the next-hop down.
Backup nexthop	Specifies the IP address of the backup next-hop.

Label	Description
StatsOperState	Specifies if a statistic index is allocated to the next-hop.
EgrStatsState	Specifies if all next-hops have a statistic index allocated.

### Output Example

```

=====
*A:Dut-C> show router mpls forwarding-policies binding-label
- binding-label [<label>] [detail]
*A:Dut-C> show router mpls forwarding-policies binding-label
=====
Binding Label
=====
Label                Preference          Oper State
Policy Name
-----
33                   253                Down
indirect1
-----
No. of Binding Labels: 1
=====
*A:Dut-C> show router mpls forwarding-policies binding-label detail
=====
Binding Label (Detail)
=====
Label                : 33                Preference          : 253
Policy Name          : indirect1
Oper State           : Down              OperDownReason     : notApplicable
Down Time            : 09/28/2018 19:53:33  NumNextHopGrps    : 1
Ingress Stats        : Disabled          IngrOperState      : Down
Revert Timer         : 600
Retry Count          : 0                Next Retry In      : 0
Next-hop Group       : 1                Resolution Type    : indirect
Oper State           : Down              OperDownReason     : notApplicable
Num Revert           : 0                Num Failover       : 0
Next Revert In       : 0
Primary nexthop      : 4.4.4.4
Resolved              : False             NHopDownReason     : notApplicable
Backup nexthop       : 3.3.3.3
Resolved              : False             NHopDownReason     : notApplicable
-----

```

```

show router mpls forwarding-policies binding-label 400001 egress-stats
=====
Binding Label (Detail)
=====
Label                : 400001           Preference          : 255
Policy Name          : cc                Oper State          : Up
EgrStatsState        : Up
Next-hop Group       : 1
  Primary nexthop    : 10.10.5.5
    StatsOperState   : Up
    Aggr Pkts: 11000  Aggr Octets: 11550000
  Backup nexthop     : 10.10.11.4
    StatsOperState   : Up
    Aggr Pkts: 11000  Aggr Octets: 11550000
Next-hop Group       : 2
  Primary nexthop    : 10.10.5.5
    StatsOperState   : Up

```

```
Aggr Pkts: 11000                Aggr Octets: 11550000
Backup nexthop : 10.10.11.4
StatsOperState : Up
Aggr Pkts: 11000                Aggr Octets: 11550000
Total Aggr :
Aggr Pkts: 44000                Aggr Octets: 46200000
-----
=====
```

## binding-label

### Syntax

**binding-label** *label* **ingress-stats** [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>router>mpls>forwarding-policies binding-label)

### Full Context

monitor router mpls forwarding-policies binding-label

### Description

This command monitors statistics for Forwarding Policy Binding Label.

### Parameters

#### **label**

Specifies the label value.

**Values** 32 to 1048575

#### **ingress-stats**

Displays ingress statistics information.

#### **seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10

#### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

#### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic instead of the delta.

### **Platforms**

All

## **binding-label**

### **Syntax**

**binding-label** *label* **ingress-stats**

### **Context**

[\[Tree\]](#) (clear>router>mpls>forwarding-policies binding-label)

### **Full Context**

clear router mpls forwarding-policies binding-label

### **Description**

This command clears or resets statistics for the MPLS forwarding policy binding label.

### **Parameters**

#### ***label***

Specifies the label value.

**Values** 32 to 1048575

#### ***ingress-stats***

Displays ingress statistics information.

### **Platforms**

All

## **5.25 bindings**

## **bindings**

### **Syntax**

**bindings** [**mac** *ieee-address*]

### **Context**

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg>gateway bindings)

## Full Context

```
show subscriber-mgmt vrgw brg gateway bindings
```

## Description

This command lists all the DHCP bindings of the local pool associated with the specified BRG. If the MAC attribute is specified, only the binding for that MAC address is displayed.

## Parameters

### *ieee-address*

specifies the MAC address identifying a specific binding.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of BRG gateway binding information.

### Output Example

```
Node# show subscriber-mgmt brg gateway brg-id "00:00:00:00:00:05" bindings
=====
Bridged Residential Gateway home-aware pool address bindings
=====
Home-aware pool           : 00:00:00:00:00:05
-----
MAC address               : 00:02:00:00:00:19
IP address                : 21.0.0.20
Allocation type           : dynamic
DHCP lease                : true
Remaining lease time     : 489
Lease start time         : 2016/01/18 17:44:44
MAC address               : 00:02:00:00:00:1a
IP address                : 21.0.0.21
Allocation type           : dynamic
DHCP lease                : true
Remaining lease time     : 493
Lease start time         : 2016/01/18 17:44:48
MAC address               : 00:02:00:00:00:1b
IP address                : 21.0.0.22
Allocation type           : dynamic
DHCP lease                : true
Remaining lease time     : 497
Lease start time         : 2016/01/18 17:44:52
-----
No. of bindings: 3
=====
```

## bindings

## Syntax

```
bindings
```



## Context

[\[Tree\]](#) (show>router>ldp bindings)

## Full Context

show router ldp bindings

## Description

This command displays LDP bindings information.

## Platforms

All

## Output

The following output is an example of LDP bindings information.

### Output Example

```
*A:Dut-A# show router ldp bindings active

=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
       WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
       (S) - Static           (M) - Multi-homed Secondary Support
       (B) - BGP Next Hop (BU) - Alternate Next-hop for Fast Re-Route
=====
LDP IPv4 Prefix Bindings (Active)
=====
Prefix          Op   IngLbl   EgrLbl   EgrIntf/LspId  EgrNextHop
-----
10.20.1.1/32    Pop  131071   --        --              --
10.20.1.2/32    Push --       131071   1/1/1          10.10.1.2
10.20.1.2/32    Swap 131070   131071   1/1/1          10.10.1.2
10.20.1.2/32    Push --       262141BU 1/1/2          10.10.2.3
10.20.1.2/32    Swap 131070   262141BU 1/1/2          10.10.2.3
10.20.1.3/32    Push --       131069BU 1/1/1          10.10.1.2
10.20.1.3/32    Swap 131069   131069BU 1/1/1          10.10.1.2
10.20.1.3/32    Push --       262143   1/1/2          10.10.2.3
10.20.1.3/32    Swap 131069   262143   1/1/2          10.10.2.3
10.20.1.4/32    Push --       131068   1/1/1          10.10.1.2
10.20.1.4/32    Swap 131068   131068   1/1/1          10.10.1.2
10.20.1.4/32    Push --       262140BU 1/1/2          10.10.2.3
10.20.1.4/32    Swap 131068   262140BU 1/1/2          10.10.2.3
10.20.1.5/32    Push --       131067BU 1/1/1          10.10.1.2
10.20.1.5/32    Swap 131067   131067BU 1/1/1          10.10.1.2
10.20.1.5/32    Push --       262139   1/1/2          10.10.2.3
10.20.1.5/32    Swap 131067   262139   1/1/2          10.10.2.3
10.20.1.6/32    Push --       131066   1/1/1          10.10.1.2
10.20.1.6/32    Swap 131066   131066   1/1/1          10.10.1.2
10.20.1.6/32    Push --       262138BU 1/1/2          10.10.2.3
10.20.1.6/32    Swap 131066   262138BU 1/1/2          10.10.2.3
-----

-----
No. of IPv4 Prefix Active Bindings: 10
=====
LDP IPv6 Prefix Bindings (Active)
=====
```

```

=====
Prefix                               Op      IngLbl  EgrLbl
EgrNextHop                           EgrIf/LspId
-----
No Matching Entries Found
=====

LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id                               Interface
RootAddr                              Op      IngLbl  EgrLbl
EgrNH                                 EgrIf/LspId
-----
No Matching Entries Found
=====

LDP Generic IPv6 P2MP Bindings (Active)
=====
P2MP-Id                               Interface
RootAddr                              Op      IngLbl  EgrLbl
EgrNH                                 EgrIf/LspId
-----
No Matching Entries Found
=====

LDP In-Band-SSM IPv4 P2MP Bindings (Active)
=====
Source                                Interface
Group                                 Op      IngLbl  EgrLbl
RootAddr                              EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====

LDP In-Band-SSM IPv6 P2MP Bindings (Active)
=====
Source                                Interface
Group                                 Op      IngLbl  EgrLbl
RootAddr                              EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====

LDP In-Band-VPN-SSM IPv4 P2MP Bindings (Active)
=====
Source                                RD      Op      IngLbl  EgrLbl
Group                                 Interface
RootAddr                              EgrIf/LspId
EgrNH
-----
No Matching Entries Found
=====

LDP In-Band-VPN-SSM IPv6 P2MP Bindings (Active)
=====
Source

```

```

Group                RD                Op
RootAddr            Interface        IngLbl    EgrLbl
EgrNH              EgrIf/LspId
-----
No Matching Entries Found
=====

*A:Dut-A# show router ldp bindings

=====
LDP Bindings (IPv4 LSR ID 10.1.1.1:0)
              (IPv6 LSR ID ::[0])
=====
Legend: U - Label In Use, N - Label Not In Use, W - Label Withdrawn
        S - Status Signaled Up, D - Status Signaled Down
        E - Epipe Service, V - VPLS Service, M - Mirror Service
        A - Apipe Service, F - Fpipe Service, I - IES Service, R - VPRN service
        P - Ipipe Service, WP - Label Withdraw Pending, C - Cpipe Service
        BU - Alternate For Fast Re-Route, TLV - (Type, Length: Value)
=====
LDP IPv4 Prefix Bindings
=====
Prefix          Peer          IngLbl      EgrLbl EgrIntf/  EgrNextHop
                Peer          Peer          LspId   LspId
                Peer          Peer
-----
10.20.1.1/32    10.20.1.2    131071U     --     --         --
10.20.1.1/32    10.20.1.3    131071U     --     --         --
10.20.1.2/32    10.20.1.2    --          131071 1/1/1     10.10.1.2
10.20.1.2/32    10.20.1.3    131070U     262141 1/1/2     10.10.2.3
10.20.1.3/32    10.20.1.2    131069U     131069 1/1/1     10.10.1.2
10.20.1.3/32    10.20.1.3    --          262143 1/1/2     10.10.2.3
10.20.1.4/32    10.20.1.2    131068N     131068 1/1/1     10.10.1.2
10.20.1.4/32    10.20.1.3    131068BU    262140 1/1/2     10.10.2.3
10.20.1.5/32    10.20.1.2    131067U     131067 1/1/1     10.10.1.2
10.20.1.5/32    10.20.1.3    131067N     262139 1/1/2     10.10.2.3
10.20.1.6/32    10.20.1.2    131066N     131066 1/1/1     10.10.1.2
10.20.1.6/32    10.20.1.3    131066BU    262138 1/1/2     10.10.2.3
-----
No. of IPv4 Prefix Bindings: 12
=====

=====
LDP IPv6 Prefix Bindings
=====
Prefix          IngLbl      EgrLbl
Peer            EgrIntf/LspId
EgrNextHop
-----
No Matching Entries Found
=====

=====
LDP Generic IPv4 P2MP Bindings
=====
P2MP-Id
RootAddr        Interface    IngLbl    EgrLbl
EgrNH          EgrIf/LspId
Peer
-----
100
10.1.1.1        Unknw      --        131051
10.90.90.2     1/1/6
10.2.2.2:0
    
```

```

104
10.1.1.1          Unknw      --      131050
10.90.90.2       1/1/6
10.2.2.2:0

600
10.1.1.1          Unknw      --      131049
10.90.90.2       1/1/6
10.2.2.2:0

700
10.1.1.1          Unknw      --      131048
10.90.90.2       1/1/6
10.2.2.2:0

800
10.1.1.1          Unknw      --      131047
10.90.90.2       1/1/6
10.2.2.2:0

900
10.1.1.1          Unknw      --      131046
10.90.90.2       1/1/6
10.2.2.2:0

1500
10.1.1.1          Unknw      --      131045
10.90.90.2       1/1/6
10.2.2.2:0

100
10.6.6.6          Unknw      --      131044
10.90.90.2       1/1/6
10.2.2.2:0

900
10.6.6.6          Unknw      --      131043
10.90.90.2       1/1/6
10.2.2.2:0

-----
No. of Generic IPv4 P2MP Bindings: 9
=====

=====
LDP Generic IPv6 P2MP Bindings
=====
P2MP-Id
RootAddr          Interface    IngLbl     EgrLbl
EgrNH             EgrIf/LspId
Peer
-----
No Matching Entries Found
=====

=====
LDP In-Band-SSM IPv4 P2MP Bindings
=====
Source
Group
RootAddr          Interface    IngLbl     EgrLbl
EgrNH             EgrIf/LspId
Peer
  
```

```

-----
No Matching Entries Found
=====

=====
LDP In-Band-SSM IPv6 P2MP Bindings
=====
Source
Group
RootAddr          Interface      IngLbl   EgrLbl
EgrNH             EgrIf/LspId
Peer
-----
No Matching Entries Found
=====

=====
LDP In-Band-VPN-SSM IPv4 P2MP Bindings
=====
Source
Group              RD
RootAddr          Interface      IngLbl   EgrLbl
EgrNH             EgrIf/LspId
Peer
-----
10.1.1.1
225.0.0.1          10.1.1.1:100
10.3.3.3           Unknwn        --        100
10.60.60.1        1/1/1
10.2.2.2:100

10.1.1.1
225.0.0.1          10.1.1.1:100
10.3.3.3           Unknwn        --        100
10.60.60.1        1/1/1
10.2.2.2:100

10.1.1.1
225.0.0.1          10.1.1.1:100
10.3.3.3           Unknwn        --        100
10.60.60.1        1/1/1
10.2.2.2:100
-----
No. of In-Band-VPN-SSM IPv4 P2MP Bindings: 3
=====

=====
LDP In-Band-VPN-SSM IPv6 P2MP Bindings
=====
Source
Group              RD
RootAddr          Interface      IngLbl   EgrLbl
EgrNH             EgrIf/LspId
Peer
-----
10.1.1.1
225.0.0.1          10.1.1.1:100
2000::3000        Unknwn        --        100
10.60.60.1        1/1/1
10.2.2.2:100

10.1.1.1
    
```

```

225.0.0.1          10.1.1.1:100
2000::3000         Unknwn          --          100
10.60.60.1        1/1/1
10.2.2.2:100

10.1.1.1
225.0.0.1          10.1.1.1:100
2000::3000         Unknwn          --          100
10.60.60.1        1/1/1
10.2.2.2:100

-----
No. of In-Band-VPN-SSM IPv6 P2MP Bindings: 3
=====

LDP Service FEC 128 Bindings
=====
Type                VCId      SDPIId      IngLbl  LMTU
Peer                SvcId
-----
?-Eth               100       R. Src      --      None
10.2.2.2:0         Ukwn      131023D    986

?-Eth               500       R. Src      --      None
10.2.2.2:0         Ukwn      131022D    1386

?-Eth               2001      R. Src      --      None
10.2.2.2:0         Ukwn      131019D    986

?-Eth               2003      R. Src      --      None
10.2.2.2:0         Ukwn      131017D    986

?-Ipipe            1800      R. Src      --      None
10.2.2.2:0         Ukwn      131014D    1486

-----
No. of VC Labels: 5
=====

LDP Service FEC 129 Bindings
=====
SAII                AGII       IngLbl      LMTU
TAII                Type       EgrLbl      RMTU
Peer                SvcId     SDPIId
-----
No Matching Entries Found
=====
    
```

## 5.26 bluetooth

### bluetooth

#### Syntax

**bluetooth** [device-mac [*ieee-address*]] | **module** [*cpm-slot*]

## Context

[\[Tree\]](#) (show>system bluetooth)

## Full Context

show system bluetooth

## Description

This command displays detailed information about the Bluetooth configuration on the CPM or chassis.

## Parameters

### *ieee-address*

Specifies the source MAC address.

**Values**    xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

### *cpm-slot*

Specifies the CPM slot.

**Values**    A , B, C, D

## Platforms

7750 SR-1, 7750 SR-s, 7950 XRS-20e

## Output

The following output is an example of Bluetooth configuration information. [Table 54: System Bluetooth Field Descriptions](#) describes the output fields.

### Output Example

```
*A:bkvm18>show>system# bluetooth
=====
System-wide Bluetooth Configuration
=====
Passkey           : 123456           Advertising Timeout: 30
Power State       : off             Pairing Button    : Disabled
=====
*A:bkvm18>show>system# bluetooth device
=====
System-wide Bluetooth Configuration
=====
Passkey           : 123456           Advertising Timeout: 30
Power State       : off             Pairing Button    : Disabled
=====
Bluetooth Devices
=====
Device           : 00:22:33:44:55:66
Description      : peter's ipad
Device           : 11:22:33:44:55:66
Description      : (Not Specified)
Device           : 22:22:33:44:55:66
Description      : description
-----
Number of Devices : 3
=====
```

```

*A:bkvm18>show>system# bluetooth device 00:22:33:44:55:66
=====
System-wide Bluetooth Configuration
=====
Passkey          : 123456          Advertising Timeout: 30
Power State      : off            Pairing Button    : Disabled
=====

Bluetooth Devices
=====
Device           : 00:22:33:44:55:66
Description      : peter's ipad
=====
*A:bkvm18>show>system# bluetooth module
=====
System-wide Bluetooth Configuration
=====
Passkey          : 123456          Advertising Timeout: 30
Power State      : off            Pairing Button    : Disabled
=====

Bluetooth Modules
=====
Module           : A
Connected Device : Yes
Device Mac       : 00:22:33:44:55:66
Device Description : peter's ipad
Configured Identifier : (Not Configured)
Operational Identifier: 7750-SR-14s-CPM-A-NS123456
Module           : B
Connected Device : No
Device Mac       :
Device Description :
Configured Identifier : (Not Configured)
Operational Identifier: 7750-SR-14s-CPM-B-NS654321
=====
*A:bkvm18>show>system# bluetooth module "A"
=====
System-wide Bluetooth Configuration
=====
Passkey          : 123456          Advertising Timeout: 30
Power State      : off            Pairing Button    : Disabled
=====

Bluetooth Modules
=====
Module           : A
Connected Device : Yes
Device Mac       : 00:22:33:44:55:66
Device Description : peter's ipad
Configured Identifier : (Not Configured)
Operational Identifier: 7750-SR-14s-CPM-A-NS123456
=====*
```

Table 54: System Bluetooth Field Descriptions

Label	Description
Passkey	The Bluetooth passkey in use by the system



Label	Description
Advertising Timeout	The amount of time the Bluetooth will advertise that it is ready to pair
Power State	The operating mode for Bluetooth
Pairing Button	Displays whether the pairing button is enabled for use
Device	The MAC address of the Bluetooth device
Description	The customer-entered description for the Bluetooth device
Module	Displays which CPM module contains the Bluetooth device
Connected Device	Displays if there is a device actively paired to the module
Device MAC	The MAC address of the Bluetooth device connected to the module
Device Description	The description associated with the connected Bluetooth device
Configured Identifier	The customer-defined Bluetooth identifier for the module
Operational Identifier	The Bluetooth identifier in use for the module

## bluetooth

### Syntax

**bluetooth**

### Context

[\[Tree\]](#) (tools>perform>system bluetooth)

### Full Context

tools perform system bluetooth

### Description

Commands in this context are related to the Bluetooth interface.

### Platforms

7750 SR-1, 7750 SR-s, 7950 XRS-20e

## 5.27 bmp

bmp

### Syntax

bmp

### Context

[\[Tree\]](#) (clear>service>id bmp)

[\[Tree\]](#) (clear>router bmp)

### Full Context

clear service id bmp

clear router bmp

### Description

Commands in this context clear and reset BGP Monitoring Protocol (BMP) station connections.

### Platforms

All

bmp

### Syntax

bmp

### Context

[\[Tree\]](#) (show>router bmp)

[\[Tree\]](#) (show>service>id bmp)

### Full Context

show router bmp

show service id bmp

### Description

Commands in this context display BGP related information.

### Platforms

All

## bmp

### Syntax

**bmp**

### Context

[\[Tree\]](#) (show bmp)

### Full Context

show bmp

### Description

Commands in this context display BGP Monitoring Protocol (BMP) information.

### Platforms

All

## 5.28 bof

## bof

### Syntax

**bof** [*flash-id* | **booted**]

### Context

[\[Tree\]](#) (show bof)

### Full Context

show bof

### Description

This command displays the Boot Option File (BOF) executed on last system boot or on the specified device.

If no device is specified, the BOF used in the last system boot displays. If the BOF has been modified since the system boot, a message displays.



#### Note:

This command is not available in the MD-CLI. Use the MD-CLI **admin show configuration bof** command or the **info** command in the bof configuration region.

## Parameters

### *cflash-id*

Displays the cflash directory name. The slot name is not case-sensitive. Use upper or lowercase "A" or "B" for the slot name.

**Values** cf1:, cf1-A:, cf1-B:, cf2:, cf2-A:, cf2-B:, cf3:, cf3-A:, cf3-B:

### *booted*

displays the boot option file used to boot the system.

## Platforms

All

## Output

The following output is an example of BOF, and [Table 55: Show BOF Output Fields](#) describes the output fields.

### Output Example

```
A:ALA-1# show bof cf3:
=====
BOF on cf3:
=====
autonegotiate
primary-image ftp://test:test@192.168.xx.xx/./both.tim
primary-config ftp://test:test@192.168.xx.xx/./1xx.cfg
secondary-image cf1:/i650/
secondary-config cf1:/config.cfg
address 192.168.xx.xxx/20 active
address 192.168.xx.xxx/20 standby
primary-dns 192.168.xx.xxx
dns-domain test.test.com
autonegotiate
duplex full
speed 100
wait 2
persist off
console-speed 115200
=====
A:ALA-1#
A:ALA-1# show bof booted
=====
System booted with BOF
=====
primary-image ftp://test:test@192.168.xx.xx/./both.tim
primary-config ftp://test:test@192.168.xx.xx/./103.cfg
secondary-image cf1:/i650/
secondary-config cf1:/config.cfg
address 192.168.xx.xxx/20 active
address 192.168.xx.xxx/20 standby
primary-dns 192.168.xx.xxx
dns-domain test.test.com
autonegotiate
duplex full
speed 100
wait 2
persist off
console-speed 115200
```

=====

A:ALA-1#

Table 55: Show BOF Output Fields

Label	Description
primary-image	The primary location of the directory that contains the runtime images of both CPM and XCM/IOM.
primary-config	The primary location of the file that contains the configuration.
primary-dns	The primary DNS server for resolution of host names to IP addresses.
secondary-image	The secondary location of the directory that contains the runtime images of both CPM and XCM/IOM.
secondary-config	The secondary location of the file that contains the configuration.
secondary-dns	The secondary DNS server for resolution of host names to IP addresses.
tertiary-image	The tertiary location of the directory that contains the runtime images of both CPM and XCM/IOM.
tertiary-config	The tertiary location of the file that contains the configuration.
address	The IP address and mask associated with the CPM Ethernet port or the secondary CPM port.
tertiary-dns	The tertiary DNS server for resolution of host names to IP addresses.
persist	on — Persistent indexes between system reboots is enabled. off — Persistent indexes between system reboots is disabled.
wait	The time configured for the boot to pause while waiting for console input.
autonegotiate	no autonegotiate — Autonegotiate not enabled. autonegotiate — Autonegotiate is enabled.
duplex	half — Specifies that the system uses half duplex. full — Specifies that the system uses full duplex.
speed	The speed of the CPM Ethernet interface.
console speed	The console port baud rate.
dns domain	The domain name used when performing DNS address resolution.

Label	Description
uplinkA-address	Displays the Uplink-A IP address.
uplinkA-port	Displays the primary port to be used for auto-boot.
uplinkA-route	Displays the static route associated with Uplink-A.
uplinkA-vlan	Displays the VLAN ID to be used on Uplink-A.
uplinkB-address	Displays the Uplink-B IP address.
uplinkB-port	Displays the secondary port to be used for auto-boot.
uplinkB-route	Displays the static route associated with Uplink-B.
uplinkB-vlan	Displays the VLAN ID to be used on Uplink-B.
uplink-mode	Displays the uplink mode of the device.
no-service-ports	Displays the ports on which service traffic is not processed.
use-expansion-card-type	The expansion card type.
system-profile	The system profile used by the system when it is rebooted.

## 5.29 bonding

### bonding

#### Syntax

**bonding** [**detail**]

**bonding bonding-id** *bonding-id* [**detail**]

#### Context

[\[Tree\]](#) (show>service bonding)

#### Full Context

show service bonding

#### Description

This command displays an overview of active bonding contexts and the associated access connections. When a bonding ID is specified, only information for that specific context is displayed.

## Parameters

### *bonding-id*

Specifies the ID of a specific bonding context.

### *detail*

Displays additional detailed bonding settings, such as load-balancing.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of bonding information.

### Output Example

```
Node# show service bonding
=====
Bonding Summary
=====
-----
Bond1 - svc:40 - itf:grp_itf_bonding
-----
 1 - PPP - svc:30 - sap:1/1/3:1 - mac:00:00:00:00:00:01 - sid:1
 2 - IPOE - svc:11 - sap:pxc-1.b:1.8 - mac:00:03:ff:f0:01:00
-----
=====
show service bonding bonding-id Bond1 detail
=====
Bonding Summary
=====
-----
Bond1 - svc:40 - itf:grp_itf_bonding
-----
 1 - PPP - svc:30 - sap:1/1/3:1 - mac:00:00:00:00:00:01 - sid:1
 2 - IPOE - svc:11 - sap:pxc-1.b:1.8 - mac:00:03:ff:f0:01:00
-----
Reference rate           : 10000000 kbps
Low threshold rate      : 8000000 kbps
High threshold rate     : 9000000 kbps
Initial load-balancing weight : 100%
Load-balancing weight change : 5%
Current load-balancing weight : 100%
-----
=====
```

## bonding

## Syntax

**bonding**

**bonding eval-rates**

## Context

[\[Tree\]](#) (tools>perform>subscr-mgmt bonding)

### Full Context

tools perform subscriber-mgmt bonding

### Description

This command enables the tools used for hybrid access bonding.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 5.30 boot-messages

```
boot-messages
```

### Syntax

```
boot-messages
```

### Context

[\[Tree\]](#) (show boot-messages)

### Full Context

```
show boot-messages
```

### Description

This command displays boot messages generated during the last system boot.

### Platforms

All

### Output

The following output is an example of a boot-message.

### Output Example

```
*A:raven14s# show boot-messages
=====
cf3:/bootlog.txt
=====
Boot log started on CPU#0
  Build: X-0.0.I5679 on Mon Oct  1 18:08:38 PDT 2018 by builder
  CPUCTL FPGA version: 17
Boot rom version is v54
CPU Control FPGA version is 0x17
Multicore RAM test using 10 cores
>>>Testing SDRAM from 0x000000002200000 to 0x0000000080000000
>>>Testing SDRAM from 0xffffffffe0000000 to 0xffffffffe0000000
>>>Testing SDRAM from 0x0000000080000000 to 0x00000003e4000000
>>>Testing Compact Flash 1... Slot Empty
```



```
>>>Testing Compact Flash 2... Slot Empty
>>>Testing Compact Flash 3... OK (STEC M2+ CF 9.0.2)
Board Serial Number is 'NS184100464'
Platforms in Chassis EEPROM 1 is 0x1
Chassis type 34 (sr14s_r1) found in Chassis EEPROM 1
Chassis Serial Number is 'NS173300113'
Searching for boot.ldr on local drives:
Searching cf3 for boot.ldr...
*****
Total Memory: 16GB Chassis Type: sr14s_r1 (0x22) Card Type: pegasus_r1 (0x42) [IOCTRL
Ver:0x17 Date:not-available] Git: [ Tag/Hash: TiMOS_16_0_R4-g49edf4fa7f67; branch: master,
remote: master]
TiMOS-L-16.0.R4 boot/hops Nokia 7xxx ? Copyright (c) 2000-2018 Nokia.
All rights reserved. All use subject to applicable license agreements.
Built on Sun Sep 30 18:08:18 PDT 2018 by builder in /builds/160/R4/panos/main
TiMOS BOOT LOADER
Extended checks enabled with overhead of 36B
Fair scheduler is now enabled
Time from clock is TUE NOV 17 15:12:04 2020 UTC
Switching serial output to sync mode... done
Looking for cf3:/bof.cfg ... OK, reading
Contents of Boot Options File on cf3:
```

## 5.31 brg

brg

### Syntax

brg

### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw brg)

### Full Context

show subscriber-mgmt vrgw brg

### Description

Commands in this context display operational information for connected BRGs and related hosts.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

brg

### Syntax

brg

### Context

[\[Tree\]](#) (clear>subscr-mgmt>vrgw brg)

### Full Context

clear subscriber-mgmt vrgw brg

### Description

This command clears BRG data.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

brg

### Syntax

brg

### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>vrgw brg)

### Full Context

tools perform subscriber-mgmt vrgw brg

### Description

This command enables tools for controlling BRGs.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 5.32 brg-hosts

brg-hosts

### Syntax

brg-hosts [mac *ieee-address*] [ip *ip-address*]

### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg brg-hosts)

## Full Context

```
show subscriber-mgmt vrgw brg brg-hosts
```

## Description

This command displays operational information for connected BRGs and related hosts.

## Parameters

### *ieee-address*

Displays detailed information for each prefix.

### *ip-address*

Displays only the prefixes associated with this subscriber interface.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management BRG host information.

### Output Example

```
Node# show subscriber-mgmt brg brg-hosts
=====
Bridged Residential Gateway hosts
=====
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:19
IP address           : 21.0.0.20
Service              : 4 (VPRN)
Allocation type      : dynamic
Home-aware pool     : 00:00:00:00:00:05
DHCP lease           : true
Remaining lease time : 482
Lease start time     : 2016/01/18 17:44:44
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:19
IP address           : 3ffe:0:0:5::
Service              : 4 (VPRN)
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:1a
IP address           : 21.0.0.21
Service              : 4 (VPRN)
Allocation type      : dynamic
Home-aware pool     : 00:00:00:00:00:05
DHCP lease           : true
Remaining lease time : 486
Lease start time     : 2016/01/18 17:44:48
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:1a
IP address           : 3ffe:0:0:5::
Service              : 4 (VPRN)
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:1b
IP address           : 21.0.0.22
Service              : 4 (VPRN)
Allocation type      : dynamic
Home-aware pool     : 00:00:00:00:00:05
```

```
DHCP lease           : true
Remaining lease time : 490
Lease start time     : 2016/01/18 17:44:52
-----
```

```
No. of BRG hosts: 5
=====
```

## 5.33 brg-profile

### brg-profile

#### Syntax

**brg-profile**

**brg-profile** *name*

**brg-profile** *name* **associations**

#### Context

[\[Tree\]](#) (show subscr-mgmt vrgw brg brg-profile)

#### Full Context

show subscriber-mgmt vrgw brg brg-profile

#### Description

This command displays BRG profile information.

#### Parameters

***name***

Specifies an existing BRG profile name.

***associations***

Displays information associated with the specified BRG profile name.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 5.34 brief

brief

### Syntax

brief

### Context

[\[Tree\]](#) (show>router>bgp>routes brief)

### Full Context

show router bgp routes brief

### Description

This command displays summary information about the BGP routes.

**brief** is a parameter of the **show router bgp routes** command. Depending on the parameters that are used to issue the command, the output can display a narrower or wider set of routes, including routes belonging to other address families. See the **show router bgp routes** command description for syntax variants, parameter descriptions and values, and output examples.

### Platforms

All

## 5.35 build-packet

build-packet

### Syntax

build-packet

### Context

[\[Tree\]](#) (show>test-oam build-packet)

### Full Context

show test-oam build-packet

### Description

Commands in this context display OAM egress port finder information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 5.36 bundles

### bundles

#### Syntax

**bundles**

#### Context

[\[Tree\]](#) (show>router>l2tp>mlppp bundles)

#### Full Context

show router l2tp mlppp bundles

#### Description

This command displays L2TP MLPPP bundle statistics.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s

#### Output

The following output is an example of L2TP MLPPP bundle statistics information.

#### Output Example

The following is an example with one MLPPP bundle (using two links).

```
*A:Dut-B# show router 100 l2tp mlppp
*A:Dut-B# show router 100 l2tp mlppp bundles
=====
L2TP MLPPP LAC Bundles
=====
User user_v46_1
Bundle index          : 1
Service               : 100
Forwarding tunnel ID  : N/A
Local endpoint class  : ipv4-address
Local endpoint address : 1.1.1.1
Remote endpoint class  : local
Remote endpoint address : linuxBundle1
Links                 : 1. ID 805988014 (established)
                       2. ID 805991249 (established)
-----
Number of bundles: 1
=====
*A:Dut-B#
```

The following is an example with two MLPPP bundles (using two links)

```
*A:Dut-B# show router 100 l2tp mlppp
*A:Dut-B# show router 100 l2tp mlppp bundles
=====
L2TP MLPPP LAC Bundles
=====
User user_v46_1
Bundle index      : 1
Service          : 100
Forwarding tunnel ID : N/A
Local endpoint class : ipv4-address
Local endpoint address : 1.1.1.1
Remote endpoint class : local
Remote endpoint address : linuxBundle1
Links             : 1. ID 518660444 (established)
                  : 2. ID 518672262 (established)

User user_v46_2
Bundle index      : 2
Service          : 100
Forwarding tunnel ID : N/A
Local endpoint class : ipv4-address
Local endpoint address : 1.1.1.1
Remote endpoint class : local
Remote endpoint address : linuxBundle2
Links             : 1. ID 518652432 (established)
                  : 2. ID 518652553 (established)

-----
Number of bundles: 2
=====
*A:Dut-B#
```

## 5.37 bypass-tunnel

### bypass-tunnel

#### Syntax

**bypass-tunnel** [*to ip-address*] [**protected-lsp** [*name*]] [**dynamic** | **manual** | **p2mp**] [**detail**] [**lsp-name** *session-name*]

**bypass-tunnel** [**detail**] [**dns**]

#### Context

**[Tree]** (show>router>mpls bypass-tunnel)

#### Full Context

show router mpls bypass-tunnel

#### Description

This command displays MPLS bypass tunnel information.

If fast reroute is enabled on an LSP and the facility method is selected, instead of creating a separate LSP for every LSP that is to be backed up, a single LSP is created and serves as a backup for a set of LSPs. Such an LSP tunnel is called a bypass tunnel.

## Parameters

### *ip-address*

Specifies the IP address of the egress router.

### *name*

Specifies the name of the LSP protected by the bypass tunnel up to 160 characters. "\*" is accepted as a wild card character.

### *dynamic*

Keyword used to display dynamically-assigned labels for bypass protection.

### *manual*

Keyword used to display manually-assigned labels for bypass protection.

### *detail*

Keyword used to display detailed information.

### *p2mp*

Keyword used to display P2MP bypass tunnel information.

### *session-name*

Specifies the session name, up to 160 characters, of the LSP used in the path. "\*" can be used as a wildcard character.

### *dns*

Keyword used to display reverse DNS resolution of actual and explicit hop information.

## Platforms

All

## Output

The following output is an example of MPLS bypass tunnel information, and [Table 56: MPLS bypass tunnel output fields](#) describes MPLS bypass tunnel output fields.

### Output Example

```
A:SRU4>show>router>mpls# bypass-tunnel
=====
MPLS Bypass Tunnels
=====
Legend :  m - Manual      d - Dynamic      p - P2mp
=====
To          State  Out I/F          Out Label      Reserved   Protected   Type
              BW (Kbps)   LSP Count
-----
No Matching Entries Found
=====
```



Table 56: MPLS bypass tunnel output fields

Label	Description
To	The IP address of the egress router.
State	The LSP's administrative state.
Out I/F	Specifies the name of the network IP interface.
Out Label	Specifies the incoming MPLS label on which to match.
Reserved BW (kb/s)	Specifies the amount of bandwidth in Mb/s reserved for the LSP.
Protected LSP Count	Specifies the protected LSP count
Type	Specifies the type

The following output is an example of MPLS bypass tunnel detailed information and [Table 57: MPLS bypass tunnel detailed output fields](#) describes MPLS bypass tunnel output fields.

**Output Example**

```
A:Dut-B# show router mpls bypass-tunnel detail
=====
MPLS Bypass Tunnels (Detail)
=====
-----
bypass-node10.20.1.4
-----
To           : 10.20.1.7           State        : Up
Out I/F      : 1/1/4              Out Label    : 131071
Up Time     : 0d 01:17:22        Active Time   : n/a
Reserved BW  : 0 Kbps            Protected LSP Count : 1
Type        : Dynamic
Setup Priority : 7                Hold Priority  : 0
Class Type   : 0
Exclude Node : 10.20.1.4         Inter-Area    : True
Computed Hops :
  10.10.8.2(S)                   Egress Admin Groups : None
-> 10.10.8.6(SA)                  Egress Admin Groups : None
-> 10.20.1.7(L)                   Egress Admin Groups : None
Actual Hops  :
  10.10.8.2(10.20.1.2)           Record Label   : N/A
-> 10.10.8.6(10.20.1.6)          Record Label   : 131071
-> 10.20.1.7(10.20.1.7)          Record Label   : 131068
-> 10.10.22.7                    Record Label   : 131068
=====
```

**Output Example**

```
A:Dut-A>config>router>mpls>lsp$ /show router mpls bypass-tunnel detail
=====
MPLS Bypass Tunnels (Detail)
=====
-----
```

```
bypass-node10.20.1.2
-----
To           : 10.20.1.4           State          : Up
Out I/F      : 1/1/2              Out Label      : 131070
Up Time      : 0d 00:00:18        Active Time    : n/a
Reserved BW  : 0 Kbps             Protected LSP Count : 1
Type         : Dynamic
Setup Priority : 7                 Hold Priority   : 0
Class Type   : 0
Exclude Node  : None              Inter-Area     : False
Computed Hops :
  10.20.1.1, If Index : 3(S)      Egress Admin Groups : None
-> 10.20.1.3, If Index : 2(S)      Egress Admin Groups : None
-> 10.20.1.4, If Index : 5(S)      Egress Admin Groups : None
Actual Hops  :
  10.20.1.1, If Index : 3         Record Label    : N/A
-> 10.20.1.3, If Index : 2         Record Label    : 131070
-> 10.20.1.4, If Index : 5         Record Label    : 131070
=====
```

### Output Example

```
B:Dut-B>config>router>mpls>lsp# show router mpls bypass-tunnel detail
```

```
=====
MPLS Bypass Tunnels (Detail)
=====
```

```
bypass-node10.20.1.4
-----
```

```
To           : 10.10.10.6         State          : Up
Out I/F      : lag-1              Out Label      : 131071
Up Time      : 0d 00:00:06        Active Time    : n/a
Reserved BW  : 0 Kbps             Protected LSP Count : 1
Type         : Dynamic
Setup Priority : 7                 Hold Priority   : 0
Class Type   : 0
Exclude Node  : None
Actual Hops  :
  10.10.12.2(S)                  Egress Admin Groups:
                                  lime
                                  olive
                                  blue
                                  black
                                  acqua
-> 10.10.12.3(S)                  Egress Admin Groups:
                                  olive
                                  Unknown Group 9
                                  Unknown Group 11
                                  black
                                  Unknown Group 16
                                  Unknown Group 18
-> 10.10.5.5(S)                  Egress Admin Groups:
                                  purple
                                  Unknown Group 7
                                  Unknown Group 11
                                  orange
                                  acqua
                                  Unknown Group 16
                                  Unknown Group 19
                                  Unknown Group 21
                                  Unknown Group 22
```

```
Unknown Group 26
khaki
-> 10.10.10.6(S)      Egress Admin Groups: None
=====
```

### Output Example

```
A:Dut-B# show router mpls bypass-tunnel detail
=====
MPLS Bypass Tunnels (Detail)
=====
bypass-link10.10.104.4
-----
To           : 10.10.101.4      State           : Up
Out I/F      : 1/1/2:1         Out Label      : 129994
Up Time     : 0d 00:02:33     Active Time    : n/a
Reserved BW  : 0 Kbps        Protected LSP Count : 1
Type        : Dynamic
SetupPriority : 7             Hold Priority   : 0
Class Type   : 0
Actual Hops  :
    10.10.101.2      -> 10.10.101.4
=====
```

### Output Example

```
A:Dut-C# show router mpls bypass-tunnel path detail dns
=====
MPLS Bypass Tunnels (Detail)
=====
bypass-node10.20.1.1-61442
-----
To           : 10.10.12.2      State           : Up
Out I/F      : lag-1         Out Label      : 524278
Up Time     : 0d 00:07:35     Active Time    : n/a
Reserved BW  : 0 Kbps        Protected LSP Count : 10
Type        : Dynamic        Bypass Path Cost : 333
Setup Priority : 7             Hold Priority   : 0
Class Type   : 0
Exclude Node : None          Inter-Area     : False
Computed Hops :
    10.10.12.3(S)           Egress Admin Groups : None
-> 10.10.12.2(S)           Egress Admin Groups : None
Actual Hops  :
    10.10.12.3(10.20.1.3)   Record Label     : N/A
    toB-lag.Dut-C.nokia.com
    (Dut-C.system.nokia.com)
-> 10.10.12.2(10.20.1.2)   Record Label     : 524278
    toC-lag.Dut-B.nokia.com
    (Dut-B.nokia.com)
Last Resignal :
Attempted At  : n/a         Resignal Reason  : n/a
Resignal Status: n/a       Reason           : n/a
=====
```

Table 57: MPLS bypass tunnel detailed output fields

Label	Description
Up Time	Specifies the up time
Active Time	Specifies the active time
Bypass Path Cost	Specifies the bypass path cost
Setup Priority	Specifies the setup priority
Hold Priority	Specifies the hold priority
Class Type	Specifies the class type
Exclude Node	Specifies the excluded nodes
Inter-Area	Specifies the inter-area status
Computed Hops	Specifies the computed hops
Egress Admin Groups	Specifies the Egress administration groups
Actual Hops	Specifies the actual hops
Record Label	Specifies the record label
Last Resignal	Specifies the resignal time
Attempted At	Specifies the attempted at time
Resignal Reason	Specifies the resignal reason
Resignal Status	Specifies the resignal status
Reason	Specifies the reason

## bypass-tunnel

### Syntax

**bypass-tunnel** [*/sp-name*] plr

### Context

[\[Tree\]](#) (tools>dump>router>mpls bypass-tunnel)

### Full Context

tools dump router mpls bypass-tunnel

## Description

This command displays information about the MPLS bypass tunnel.

## Parameters

### *lsp-name*

Specifies the LSP name up to 64 characters in length.

### *plr*

Specifies the point of local repair (PLR).

## Platforms

All

## Output

The following output is an example of MPLS Bypass Tunnels PLR fields.

### Output Example

```
tools dump router mpls bypass-tunnel plr
=====
MPLS Bypass Tunnels
=====
Legend : m - Manual      d - Dynamic      p - P2mp
=====
To          State  Out I/F      Out Label    Reserved    Protected    Type
          BW (Kbps)  LSP Count
-----
10.10.12.1  Up    1/1/4        124181       0           369          d

To          : 10.10.12.1      State          : Up
Out I/F     : 1/1/4            Out Label      : 124181
Up Time    : 0d 19:24:13     Active Time    : n/a
Reserved BW : 0 Kbps         Protected LSP Count : 369
Type       : Dynamic
SetupPriority : 7              Hold Priority   : 0
Class Type  : 0              Tunnel Id      : 63697
Actual Hops :
    10.10.12.2(S)    -> 10.10.12.1(S)

    Plr List: (Last PlrIdx 2)
    -----
        PLR List Index = 1
        PLR current State = PLRS_CONNECTED
        NextNodeSysId = 10.8.8.8
        AvoidNodeId   = 10.2.2.2
        NodeProtect   = 2 (Node Protect)
        LSP Count     = 197
        PLR List Index = 2
        PLR current State = PLRS_BackupInUse
        NextNodeSysId = 10.8.8.8
        AvoidNodeId   = 10.2.2.2
        NodeProtect   = 2 (Node Protect)
        LSP Count     = 203
```

## 6 c Commands

### 6.1 ca-profile

ca-profile

#### Syntax

ca-profile

ca-profile *name* [association]

#### Context

[\[Tree\]](#) (show certificate ca-profile)

#### Full Context

show certificate ca-profile

#### Description

This command shows certificate-authority profile information.

#### Parameters

*name*

Specifies the name of the Certificate Authority (CA) profile.

association

Displays associated CA profiles.

#### Platforms

All

### 6.2 cache

cache

#### Syntax

cache [peer *ip-address*] [group *ip-address*] [source *ip-address*] [originrp *ip-address*]

## Context

[\[Tree\]](#) (clear>router>msdp cache)

## Full Context

clear router msdp cache

## Description

This command clears the MSDP cache.

## Parameters

**peer** *ip-address*

Clears the cache of the IP address of the peer to which MSDP source-active (SA) requests for groups matching this entry's group range were sent.

**group** *ip-address*

Clears the group IP address of the SA entry.

**source** *ip-address*

Clears the source IP address of the SA entry.

**originrp** *ip-address*

Clears the origin rendezvous point (RP) address type of the SA entry.

## Platforms

All

cache

## Syntax

**cache aggregate** {src-dst-proto | src-dst-proto-port} family {ipv4 | ipv6}

**cache all family** {ipv4 | ipv6}

## Context

[\[Tree\]](#) (tools>dump>cflowd cache)

## Full Context

tools dump cflowd cache

## Description

This command displays the contents of the cflowd active cache. This information can be displayed either in raw form where every flow entry is displayed or in an aggregated form.

[Table 58: Tools Dump cflowd Cache Output Fields](#) describes the cflowd cache output fields.

Table 58: Tools Dump cflowd Cache Output Fields

Label	Description
Proto/Protocol	Displays the IPv4 or IPv6 protocol type
Source Address/Src-IP	Displays the source IP address of the flow (IPv4 or IPv6)
Destination Address/Dst-IP	Displays the destination IP address of the flow (IPv4 or IPv6)
Intf/Ingr	Displays the ingress interface associated with the sampled flow (only displayed with the raw (all) output)
Intf/Egr	Displays the egress interface associated with the sampled flow (only displayed with the raw (all) output)
S-Port	Displays the source protocol port number
D-Port	Displays the destination protocol port number
Pkt-Cnt	Displays the total number of packets sampled for the associated flow
Byte-Cnt	Displays the total number of bytes of traffic sampled for the associated flow
Start-Time	Displays the system time when the first packet was sampled for the associated flow
Flags	Displays the IP flag value from the sampled IP flow header (only displayed with the raw (all) output)
ToS	Displays the ToS byte values from the sampled IP flow header (only displayed with the raw (all) output)
(Src) Mask	Displays the IP route mask for the route to the flow source IP address associated with the flow (only displayed with the raw (all) output)
(Dst) Mask	Displays the IP route mask for the route to the flow destination IP address associated with the flow (only displayed with the raw (all) output)
(Src) AS	Displays the ASN associated with the route to the flow source IP address associated with the flow (only displayed with the raw (all) output)
(Dst) AS	Displays the ASN associated with the route to the flow destination IP address associated with the flow (only displayed with the raw (all) output)



Label	Description
vRtr-ID	Displays the Virtual Router ID associated with the reported IP flow (only displayed with the raw (all) output)

## Parameters

### aggregate

Displays the aggregated active cache flow data.

**Values** src-dst-proto — Aggregates the active flow cache based on the source and destination IP address and the IP protocol value.

src-dst-proto-port — Aggregates the active flow cache based on the source and destination IP address, IP protocol value, and the source and destination port numbers.

### family

Specifies which IP address family flow data should be displayed.

**Values** ipv4 — Displays the IPv4 flow data.

ipv6 — Displays the IPv6 flow data.

### all

Displays the raw active cache flow data with no aggregation.

## Platforms

All

## 6.3 cache-contents

### cache-contents

#### Syntax

```
cache-contents [isa mda-id/esa-vm-id] url file-url
```

#### Context

[\[Tree\]](#) (tools>dump>app-assure>group>ipassist cache-contents)

#### Full Context

```
tools dump application-assurance group ip-identification-assist cache-contents
```

#### Description

This command dumps the cache contents generated by the IP identification assist feature into a local or remote destination.

## Parameters

### **isa** *mda-id*

Specifies the slot and MDA of the ISA in the format *slot/mda*.

Values	
<i>slot/mda</i>	
<i>slot</i>	1 to 10, depending on chassis model
<i>mda</i>	1 to 2, depending on chassis model

### **isa** *esa-vm-id*

Specifies the ESA and ESA VM in the format *esa-esa-id/vm-id*.

Values	
<i>esa-esa-id/vm-id</i>	
<i>esa-id</i>	1 to 16
<i>vm-id</i>	1 to 4

### **url** *file-url*

Specifies a local or remote destination to which the cache content output is directed.

Values	
<i>local-url   remote-url</i>	
<i>local-url</i>	<i>[cflash-id]/file-path</i> 200 characters maximum, including <i>cflash-id</i>  directory length 99 characters maximum each
<i>remote-url</i>	{ <i>ftp   tftp</i> }:://[ <i>login:pswd@</i> ] <i>remote-locn</i> /[ <i>filepath</i> ]  255 characters maximum, <i>filepath</i> 199 characters maximum
<i>remote-locn</i>	{ <i>hostname   ipv4-address   "[ipv6-address]"</i> }[: <i>port</i> ]
<i>ipv4-address</i>	<i>a.b.c.d</i>
<i>ipv6-address</i>	<i>x:x:x:x:x:x[-interface]</i>  <i>x:x:x:x:x.d.d.d[-interface]</i>  <i>x</i> - [0 to FFFF]H  <i>d</i> - [0 to 255]D
<i>port</i>	interface - 32 characters maximum, for link local addresses  [0 to 65535]

*cflash-id*

cf1: | cf1-A: | cf1-B: | cf2: | cf2-A: | cf2-B: | cf3: | cf3-A: | cf3-B:

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

Use the following command to direct the cache contents generated by the IP identification assist feature to a remote destination.

```
tools dump application-assurance group 1 ip-identification-assist cache-contents isa 1/1 url ftp://exuser:expassword@192.0.2.1/tmp/sample-cache
```

## Output Example

```
=====
Application-Assurance Group 1 ip-identification-assist cache contents
=====

Writing to file ftp://exuser:expassword@192.0.2.1/tmp/sample-cache_1_1.ip-ident-assist-cache ...

File closed

-rw-r--r-- 1 exuser exuser 16553 Aug 24 09:22 sample-cache_1_1.ip-ident-assist-cach
```

Use the following command to dump information stored in the cache related to the IP identification assist feature for top applications.

```
tools dump application-assurance group "1" ip-identification-assist cache-contents isa "1/1"
```

## Output Example

```
=====
Application-Assurance Group 1 ip-identification-assist cache contents
=====

isa 1/1
Entry      IP Address      Application      Parent
Application Status      Num IP Matches  Num Updates
Create Time  Last Update Time Last Match Time
-----
-----
1          20.217.13.99    "Application1"  "Parent"
Application1 Active-Application 0          0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
2          112.217.13.99   "Application2"  "Parent"
Application2 Active-Application 0          0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
3          79.217.13.99    "Application3"  "Parent"
Application3 Active-Application 0          0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
...
```

```

...
... .
150      35.217.13.99      "Application4"      "Parent
Application1"      Active-Application  0      0
"06/13/2023 14:29:11" "06/13/2023 14:29:11" "N/A"

Total entries in-use: 150
=====
    
```

Use the following command to dump detailed information stored in the cache related to the IP identification assist feature for top applications.

```

tools dump application-assurance group "1" ip-identification-assist cache-contents detail isa
"1/1"
    
```

**Output Example**

```

=====
Application-Assurance Group 1 ip-identification-assist cache contents
=====

isa 1/1
Entry      IP Address      Application      Parent
Application IP Address      Status      Num IP Matches      Num Updates
Create Time      Last Update Time      Last Match Time
-----
1          20.217.13.99      "Application1"  "Parent
Application1"      Active-Application  0      0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
      Dns Snoop
      Active-Application  0      0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
      Positive App Id
      "N/A"      0      0
"N/A"      "N/A"      "N/A"

2          112.217.13.99      "Application2"  "Parent
Application2"      Active-Application  0      0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
      Dns Snoop
      Active-Application  0      0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
      Positive App Id
      "N/A"      0      0
"N/A"      "N/A"      "N/A"

3          79.217.13.99      "Application3"  "Parent
Application3"      Active-Application  0      0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
      Dns Snoop
      Active-Application  0      0
"06/13/2023 14:29:10" "06/13/2023 14:29:10" "N/A"
      Positive App Id
      "N/A"      0      0
"N/A"      "N/A"      "N/A"
...
... .
... .
    
```

```

150      35.217.13.99      "Application4"      "Parent
Application1"      Active-Application      0      0
"06/13/2023 14:29:11" "06/13/2023 14:29:11" "N/A"
      Dns Snoop
      Active-Application      0      0
"06/13/2023 14:29:11" "06/13/2023 14:29:11" "N/A"
      Positive App Id
      "N/A"      "N/A"      0      0
"N/A"      "N/A"      "N/A"

Total entries in-use: 150
=====
    
```

## 6.4 calculate-maps

### calculate-maps

#### Syntax

**calculate-maps** *router router-instance subscriber-type nat-sub-type prefix ip-prefix/length*

#### Context

[\[Tree\]](#) (tools>perform>nat>deterministic calculate-maps)

#### Full Context

tools perform nat deterministic calculate-maps

#### Description

This command allows the operator to reveal the auto-mappings before they are created in the system, while the inside prefix is still out of service (in a **shutdown** administrative state). Based on the auto-mapping results, the user can decide to use the auto-mapping and operationalize the prefix (**no shutdown** command), or to use custom mappings.

The inside IP addresses for deterministic subscribers and for 1:1 protocol agnostic subscribers can be mapped to outside IP addresses in the following ways:

- Automatically by the system. By enabling the deterministic prefix (**no shutdown** command), the system will automatically create map commands and sequentially map subscribers into outside IP address space.
- Manually by the operator by configuring the map commands. This gives the operator control over mappings beyond the sequential auto-mapping.

#### Parameters

##### **router-instance**

Specifies the inside router name or VPRN service instance where the deterministic prefix resides.

**Values** <router-name> | <vprn-svc-id>

router-name — "Base"  
vprn-svc-id — 1 to 2147483647

### ***nat-sub-type***

Specifies the NAT subscriber type.

**Values** classic-lsn-sub, dslite-lsn-sub

### ***ip-prefix/length***

Specifies the inside prefix containing IP addresses for which mapping is sought. The IP prefix is IPv4 family type for classic LSN subscriber and IPv6 family type for a DS-Lite subscriber.

<b>Values</b>	<ip-prefix/ip-prefix-length>	<ipv4-prefix>/<ipv4-prefix-length> <ipv6-prefix>/<ipv6-prefix-length>
	<ipv4-prefix>	a.b.c.d (host bits must be 0)
	<ipv4-prefix-length>	0 to 32
	<ipv6-prefix>	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d
		x - [0 to FFFF]H d - [0 to 255]D
	<ipv6-prefix-length>	[0 to 128]

### **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## **6.5 call-trace**

### **call-trace**

#### **Syntax**

**call-trace**

#### **Context**

[\[Tree\]](#) (show call-trace)

#### **Full Context**

show call-trace

## Description

Commands in this context display information related to the call-trace module.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## call-trace

## Syntax

**call-trace**

## Context

**[Tree]** (clear call-trace)

## Full Context

clear call-trace

## Description

This command clears call trace jobs.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 6.6 cam-utilization

## cam-utilization

## Syntax

**cam-utilization** [**card** *slot-number*]

## Context

**[Tree]** (tools>dump>filter cam-utilization)

## Full Context

tools dump filter cam-utilization

## Description

This command, when used without parameters, specifies the utilization per CAM table for line card ACL filters per FP for FP4- and FP5-based cards in the system. Optionally, the card number can be provided as a parameter to limit the output to a single card.

## Parameters

### *slot-number*

Specifies the IOM slot number.

**Values** 1 to 10, **A**, **B**

## Platforms

All

## Output

The following output is an example of CAM utilization information for filters.

### Output Example

```
*A:7750# tools dump filter cam-utilization
=====
Filter Cam Utilization
=====
Slot FP Dir Type Cam Utilization %
-----
2 1 Ing ip-mac 0
2 1 Egr ip-mac 100
2 1 Ing ipv6 0
2 1 Egr ipv6 0
=====
```

## 6.7 candidate

### candidate

## Syntax

**candidate**

## Context

[\[Tree\]](#) (show>system candidate)

## Full Context

show system candidate

## Description

This command shows classic CLI candidate configuration information.



### Note:

This command is not available in the MD-CLI. Use the MD-CLI **info** command in a configuration region.



## Platforms

All

## Output

The following output is an example of candidate information, and [Table 59: Candidate Output Fields](#) describes the output fields.

### Output Example

```
*A:bksim3107# show system candidate
=====
Candidate Config Information
=====
Candidate configuration state      : modified
Num editors/viewers              : 0
Candidate cfg exclusive locked   : no
Last commit state                : revert-failed
Last commit time                 : 10/23/2012 17:21:47
Checkpoint created with last commit : yes
Scheduled revert time           : N/A
Last commit revert time         : 10/23/2012 17:22:47
=====
Users in edit-cfg mode
=====
Username      Type (from)
=====
admin         Console
Joris        Telnet (192.0.2.239)
=====
```

Table 59: Candidate Output Fields

Label	Description
Candidate configuration state	<ul style="list-style-type: none"> <li>• empty — indicates there are no uncommitted changes in the candidate config</li> <li>• modified — indicates there are uncommitted changes in the candidate config</li> <li>• unconfirmed — indicates there are no uncommitted changes in the candidate config but the result of the last commit will be auto-reverted unless it is confirmed before the timeout expires</li> </ul>
Num editors/viewers	Displays the number of CLI sessions currently in edit-cfg mode
Candidate cfg exclusive locked	Indicates if a user has exclusively locked the candidate using the <b>candidate edit exclusive</b> command
Last commit state	<ul style="list-style-type: none"> <li>• none — indicates there have been no commits since the last reboot of the node</li> <li>• in-progress — indicates the system is currently committing the candidate config</li> <li>• success — indicates the last commit finished successfully</li> </ul>

Label	Description
	<ul style="list-style-type: none"> <li>• revert-pending — indicates the last commit finished successfully but has not been confirmed yet, and will be auto-reverted if it is not confirmed before the timeout expires</li> <li>• failed — indicates the last commit failed and has been undone</li> <li>• revert-in-progress — indicates the last commit finished successfully but was not confirmed in time and is currently being reverted</li> <li>• reverted — indicates the last commit finished successfully but was not confirmed in time and has been reverted</li> <li>• revert-failed — indicates the last commit finished successfully but was not confirmed in time and the system attempted to revert it but failed</li> </ul>
Last commit time	Displays the time at which the last commit attempt was started
Checkpoint created with last commit	Indicates if a rollback checkpoint was created after the previous commit completed
Scheduled revert time	Indicates the currently scheduled auto-revert time based on the confirmed option being used with a candidate commit
Last commit revert time	Displays the time the commit was last reverted
Users in edit-cfg mode	Lists all the user sessions that are currently in edit-cfg mode
Type (from)	Indicates the type of session (such as Console, Telnet, and so on) and also the source of the session (such as the source IP address of the remote host)

## 6.8 capabilities

### capabilities

#### Syntax

**capabilities** [*system-id* | */sp-id*] [**level** *level*]

#### Context

**[Tree]** (show>router>isis capabilities)

#### Full Context

show router isis capabilities

## Description

This command displays the IS-IS capability information.

## Parameters

### *system-id*

Only the LSPs related to the specified *system-id* are listed.

### *lsp-id*

Only the specified LSP is listed.

### *level*

Specifies the interface level (1, 2, or 1 and 2).

## Platforms

All

## Output

The following output is an example of IS-IS capability information, and [Table 60: IS-IS Capability Information Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-B# show router isis 0 capabilities
=====
Rtr Base ISIS Instance 0 Capabilities
=====
Displaying Level 1 capabilities
-----
LSP ID      : Dut-B.00-00
Router Cap  : 10.20.1.2, D:0, S:0
TE Node Cap : B E M P
SR Cap: IPv4 MPLS-IPv6
SRGB Base:20000, Range:10001
SR Alg: metric based SPF, 128
Node MSD Cap: BMI : 12 ERLD : 15
FAD Sub-Tlv:
Flex-Algorithm : 128
Metric-Type    : delay
Calculation-Type : 0
Priority       : 100
Flags: M
LSP ID      : Dut-D.00-00
Router Cap  : 10.20.1.4, D:0, S:0
TE Node Cap : B E M P
SR Cap: IPv4 MPLS-IPv6
SRGB Base:20000, Range:10001
SR Alg: metric based SPF, 128
Node MSD Cap: BMI : 12 ERLD : 15
FAD Sub-Tlv:
Flex-Algorithm : 128
Metric-Type    : delay
Calculation-Type : 0
Priority       : 50
Flags: M
Level (1) Capability Count : 2
Displaying Level 2 capabilities
LSP ID      : Dut-A.00-00
Router Cap  : 10.20.1.1, D:0, S:0
```

```

TE Node Cap : B E M P
SR Cap: IPv4 MPLS-IPv6
  SRGB Base:20000, Range:10001
SR Alg: metric based SPF, 128
Node MSD Cap: BMI : 12 ERLD : 15
LSP ID   : Dut-B.00-00
Router Cap : 10.20.1.2, D:0, S:0
TE Node Cap : B E M P
SR Cap: IPv4 MPLS-IPv6
  SRGB Base:20000, Range:10001
SR Alg: metric based SPF, 128
Node MSD Cap: BMI : 12 ERLD : 15
FAD Sub-Tlv:
  Flex-Algorithm   : 128
  Metric-Type      : delay
  Calculation-Type : 0
  Priority          : 100
  Flags: M
LSP ID   : Dut-C.00-00
Router Cap : 10.20.1.3, D:0, S:0
TE Node Cap : B E M P
SR Cap: IPv4 MPLS-IPv6
  SRGB Base:20000, Range:10001
SR Alg: metric based SPF, 128
Node MSD Cap: BMI : 12 ERLD : 15
Level (2) Capability Count : 3
=====
*A:Dut-B#
    
```

Table 60: IS-IS Capability Information Output Fields

Label	Description
Flex-Algorithm	The flexible algorithm number
Priority	Displays the FAD priority; It is the tiebreaker when multiple FADs are received
Metric Type	The metric used by the winning FAD igp — the IGP metric is used te-metric — the TE metric is used delay — the delay metric is used
Calculation Type	Displays the calculation type; for SPF a zero value is only defined
Flags	Displays the FAD Flags; the M-flag is used for inter-area; when set, the metric must be used for inter-area traffic to avoid loops and blackhole traffic on ABR/ASBR

## capabilities

### Syntax

**capabilities** [*router-id*]

## Context

[\[Tree\]](#) (show>router>ospf capabilities)

[\[Tree\]](#) (show>router>ospf3 capabilities)

## Full Context

show router ospf capabilities

show router ospf3 capabilities

## Description

This command displays the entries in the Router Information (RI) LSAs.

## Parameters

### *router-id*

Lists only the LSAs related to that router ID. If no *router-id* is specified, all database entries are listed.

## Platforms

All

## Output

OSPF Capabilities Output

The following table describes the standard and detailed command output fields for OSPF capabilities.

### Output Example

```
*A:Dut-C# show router ospf capabilities
=====
Rtr Base OSPFv2 Instance 0 Capabilities
=====
scope      Router Id      Capabilities
-----
Area       10.20.1.2     0x14: Stub P2P-VLAN
            SR Algorithm: IGP-metric-based-SPF
            SR Label Range: start label 22000 range 1001
Area       10.20.1.3     0x14: Stub P2P-VLAN
            SR Algorithm: IGP-metric-based-SPF
            SR Label Range: start label 23030 range 71
Area       10.20.1.4     0x14: Stub P2P-VLAN
            SR Algorithm: IGP-metric-based-SPF
            SR Label Range: start label 24000 range 1001
Area       10.20.1.5     0x14: Stub P2P-VLAN
            SR Algorithm: IGP-metric-based-SPF
            SR Label Range: start label 25000 range 1001
Area       10.20.1.1     0x14: Stub P2P-VLAN
            SR Algorithm: IGP-metric-based-SPF
            SR Label Range: start label 21000 range 1001
Area       10.20.1.2     0x14: Stub P2P-VLAN
            SR Algorithm: IGP-metric-based-SPF
            SR Label Range: start label 22000 range 1001
Area       10.20.1.3     0x14: Stub P2P-VLAN
            SR Algorithm: IGP-metric-based-SPF
            SR Label Range: start label 23030 range 71
-----
```

```
No. of LSAs: 7  
=====
```

## 6.9 capture-sap

### capture-sap

#### Syntax

```
capture-sap [statistics] sap-id
```

#### Context

[\[Tree\]](#) (show>service>id>dynsvc capture-sap)

#### Full Context

```
show service id dynamic-services capture-sap
```

#### Description

This command displays the status and statistics of a dynamic services capture. Statistics include counters for the number of data triggers received and data trigger drop reasons.



#### Note:

This command is not available in the MD-CLI.

#### Parameters

**sap-id**

Specifies the dynamic services capture SAP.

**statistics**

Displays data trigger receive and drop reason counters for this dynamic services capture SAP.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of capture SAP information.

#### Output Example

```
# show service id 10 dynamic-services capture-sap 1/1/1:10.*  
=====
```

```
Dynamic Services Capture SAP 1/1/1:10.*  
=====
```

```
Dynamic services policy      : dyn-svc-1  
Administrative state        : in-service  
-----
```

```

Last Mgmt Change           : 01/20/2016 12:54:06
=====
# show service id 10 dynamic-services capture-sap 1/1/1:10.* statistics
=====
Dynamic Services Capture SAP 1/1/1:10.* Statistics
=====
Data packets received by SAP           : 0
-----
Drop Reason Counters
-----
No policy configured at capture SAP level      : 0
No authentication configured in policy         : 0
Data-trigger already exists                   : 0
Lockout is active                             : 0
Reached data-trigger system limit             : 0
No memory available                           : 0
Unsuccessful authentication                  : 0
No data-trigger SAP-id in authentication      : 0
Corresponding dynamic SAP is not created      : 0
=====
    
```

**Table 61: Capture SAP Field Descriptions** describes the Capture SAP policy fields.

*Table 61: Capture SAP Field Descriptions*

Counter	Description
Data packets received by SAP	The number of dynamic service data triggers received on the capture SAP that reached the CPM.
No policy configured at capture SAP level	There is no dynamic-services-policy configured at the capture SAP. This is required to determine the authentication destination.
No authentication configured in policy	The authentication section in the specified in dynamic services policy is missing or incomplete.
Data-trigger already exists	A new data trigger frame is received for an existing data trigger that is authenticated, but the corresponding dynamic SAP is not yet created. The new data trigger packet is dropped.
Lockout is active	The data trigger for this managed SAP is currently in a lockout state due to previous authentication failures.
Reached data-trigger system limit	The maximum number of dynamic service data triggers supported on the system is reached. Additional data triggers are dropped.
No memory available	There is not enough system memory available to process the data trigger.
Unsuccessful authentication	The authentication for a data trigger on this capture SAP failed or timed out.

Counter	Description
No data-trigger SAP-id in authentication	The dynamic services data trigger SAP ID is not provided in authentication. This is a mandatory parameter.
Corresponding dynamic SAP is not created	The data trigger successfully authenticated but the corresponding dynamic SAP was not created. This is typically caused by a dynamic services script error.

## capture-sap

### Syntax

**capture-sap** [**statistics**] *sap-id*

### Context

[\[Tree\]](#) (clear>service>id>dynsvc capture-sap)

### Full Context

clear service id dynamic-services capture-sap

### Description

This command clears the dynamic services capture SAP control plane statistics (data triggers received and data trigger drop reason counters).

### Parameters

#### **statistics**

Clears the data trigger statistics for a capture SAP.

#### **sap-id**

Specifies the dynamic services capture SAP.

#### **Values**

null	<i>port-id   bundle-id   bpgrp-id   lag-id   aps-id   eth-sat-id</i>
dot1q	<i>port-id   bundle-id   bpgrp-id   lag-id   aps-id   pw-id   eth-sat-id:[qtag1   cp-conn-prof-id]</i>
qinq	<i>port-id   bundle-id   bpgrp-id   lag-id   pw-id   eth-sat-id:[qtag1 cp-conn-prof-id].[qtag2   cp-conn-prof-id]</i>
<b>cp</b>	keyword
<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>
ima-grp	<i>bundle-id [:vpi/vci   vpi   vpi1.vpi2   cp.conn-prof-id]</i>



	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port[.channel]</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-tunnel	<i>eth-tunnel-id[:eth-tun-sap-id]</i>	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>   <b>lag-string</b>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	null   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private</b>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
eth-sat-id	<b>esat-id/slot/port</b>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 6.10 card

### card

#### Syntax

**card** *slot-number* **cpu** [**sample-period** *seconds*]

**card** *slot-number* **fp** *fp-number* **dist-cpu-protection**

**card** *slot-number* **fp** *fp-number* [**tap** *tap-number*] **ingress per-egress-fp-stats**

**card** *slot-number* **fp** *fp-number* [**tap** *tap-number*] **egress per-ingress-fp-stats**

**card** *slot-number* **fp** *fp-number* **policy-accounting**

**card** *slot-number* **memory-pools**

**card** **state**

**card** [*slot-number*]

**card** [*slot-number*] **detail**

**card** *slot-number* **fp** *fp-number* **fwd-engine drop-reason statistics**

**card** *slot-number* **fp** *fp-number* **ingress queue-group mode** {**access** | **network**}

**card** *slot-number* [**detail**] **fp** *fp-number* **ingress queue-group** *queue-group-name* **instance** [*instance-number*] **mode** {**access** | **network**} [**statistics**]

#### Context

[\[Tree\]](#) (show card)

#### Full Context

show card

#### Description

This command shows card information.

If no command line parameters are specified, a card summary for all cards is displayed.

#### Parameters

##### ***slot-number***

Displays information for the specified card slot.

**Values** Depending on the chassis model, IOM/XCM slots are numbered from 1 to 10. CPM slots are A, B. The 7950 XRS has additional slots C, D

(upper or lowercase). SFM slots are not addressed as cards. See the **show sfm** command.

**cpu**

Displays CPU utilization.

**seconds**

Displays the number of seconds over which to sample CPU task utilization.

**Values** 1 to 300

**fp-number**

Displays information for the specified forwarding plane.

**Values** 1 to 8

**dist-cpu-protection**

Displays the distributed CPU protection information.

**policy-accounting**

Displays the policy accounting information.

**memory-pools**

Displays the memory pools for the card.

**state**

Displays provisioned and equipped card and MDA information.

**detail**

Displays detailed card information.

**fwd-engine**

Displays forwarding engine information.

**drop-reason**

Displays drop reason information.

**statistics**

Displays statistics information.

**ingress**

Specifies statistics are ingress related.

**egress**

Specifies statistics are egress related.

**tap-number**

Displays the source TAP number.

**Values** 1 to 2

**per-egress-fp-stats**

Displays packet and octet statistics for unicast traffic sent from the specified FP to each destination FP. Only supported on 7750 SR-1 and 7750 SR-s platforms.

### **per-ingress-fp-stats**

Displays packet and octet statistics for unicast traffic received by the specified FP from each source FP. Only supported on 7750 SR-1 and 7750 SR-s platforms.

### **queue-group**

Displays queue group information.

### **mode**

Specifies the mode in which the card will operate.

### **access**

Displays information for the queue groups related to access mode.

### **network**

Displays information for the queue groups related to network mode.

## **Platforms**

All

## **Output**

See the following sections for output examples:

- [Output Example: show card \(showing the 7750 SR-12\)](#)
- [Output Example: show card \(showing the 7950 XRS-40\)](#)
- [Output Fields: show card](#)
- [Output Example: show card state \(showing 7750 SR-12 Chassis\)](#)
- [Output Example: show card state \(showing 7750 SR-14s Chassis\)](#)
- [Output Example: show card state \(showing 7450 ESS-12 Chassis\)](#)
- [Output Example: show card state \(showing a 7950 XRS Chassis\)](#)
- [Output Fields: show card state](#)
- [Output Example: show card <slot-number> detail \(showing IOM5-e Card\)](#)
- [Output Example: show card <slot-number> detail \(showing XCM-20 Card\)](#)
- [Output Fields: show card <slot-number> detail \(for an IOM or XCM Card\)](#)
- [Output Example: show card <slot-number> detail \(showing CPM5 Cards\)](#)
- [Output Example: show card <slot-number> detail \(showing CPM-x20 Cards\)](#)
- [Output Fields: show card <slot-number> detail \(for a CPM\)](#)
- [Output Example: show card <slot-number> detail \(showing IOM iwth license detail\)](#)
- [Output Fields: show card <slot-number> detail \(showing IOM with license level\)](#)
- [Output Example: show card <slot-number> fp fwd-engine drop-reason statistics](#)
- [Output Fields: show card<slot-number> fp fwd-engine drop-reason statistics](#)
- [Output Example: show card <slot-number> fp <fp-number> ingress per-egress-fp-stats](#)
- [Output Example: show card <slot-number> fp <fp-number> ingress per-egress-fp-stats tap <tap-number>](#)
- [Output Example: show card <slot-number> fp <fp-number> egress per-ingress-fp-stats](#)

- **Output Fields:** `show card <slot-number> fp <fp-number> ingress per-egress-fp-stats`

**Output Example: show card (showing the 7750 SR-12)**

```
*A:Dut-A# show card
=====
Card Summary
=====
Slot      Provisioned Type      Admin Operational  Comments
          Equipped Type (if different)  State State
-----
6         iom4-e                up    up
7         iom4-e                up    up
8         iom4-e-hs            up    up
9         iom4-e                up    up
A         cpm5                  up    up/active
B         cpm5                  up    up/standby
=====
```

**Output Example: show card (showing the 7950 XRS-40)**

```
A:Dut-A# show card
=====
Card Summary
=====
Slot      Provisioned Type      Admin Operational  Comments
          Equipped Type (if different)  State State
-----
1         xcm-x20               up    up
2         xcm-x20               up    up
A         cpm-x20               up    up/active
B         cpm-x20               up    up/standby
C         cpm-x20               up    down/ext-stby
D         cpm-x20               up    up/ext-actv
=====
```

**Output Fields: show card**

Table 62: Output Field: `show card` describes the output fields for the `show card` command.

Table 62: Output Field: `show card`

Label	Description
Slot	The slot number of the card in the chassis.
Provisioned Type	The card type that is configured for the slot. Note: CPMs C and D do not appear in the summary unless the Chassis Topology is Extended (for the 7950 XRS-40).
Equipped Type	The card type that is actually populated in the slot. Note: CPMs C and D do not appear in the summary unless the Chassis Topology is Extended (for the 7950 XRS-40).
Admin State	Up — The card is administratively up. Down — The card is administratively down.
Operational State	Up — The card is operationally up.

Label	Description
	<p>Down — The card is operationally down.</p> <p>active — The CPM is the Active CPM for the system (actively managing the system components, processing various protocols, and so on).</p> <p>standby — The CPM is the Standby CPM. The standby is hot synchronized with the Active CPM.</p> <p>ext-actv — The CPM is operating in an Extension role in a 7950 XRS-40 system and is the active extension CPM for the chassis in which it sits.</p> <p>ext-stby — The CPM is operating in an Extension role in a 7950 XRS-40 system and is the standby extension CPM for the chassis in which it sits.</p>
Comments	<p>Active — Indicates if the CPM is the active state.</p> <p>Standby — Indicates if the CPM is the standby state.</p> <p>No SFM — Indicates no SFM is online that is usable by this card.</p> <p>Pwr Save — Indicates if the card is in power save mode.</p> <p>Lo Power — Indicates if the card is in low power mode. It is prevented from booting by power management.</p> <p>SFM Test — Indicates card is being held in booting because a B2B standalone SFM inter-connect test is in progress.</p> <p>No MDA — Indicates the card is waiting for MDAs. MDAs are either missing or failed.</p>

**Output Example: show card state (showing 7750 SR-12 Chassis)**

```
*A:Dut-A# show card state
=====
Card State
=====
Slot/ Provisioned Type Admin Operational Num Num Comments
Id Equipped Type (if different) State State Ports MDA
-----
6 iom4-e up up 2
6/1 me40-lgb-csfp up up 40
6/2 me40-lgb-csfp up up 40
7 iom4-e up up 2
7/1 me40-lgb-csfp up up 40
8 iom4-e-hs up up 2
8/1 me12-10/lgb-sfp+ up up 12
8/2 me40-lgb-csfp up up 40
9 iom4-e up up 2
9/1 me12-10/lgb-sfp+ up up 12
9/2 me12-10/lgb-sfp+ up up 12
A cpm5 up up Active
B cpm5 up up Standby
=====
```

**Output Example: show card state (showing 7750 SR-14s Chassis)**

```
A:Dut-0# show card state
=====
Card State
=====
```

Slot/ Id	Provisioned Type Equipped Type (if different)	Admin State	Operational State	Num Ports	Num MDA	Comments
1	xcm-14s	up	up		2	
1/1	s18-100gb-qsfp28:he1200g+	up	up	18		
1/x2	iom-s-3.0t:he3000g+	up	up			
1/x2/1	ms18-100gb-qsfp28	up	up	18		
1/x2/2	ms4-400g-qsfpdd+4-100g-qsfp28	up	up	8		
2	xcm-14s	up	up		2	
2/x1	iom-s-3.0t:he3000g+	up	up			
2/x1/1	ms6-200gb-cfp2-dco	up	up	6		
6	xcm-14s	up	up		2	
6/1	s36-400gb-qsfpdd:he4800g+	up	up	36		
6/2	s36-100gb-qsfp28:he2400g+	up	up	36		
A	cpm-s	up	up			Active
B	cpm-s	up	up			Standby

**Output Example: show card state (showing 7450 ESS-12 Chassis)**

```
A:Dut-B# show card state
```

---

Card State

---

Slot/ Id	Provisioned Type Equipped Type (if different)	Admin State	Operational State	Num Ports	Num MDA	Comments
6	imm-1pac-fp3	up	up		1	
6/1	p1-100g-cfp	up	up	1		
7	imm-2pac-fp3	up	up		2	
7/2	p20-1gb-sfp	up	up	20		
8	imm-2pac-fp3	up	up		2	
8/1	isa2-bb	up	up	7		
	p-isa2-ms					
8/2	p3-40g-qsfp	up	up	3		
A	cpm5	up	up			Active
B	cpm5	up	up			Standby

**Output Example: show card state (showing a 7950 XRS Chassis)**

```
A:Dut-A# show card state
```

---

Card State

---

Slot/ Id	Provisioned Type Equipped Type (if different)	Admin State	Operational State	Num Ports	Num MDA	Comments
1	xcm-x20	up	up		2	
1/1	cx20-10g-sfp	up	up	20		
1/2	cx20-10g-sfp	up	up	20		
2	xcm-x20	up	up		2	
2/1	cx20-10g-sfp	up	up	20		
A	cpm-x20	up	up			Active
B	cpm-x20	up	up			Standby

**Output Fields: show card state**

[Table 63: Output Fields: show card state](#) describes the output fields for the **show card state** command.

Table 63: Output Fields: show card state

Label	Description
Slot/MDA	The slot number of the card in the chassis.
Provisioned Type	The card type that is configured for the slot.
Equipped Type	The card type that is actually populated in the slot.
Admin State	Up — The card is administratively up. Down — The card is administratively down.
Operational State	Up — The card is operationally up. Provisioned — There is no card in the slot but it has been pre-configured.
Num Ports	The number of ports available on the MDA.
Num MDA	The number of MDAs installed.
Comments	Active — Indicates if the CPM is the active state. Standby — Indicates if the CPM is the standby state. No SFM — Indicates no SFM is online that is usable by this card. Pwr Save — Indicates if the card is in power save mode. Lo Power — Indicates if the card is in low power mode. It is prevented from booting by power management. SFM Test — Indicates card is being held in booting because a B2B standalone SFM inter-connect test is in progress. No MDA — Indicates the card is waiting for MDAs. MDAs are either missing or failed.

**Output Example: show card <slot-number> detail (showing IOM5-e Card)**

```
*A:Dut-A# show card 1 detail
=====
Card 1
=====
Slot      Provisioned Type      Admin Operational   Comments
         Equipped Type (if different)  State State
-----
1         iom5-e:he1200g+      up    up
IOM Card Licensing Data
  Licensed Level      : he1200g+
  Description         : 1.2T /w Agg to 2.4T, High Edge Routing
IOM Card Specific Data
  Clock source       : none
  Fail On Error      : Disabled
  Reset On Recoverable Error : Disabled
  Available MDA slots : 2
  Installed MDAs     : 2
FP 1 Specific Data
```



```

WRED Admin State           : Out Of Service
WRED buffer-allocation max : 2500
WRED buffer-allocation min : 2500
WRED reserved-cbs max     : 2500
WRED reserved-cbs min     : 2500
WRED Slope Policy         : default
hi-bw-mc-srcEgress Alarm  : disabled
hi-bw-mc-srcEgress Group  : 0
mc-path-mgmt Admin State  : Out Of Service
Ingress Bandwidth Policy  : default
FP Resource Policy        : default
Hw-Agg-Shaping QSets     : True
Hw-Agg-Shaping QSet Size  : 4
Hw-Agg-Shaping In Use    : saps
Stable Pool Sizing       : False
Ingress Buffer Pool Size   : 8257536 KB
Egress Buffer Pool Size    : 8257536 KB
Initial Extract Priority Mode : uniform
HS Pool Policy            : None
HS Fixed High Threshold Delta : default
Generation                : FP4
Network ingress queue policy : default

Hardware Data
Platform type             : 7750
Part number               : 3HE12332CARB01
CLEI code                 : INUIAD3HAA
Serial number             : NS1936F7144
Manufacture date          : 09082019
Manufacturing deviations  : (Not Specified)
Manufacturing assembly number : 82-0926-03
Administrative state      : up
Operational state        : up
Temperature               : 60C
Temperature threshold     : 75C
Software boot (rom) version : X-0.0.I6157 on Thu Jan 16 18:06:36 PST
                          2020 by builder
Software version          : TiM05-I-21.2.B1-6 iom/hops64 Nokia 7750 SR
                          Copyright (c) 2000-2021 Nokia.
                          All rights reserved. All use subject to
                          applicable license agreements.
                          Built on Fri Feb 5 18:15:30 PST 2021 by
                          builder in /builds/c/212B/B1-6/panos/main/
                          sros
Time of last boot        : 2021/02/09 07:35:30
Current alarm state      : alarm cleared
Base MAC address         : 14:7b:ac:b4:b0:e1
Firmware revision status : acceptable
Last bootup reason       : clear card
Memory capacity          : 16,384 MB
=====
*A:Dut-A#
    
```

**Output Example: show card <slot-number> detail (showing XCM-20 Card)**

```

A:bkvm20# show card 2 detail
=====
Card 2
=====
Slot      Provisioned Type          Admin Operational  Comments
          Equipped Type (if different)  State State
-----
2         xcm2-x20
          (not equipped)                up    provisioned
    
```

```
IOM Card Specific Data
  Clock source          : none
  Fail On Error        : Disabled
  Available MDA slots   : 2
  Installed MDAs        : 0
FP 1 Specific Data
  WRED Admin State     : Out Of Service
  WRED buffer-allocation max : 2500
  WRED buffer-allocation min : 2500
  WRED reserved-cbs max   : 2500
  WRED reserved-cbs min   : 2500
  WRED Slope Policy     : default
  hi-bw-mc-srcEgress Alarm : disabled
  hi-bw-mc-srcEgress Group : 0
  mc-path-mgmt Admin State : Out Of Service
  Ingress Bandwidth Policy : default
  FP Resource Policy    : default
  Stable Pool Sizing    : False
  Initial Extract Priority Mode : uniform
  Generation            : FP4
  Network ingress queue policy : default
FP 2 Specific Data
  WRED Admin State     : Out Of Service
  WRED buffer-allocation max : 2500
  WRED buffer-allocation min : 2500
  WRED reserved-cbs max   : 2500
  WRED reserved-cbs min   : 2500
  WRED Slope Policy     : default
  hi-bw-mc-srcEgress Alarm : disabled
  hi-bw-mc-srcEgress Group : 0
  mc-path-mgmt Admin State : Out Of Service
  Ingress Bandwidth Policy : default
  FP Resource Policy    : default
  Stable Pool Sizing    : False
  Initial Extract Priority Mode : uniform
  Generation            : FP4
  Network ingress queue policy : default
FP 3 Specific Data
  WRED Admin State     : Out Of Service
  WRED buffer-allocation max : 2500
  WRED buffer-allocation min : 2500
  WRED reserved-cbs max   : 2500
  WRED reserved-cbs min   : 2500
  WRED Slope Policy     : default
  hi-bw-mc-srcEgress Alarm : disabled
  hi-bw-mc-srcEgress Group : 0
  mc-path-mgmt Admin State : Out Of Service
  Ingress Bandwidth Policy : default
  FP Resource Policy    : default
  Stable Pool Sizing    : False
  Initial Extract Priority Mode : uniform
  Generation            : FP4
  Network ingress queue policy : default
Hardware Data
  Platform type        : N/A
  Part number          :
  CLEI code            :
  Serial number        :
  Manufacture date     :
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number :
  Administrative state : up
  Operational state    : provisioned
  Software boot (rom) version : (Not Specified)
```

```

Software version      : (Not Specified)
Time of last boot    : N/A
Current alarm state   : alarm cleared
Base MAC address     :
Last bootup reason   :
Memory capacity      : 0 MB
Hardware Resources (Power-Zone 1)
Voltage
  Minimum            : 0.00 Volts (N/A)
  Current            : 0.00 Volts
  Peak               : 0.00 Volts (N/A)
Wattage
  Minimum            : 0.00 Watts (N/A)
  Current            : 0.00 Watts
  Peak               : 0.00 Watts (N/A)
  Max Required       : 282.00 Watts
Amperage
  Minimum            : 0.00 Amps (N/A)
  Current            : 0.00 Amps
  Peak               : 0.00 Amps (N/A)
=====
A:bkvm20#
    
```

**Output Fields: show card <slot-number> detail (for an IOM or XCM Card)**

Table 64: [Output Fields: show card <slot-number> detail \(for an IOM or XCM Card\)](#) describes the output fields for the **show card detail** command.

Table 64: *Output Fields: show card <slot-number> detail (for an IOM or XCM Card)*

Label	Description
Clock source	Source of clock for the IOM. Currently this parameter always displays "none".
Available MDA slots	The number of MDA slots available on the IOM.
Installed MDAs	The number of MDAs installed on the IOM.
FP Resource Policy	The FP resource policy for the specified FP.
Initial Extract Priority Mode	The scheme used to select the initial drop priority of extracted control plane traffic. uniform — Initializes the drop priority of all extracted control traffic as high priority. l3-classify — Initializes the drop priority of all Layer 3 extracted control traffic (for example, BGP or OSPF) based on the QoS classification of the packets. See "Classification-Based Priority for Extracted Protocol Traffic" in the <i>7450 ESS, 7750 SR, 7950 XRS, and VSR System Management Guide</i> for more details.
Part number	The IOM part number.
CLEI code	The Common Language Location Identifier (CLLI) code string for the router.
Serial number	The serial number. Not user-modifiable.
Manufacture date	The chassis manufacture date. Not user-modifiable.
Manufacturing string	Factory-inputted manufacturing text string. Not user-modifiable.

Label	Description
Manufacturing deviations	Displays a record of changes by manufacturing to the hardware or software that is outside the normal revision control process.
Administrative state	Up — The card is administratively up. Down — The card is administratively down.
Operational state	Up — The card is operationally up. Down — The card is operationally down.
Temperature	Internal chassis temperature.
Temperature threshold	The value above which the internal temperature must rise in order to indicate that the temperature is critical.
Software boot version	The version of the boot image.
Software version	The software version number.
Time of last boot	The date and time the most recent boot occurred.
Current alarm state	Displays the alarm conditions for the specific board.
Base MAC address	Displays the base MAC address of the hardware component.
Memory capacity	Displays the memory capacity of the card.
Generation	Displays the FP generation of the assembly. N/A is displayed if there is no XMA installed in the card slot.
Comments	Active — Indicates if the CPM is the active state. Standby — Indicates if the CPM is the standby state. No SFM — Indicates no SFM is online that is usable by this card. Pwr Save — Indicates if the card is in power save mode. Lo Power — Indicates if the card is in low power mode. It is prevented from booting by power management. SFM Test — Indicates card is being held in booting because a B2B standalone SFM inter-connect test is in progress. No MDA — Indicates the card is waiting for MDAs. MDAs are either missing or failed.
Network ingress queue policy	Displays the name of the network ingress queue policy applied to the FP.

**Output Example: show card <slot-number> detail (showing CPM5 Cards)**

```
B:Dut-D# show card A detail
=====
Card A
=====
Slot      Provisioned Type                               Admin Operational  Comments
```

```

-----
                Equipped Type (if different)                State State
-----
A                cpm5                                     up    up/active
BOF last modified                : N/A
Config file version              : FRI APR 12 01:08:10 2019 UTC
Config file last modified       : N/A
Config file last saved         : 2019/04/16 21:08:31
M/S clocking ref state         : primary
Flash - cf1:
  Administrative State          : up
  Operational state            : up
  Serial number                 : 20101124004146824682
  Firmware revision            : 20091110
  Model number                 : SMART CF
  Size                         : 3,907 MB
  Free space                   : 798,240 KB
  Percent Used                 : 80 %
Flash - cf2:
  Administrative State          : up
  Operational state            : up
  Serial number                 : 20101124004180EB80EB
  Firmware revision            : 20091110
  Model number                 : SMART CF
  Size                         : 3,907 MB
  Free space                   : 1,562 MB
  Percent Used                 : 59 %
Flash - cf3:
  Administrative State          : up
  Operational state            : up
  Serial number                 : 000060089160A700003F
  Firmware revision            : 110301a
  Model number                 : SFCF32GBH1B04T0-I-NC-543-ALU
  Size                         : 31,248 MB
  Free space                   : 27,771 MB
  Percent Used                 : 11 %
Hardware Data
Platform type                   : 7750
Part number                    : 3HE08423AARC01
CLEI code                     : IPUCBGZ1AA
Serial number                  : NS155160462
Manufacture date               : 12222015
Manufacturing deviations      : (Not Specified)
Manufacturing assembly number : 82-0553-05
Administrative state          : up
Operational state            : up
Temperature                   : 51C
Temperature threshold         : 75C
Software boot (rom) version   : X-13.0.R4 on Wed Jul 29 15:56:20 PDT 2015
                               by builder
Software version               : TiM0S-C-16.0.R6 cpm/hops64 Nokia 7750 SR
                               Copyright (c) 2000-2019 Nokia.
                               All rights reserved. All use subject to
                               applicable license agreements.
                               Built on Wed Feb 27 14:42:05 PST 2019 by
                               builder in /builds/c/160B/R6/panos/main
Time of last boot              : 2019/04/15 09:31:29
Current alarm state           : alarm cleared
Base MAC address              : e4:81:84:81:ca:06
Firmware revision status     : acceptable
Memory capacity               : 16,384 MB
System timing oscillator type : OCX0
Secure boot status           : enabled
UEFI variables status        : ok
=====
    
```

```
A:MLS2-SR164# show card "b" detail
=====
Card B
=====
Slot      Provisioned Type      Admin Operational   Comments
         Equipped Type (if different)  State State
-----
B         cpm5                  up    up/standby
BOF last modified      : N/A
Config file version    :
Config file last modified : N/A
Config file last saved : N/A
M/S clocking ref state : secondary
Flash - cf1:
  Administrative State : up
  Operational state    : not equipped
Flash - cf2:
  Administrative State : up
  Operational state    : not equipped
Flash - cf3:
  Administrative State : up
  Operational state    : up
  Serial number        : 000060078551A1000397
  Firmware revision    : 110301a
  Model number         : SFCF4096H1B02T0-I-D1-543-ALU
  Size                 : 3,904 MB
  Free space           : 1,135 MB
  Percent Used         : 70 %
Hardware Data
  Platform type        : 7750
  Part number          : 3HE08423AARC01
  CLEI code            : IPUCBGZ1AA
  Serial number        : NS160164783
  Manufacture date     : 01172016
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 82-0553-05
  Administrative state : up
  Operational state    : up
  Temperature          : 50C
  Temperature threshold : 75C
  Software boot (rom) version : X-13.0.R4 on Wed Jul 29 15:56:20 PDT 2015
  by builder
  Software version     : TiMOS-C-16.0.R6 cpm/hops64 Nokia 7750 SR
  Copyright (c) 2000-2019 Nokia.
  All rights reserved. All use subject to
  applicable license agreements.
  Built on Wed Feb 27 14:42:05 PST 2019 by
  builder in /builds/c/160B/R6/panos/main
  Time of last boot    : 2019/04/15 09:32:04
  Current alarm state  : alarm cleared
  Base MAC address     : e4:81:84:81:db:7c
  Firmware revision status : acceptable
  Memory capacity      : 16,384 MB
  System timing oscillator type : OCX0
  Secure boot status   : enabled
  UEFI variables status : ok
=====
```

**Output Example: show card <slot-number> detail (showing CPM-x20 Cards)**

```
*A:bksim3107# show card A detail
=====
Card A
```

```
=====
Slot Provisioned Type Admin Operational Comments
Equipped Type (if different) State State
-----
A cpm-x20 up up/active

BOF last modified : 2013/05/15 12:33:22
Config file version : FRI MAR 08 13:24:58 2013 UTC
Config file last modified : 2013/05/15 12:34:22
Config file last saved : 2013/05/15 12:36:22
M/S clocking ref state : primary

Flash - cf1:
Administrative State : up
Operational state : up
Serial number : serial-1
Firmware revision : v1.0
Model number : PC HD 1
Size : 1,950 MB
Free space : 1,950 MB

Flash - cf2:
Administrative State : up
Operational state : up
Serial number : serial-2
Firmware revision : v1.0
Model number : PC HD 2
Size : 0 Bytes
Free space : 0 Bytes

Flash - cf3:
Administrative State : up
Operational state : up
Serial number : serial-3
Firmware revision : v1.0
Model number : PC HD 3
Size : 18,432 Bytes
Free space : 6,144 Bytes
Hardware Data
Platform type : 7950
Part number : Sim Part#
CLEI code : Sim CLEI
Serial number : card-11
Manufacture date : 01012003
Manufacturing deviations : Sim MfgDeviation card-11
Manufacturing assembly number : 01-2345-67
Administrative state : up
Operational state : up
Temperature : -1C
Temperature threshold : 75C
Software boot (rom) version : simulated
Software version : TiMOS-C-11.0.R2 cpm/i386 Nokia 7950 XRS*
Time of last boot : 2013/05/13 08:10:33
Current alarm state : alarm cleared
Base MAC address : ac:9f:0b:00:00:01
Memory capacity : 3,072 MB

Inter Chassis CPM Interconnect
CPM Interconnect Port 1
Oper State : up
SFF Status : operational

CPM Interconnect Port 2
...
```

```

* indicates that the corresponding row element may have been truncated.
=====
*A:Dut-A# show card D detail
=====
Card D
=====
Slot   Provisioned Type           Admin Operational  Comments
       Equipped Type (if different) State State
-----
D      cpm-x20                    up    up/ext-stby

BOF last modified           : N/A
Config file version         :
Config file last modified   : N/A
Config file last saved      : N/A
M/S clocking ref state     : secondary

Flash - cf1:
  Administrative State      : up
  Operational state        : up
  Serial number             : WE11K6300191
  Firmware revision         : 2.1ME
  Model number              : WDC SSD-D0128S-7117
  Size                      : 122,089 MB
  Free space                : 122,089 MB

Flash - cf2:
  Administrative State      : up
  Operational state        : not equipped

Flash - cf3:
  Administrative State      : up
  Operational state        : up
  Serial number             : SPG2012061404165
  Firmware revision         : 20101222
  Model number              : SMART CF
  Size                      : 3,907 MB
  Free space                : 3,802 MB

Hardware Data
  Platform type             : 7950
  Part number               : 3HE07116AARB01
  CLEI code                 : IPUCA9T1AA
  Serial number             : NS13426D067
  Manufacture date          : 03162014
  Manufacturing deviations   : (Not Specified)
  Manufacturing assembly number : 82-0488-05
  Administrative state      : up
  Operational state        : up
  Temperature               : 39C
  Temperature threshold     : 75C
  Software boot (rom) version : X-12.0.B1-120 on Wed Jul 16 18:55:26 PDT
                             2014 by builder
  Software version          : TiM05-C-12.0.B1-120 cpm/hops64 Nokia_7950 XRS
                             7950 Copyright (c) 2000-2016 Nokia
                             All rights reserved. All use subject to
                             applicable license agreements.
                             Built on Wed Jul 16 19:26:12 PDT 2014 by
                             builder in /rel12.0/b1/B1-120/panos/main

  Time of last boot         : 2014/07/17 13:41:28
  Current alarm state      : alarm cleared
    
```



```

Base MAC address      : 00:d0:f6:f3:3c:9e
Memory capacity      : 8,192 MB

Hardware Resources (Power-Zone 2)
Voltage
  Minimum            : 53.10 Volts (07/17/2014 12:40:28)
  Current            : 53.16 Volts
  Peak               : 54.15 Volts (07/17/2014 12:18:27)
Wattage
  Minimum            : 151.10 Watts (07/17/2014 13:31:23)
  Current            : 202.61 Watts
  Peak               : 208.79 Watts (07/17/2014 13:00:07)
  Max Required       : 204.00 Watts
Amperage
  Minimum            : 3.69 Amps (07/17/2014 12:18:27)
  Current            : 3.82 Amps
  Peak               : 3.94 Amps (07/17/2014 13:07:25)

Inter Chassis CPM Interconnect
CPM Interconnect Port 1
  Oper State         : up
  SFF Status         : operational
CPM Interconnect Port 2
  Oper State         : up
  SFF Status         : operational
=====
    
```

**Output Fields: show card <slot-number> detail (for a CPM)**

Table 65: Output Fields: show card <slot-number> detail (for a CPM) describes the output fields for the show card detail command for a CPM card.

Table 65: Output Fields: show card <slot-number> detail (for a CPM)

Label	Description
Slot	The slot of the card in the chassis.
Card Provisioned	The CPM type that is configured for the slot. Note: CPMs C and D will not show up in the summary unless the Chassis Topology is Extended (XRS-40).
Card Equipped	The CPM type that is actually populated in the slot. Note: CPMs C and D will not show up in the summary unless the Chassis Topology is Extended (XRS-40).
Admin State	Up — The CPM is administratively up. Down — The CPM is administratively down.
Operational State	Up — The CPM is operationally up. Down — The CPM is operationally down.
Inter chassis cpm interconnect	Up — The CPM is operationally up. Down — The CPM is operationally down.
BOF last modified	The date and time of the most recent BOF modification.
Config file version	The configuration file version.
Config file last modified	The date and time of the most recent config file modification.

Label	Description
Config file last modified	The date and time of the most recent config file modification.
Config file last saved	The date and time of the most recent config file save.
CPM card status	active — The card is acting as the primary (active) CPM in a redundant system. standby — The card is acting as the standby (secondary) CPM in a redundant system.
Administrative state	Up — The CPM is administratively up. Down — The CPM is administratively down.
Operational state	Up — The CPM is operationally up. Down — The CPM is operationally down.
Serial number	The compact flash part number. Not user modifiable.
Firmware revision	The firmware version. Not user modifiable.
Model number	The compact flash model number. Not user modifiable.
Size	The amount of space available on the compact flash card.
Free space	The amount of space remaining on the compact flash card.
Part number	The CPM part number.
CLEI code	The code used to identify the router.
Serial number	The CPM part number. Not user modifiable.
Manufacture date	The chassis manufacture date. Not user modifiable.
Manufacturing string	Factory-set manufacturing text string. Not user modifiable.
Administrative state	Up — The card is administratively up. Down — The card is administratively down.
Operational state	Up — The card is operationally up. Down — The card is operationally down.
Time of last boot	The date and time the most recent boot occurred.
Current alarm state	Displays the alarm conditions for the specific board.
Status	Displays the current status.
Temperature	Internal chassis temperature.
Temperature threshold	The value above which the internal temperature must rise in order to indicate that the temperature is critical.
Software boot version	The version of the boot image.

Label	Description
Memory capacity	The total amount of memory.
Secure boot status	Status of the Secure Boot for this CPM. enabled — Secure Boot is enabled disabled — Secure Boot is disabled
UEFI variable status	Status of the Secure Boot UEFI variables for this CPM. ok — no update required update required — update is required
Comments	Active — Indicates if the CPM is the active state. Standby — Indicates if the CPM is the standby state. No SFM — Indicates no SFM is online that is usable by this card. Pwr Save — Indicates if the card is in power save mode. Lo Power — Indicates if the card is in low power mode. It is prevented from booting by power management. SFM Test — Indicates card is being held in booting because a B2B standalone SFM inter-connect test is in progress. No MDA — Indicates the card is waiting for MDAs. MDAs are either missing or failed.

**Output Example: show card <slot-number> detail (showing IOM iwth license detail)**

```
*A:bkvm18# show card 1 detail
=====
Card 1
=====
Slot      Provisioned Type          Admin Operational  Comments
          Equipped Type (if different)  State State
-----
1         iom5-e:he1200g+          up    up
IOM Card Licensing Data
  Licensed Level           : he1200g+
  Description               : 1.2T /w Agg to 2.4T, High Edge Routing
  Licensed Bandwidth Used  : 900 Gbps
IOM Card Specific Data
  Clock source              : none
  Fail On Error             : Disabled
  Reset On Recoverable Error : Disabled
  Available MDA slots       : 2
  Installed MDAs            : 0
FP 1 Specific Data
  WRED Admin State          : Out Of Service
  WRED buffer-allocation max : 2500
  WRED buffer-allocation min : 2500
  WRED reserved-cbs max     : 2500
  WRED reserved-cbs min     : 2500
  WRED Slope Policy         : default
  hi-bw-mc-srcEgress Alarm  : disabled
  hi-bw-mc-srcEgress Group  : 0
  mc-path-mgmt Admin State  : Out Of Service
  Ingress Bandwidth Policy  : default
```

```

FP Resource Policy      : default
Stable Pool Sizing     : False
Ingress Buffer Allocation : 50.00
Initial Extract Priority Mode : uniform
HS Pool Policy         : None
HS Fixed High Threshold Delta : default
Generation             : FP4
Network ingress queue policy : default
Hardware Data
Platform type          : N/A
Part number           :
CLEI code             :
Serial number         :
Manufacture date      :
Manufacturing deviations : (Not Specified)
Manufacturing assembly number :
Administrative state   : up
Operational state     : provisioned
Software boot (rom) version : (Not Specified)
Software version      : (Not Specified)
Time of last boot     : N/A
Current alarm state   : alarm cleared
Base MAC address      :
Last bootup reason    :
Memory capacity       : 0 MB
  
```

**Output Fields: show card <slot-number> detail (showing IOM with license level)**

Table 66: Output Fields: show card <slot-number> detail (showing IOM with license level) describes the output fields for the **show card detail** command with IOM licensing information.

Table 66: Output Fields: show card <slot-number> detail (showing IOM with license level)

Label	Description
Slot	The slot of the card in the chassis.
Provisioned Type	The IOM type and level that is configured for the slot.
Equipped Type (if different)	The IOM type and level that is actually populated in the slot if it is different than the Provisioned Type.
Admin State	Up — The IOM is administratively up. Down — The IOM is administratively down.
Operational State	Up — The IOM is operationally up. Down — The IOM is operationally down.
Licensed Level	License level of the card.
Description	Description of the license.
Licensed Bandwidth Used	The total connector bandwidth configured on the assembly.
Comments	Active — Indicates if the CPM is the active state. Standby — Indicates if the CPM is the standby state. No SFM — Indicates no SFM is online that is usable by this card.

Label	Description
	Pwr Save — Indicates if the card is in power save mode. Lo Power — Indicates if the card is in low power mode. It is prevented from booting by power management. SFM Test — Indicates card is being held in booting because a B2B standalone SFM inter-connect test is in progress. No MDA — Indicates the card is waiting for MDAs. MDAs are either missing or failed.

**Output Example: show card <slot-number> fp fwd-engine drop-reason statistics**

```
*A:cses-V93# show card 1 fp 1 fwd-engine drop-reason statistics
=====
Card 1 FP 1 Egress Forwarding Engine Drop Reason Statistics
=====
Egress Encapsulation Exceeded          0
MTU Exceeded                            0
Frame too big for port                  4
=====
```

**Output Fields: show card<slot-number> fp fwd-engine drop-reason statistics**

Table 67: Output Fields: show card slot-number fp fwd-engine drop-reason describes the output fields for the show card fp fwd-engine drop-reason command.

Table 67: Output Fields: show card slot-number fp fwd-engine drop-reason

Label	Description
Card	The card in the chassis.
FP	The egress forwarding plane hardware component.
Egress Encapsulation Exceeded	Addition of egress encapsulation headers would have exceeded the maximum frame size.
MTU Exceeded	Protocol supports packet fragmentation but fragmentation was blocked (for example, packet is IPv6 or packet is IPv4 and DF set to one).
Frame too big for port	Final check before transmitting has detected frame exceeded the port MTU.



**Note:**

A single frame can only result in one drop reason statistic being incremented.

**Output Example: show card <slot-number> fp <fp-number> ingress per-egress-fp-stats**

```
# show card 4 fp 5 ingress per-egress-fp-stats
=====
Card 4 FP 5 TAP 1 (Ingress Per-Egress FP Statistics)
=====
To FP/TAP      Priority          Forwarded Packets  Forwarded Octets
-----
1 - 2/1        Expedite          0                  0
                Best-Effort       114919092          114919092000
4 - 5/1        Expedite          792                788688
```

```

A - 1/1      Best-Effort      0      0
             Expedite      5782    2154196
             Best-Effort      0      0
=====
=====
Card 4 FP 5 TAP 2 (Ingress Per-Egress FP Statistics)
=====
To FP/TAP   Priority          Forwarded Packets   Forwarded Octets
-----
1 - 2/1     Expedite          0                   0
             Best-Effort      114919195          114919195000
=====
    
```

**Output Example: show card <slot-number> fp <fp-number> ingress per-egress-fp-stats tap <tap-number>**

```

*A:Dut-A# show card 4 fp 5 ingress per-egress-fp-stats tap 1
=====
Card 4 FP 5 TAP 1 (Ingress Per-Egress FP Statistics)
=====
To FP/TAP   Priority          Forwarded Packets   Forwarded Octets
-----
1 - 2/1     Expedite          0                   0
             Best-Effort      115935212          115935212000
4 - 5/1     Expedite          792                 788688
             Best-Effort      0                   0
A - 1/1     Expedite          5816                2169292
             Best-Effort      0                   0
=====
-----
*A:Dut-A# show card 4 fp 5 ingress per-egress-fp-stats tap 2
=====
Card 4 FP 5 TAP 2 (Ingress Per-Egress FP Statistics)
=====
To FP/TAP   Priority          Forwarded Packets   Forwarded Octets
-----
1 - 2/1     Expedite          0                   0
             Best-Effort      115935316          115935316000
=====
    
```

**Output Example: show card <slot-number> fp <fp-number> egress per-ingress-fp-stats**

```

# show card 1 fp 1 egress per-ingress-fp-stats
=====
Card 1 FP 1 TAP 1 Egress Per-Ingress FP Statistics
=====
To FP/TAP   Priority          Received Packets    Received Octets
-----
1 1/1      Expedite          172437              2207203840
             Best-Effort      12345678            3160493568
1 2/1      Expedite          103446              1324118016
             Best-Effort      987654              252839424
1 3/1      Expedite          6899108             883085824
             Best-Effort      11223344            2873176064
1 4/1      Expedite          0                   0
             Best-Effort      0                   0
2 1/1      Expedite          0                   0
             Best-Effort      0                   0
2 2/2      Expedite          0                   0
             Best-Effort      0                   0
-----
    
```

**Output Fields: show card <slot-number> fp <fp-number> ingress per-egress-fp-stats**

Table 68: Output Fields: egress and ingress card statistics per ingress or egress FP describes the output fields for the egress and ingress card statistics per ingress or egress FP.

Table 68: Output Fields: egress and ingress card statistics per ingress or egress FP

Label	Description
To FP/TAP	Displays the To forwarding plane TAP information.
Priority	Displays the priority (Best-Effort, Expedite, or Auto-Expedite).
Forwarded Packets	Displays the unicast packet statistics sent from the specified FP to the destination FP.
Forwarded Octets	Displays the unicast octet statistics sent from the specified FP to the destination FP.

## card

### Syntax

**card** *slot-number*

**card** *slot-number* **fp** *fp-number* **hs-pool high-water-mark**

**card** *slot-number* **fp** *fp-number* **hs-pool high-water-mark mid-pool** [*value*]

**card** *slot-number* **fp** *fp-number* **hs-pool high-water-mark root-pool** [*value*]

**card** *slot-number* **fp** *fp-number* **hs-pool high-water-mark system**

**card** *slot-number* **fp** *fp-number* **dist-cpu-protection**

**card** *slot-number* **fp** *fp-number* **ingress per-egress-fp-stats**

**card** *slot-number* **fp** *fp-number* **egress per-ingress-fp-stats**

**card** *slot-number* **soft** [**hard-reset-unsupported-mdas**]

**card** *slot-number* **fp** *fp-number* **fwd-engine drop-reason statistics**

**card** *slot-number* **fp** *fp-number* **ingress mode** {**access** | **network**} **queue-group** *group-name* **instance**  
*instance* **statistics**

### Context

[\[Tree\]](#) (clear card)

### Full Context

clear card

### Description

This command re-initializes the card in the specified slot. A **clear card** command (without the soft) is referred to as a *Hard Reset*. A **clear card x soft** command (with the soft) is referred to as a *Soft Reset*.

## Parameters

### **slot-number**

Clears information for the specified card slot.

**Values** 1 to 20, A, B, C, D

### **fp-number**

Displays information for the specified forwarding plane.

**Values** 1 to 8

### **high-water-mark**

Clears the high water marks within the HS pool on the specified card and FP.

### **mid-pool**

Clears the high water marks within the mid pools in the HS pool and on the specified card and FP.

**Values** 1 to 16

### **root-pool**

Clears the high water marks within the root pools in the HS pool and on the specified card and FP.

**Values** 1 to 16

### **system**

Clears the high water marks within the in the HS system pool and on the specified card and FP.

### **dist-cpu-protection**

Clears the distributed CPU protection information.

### **soft**

Issues a soft reset of the I/O module (IOM).

### **hard-reset-unsupported-mdas**

Allows a soft reset operation when some of the MDA's cannot perform a soft reset. A soft reset is performed on MDAs that support a soft reset and a hard reset is performed on MDAs that do not support soft resets.

### **fwd-engine**

Specifies to clear the forwarding engine information.

### **drop-reason**

Specifies to clear the drop reason information.

### **statistics**

Specifies to clear the statistics.

### **ingress**

Specifies to clear the ingress information.

### **egress**

Specifies to clear the egress information.



### **per-egress-fp-stats**

Specifies to clear packet and octet statistics for unicast traffic sent from the specified FP to each destination FP. Only supported on 7750 SR-1 and 7750 SR-s platforms.

### **per-ingress-fp-stats**

Specifies to clear packet and octet statistics for unicast traffic received by the specified FP from each source FP. Only supported on 7750 SR-1 and 7750 SR-s platforms.

### **mode**

Specifies the mode in which the card is to operate.

### **access**

Specifies to clear the access mode information.

### **network**

Specifies to clear the network mode information.

### **group-name**

Specifies the group name, to a maximum of 32 characters.

### **instance**

Specifies the instance of the named queue group to be cleared.

**Values** 1 to 65535

## **Platforms**

All

## **card**

## **Syntax**

```
card slot-number fp fp-number queue-group queue-group-name instance instance-id [{access | network}] [{ingress | egress}] [arbiter {name | root}] [port port-id] [{detail | root-detail | thresholds | priority-info | depth}
```

## **Context**

[\[Tree\]](#) (show>qos>policer-hierarchy card)

## **Full Context**

```
show qos policer-hierarchy card
```

## **Description**

This command displays physical card related information.

## **Parameters**

### ***slot-number***

Displays information about the slot number of the card in the chassis. The maximum slot number is platform dependent.

**Values** 1 to 10

***fp-number***

Displays information about the specified forwarding plane number.

**Values** 1

***queue-group-name***

Displays information about the specified queue group name, up to 32 characters.

***instance-id***

Displays information about the instance of the named queue group.

**Values** 1 to 65535

***name***

Displays information about the name of the QoS arbiter.

***root***

Displays information about the arbiter root.

***port-id***

Displays information about the specified port ID.

***access***

Displays policer-hierarchy statistics applied on an access port.

***network***

Displays policer-hierarchy statistics applied on a network port.

***ingress***

Displays ingress queue group information.

***egress***

Displays egress queue group information.

***detail***

Displays detailed information.

***root-detail***

Displays detailed information about the arbiter root.

***thresholds***

Displays the threshold, parenting, rate, and traffic information related to a policer.

***priority-info***

Displays the threshold information related to the root arbiter.

***depth***

Displays the bucket depth, parenting, rate, and traffic information related to a policer.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## card

### Syntax

```
card [slot-num]
card [slot-num] all
```

### Context

[\[Tree\]](#) (tools>dump>resource-usage card)

### Full Context

```
tools dump resource-usage card
```

### Description

This command displays resource information for cards.

### Parameters

#### *slot-num*

Specifies a card slot.

**Values** 1 to 10

#### **all**

Displays all available information for the card, including resource usage information for all child objects of the card such as FPs and MDAs.

### Platforms

All

## card

### Syntax

```
card slot-number fp fp-number ingress {access | network} queue-group queue-group-name instance
instance-id [absolute | percent-rate] [interval seconds] [repeat repeat] policer policer-id [reference-
rate]
card slot-number fp fp-number ingress [tap tap-number] per-egress-fp-stats [interval seconds] [repeat
repeat] [absolute | rate]
card slot-number fp fp-number [tap tap-number] egress per-ingress-fp-stats [interval seconds] [repeat
repeat] [absolute | rate]
```

### Context

[\[Tree\]](#) (monitor card)

## Full Context

monitor card

## Description

This command monitors statistics in an ingress and egress Forwarding Plane (FP).

## Parameters

### *slot-number*

Monitors information on the specified card slot.

**Values** 1 to 20 (The maximum slot number is platform dependent)

### *fp-number*

Monitors information on the specified FP.

**Values** 1 to 8

### *ingress*

Monitors information on the ingress.

### *egress*

Monitors information on the egress.

### *access*

Displays policer statistics on the FP access.

### *network*

Displays policer statistics on the FP network.

### *queue-group-name*

Specifies the queue group name, up to 32 characters.

### *instance-id*

Specifies the identification of a specific instance of the queue group.

**Values** 1 to 65535

### *absolute*

Displays the raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *percent-rate*

Displays the rate-per-second for each statistic based on the reference rate of 10G.

### *seconds*

Specifies the interval for each display in seconds.

**Values** 11 to 60

**Default** 11

### *repeat*

Specifies how many times the command is repeated.

**Values** 1 to 999

**Default** 10

***policer-id***

Must exist within the queue-group template applied to the ingress context of the forwarding plane.

**Values** 1 to 32

***reference-rate***

Displays the rate-per-second for each statistic as a percentage based on the reference rate specified.

**Values** 100M, 1G, 10G, 40G, 100G, 400G

**Default** 10G

***tap-number***

Specifies the source TAP.

**Values** 1 to 2

***per-egress-fp-stats***

Displays packet and octet statistics for unicast traffic sent from the specified FP to each destination FP.

***per-ingress-fp-stats***

Displays packet and octet statistics for unicast traffic received by the specified FP from each source FP.

***rate***

Displays the rate-per-second for each statistic instead of the delta.

**Platforms**

All

**Output**

See the following sections for output examples:

- [Output Example Ingress per-egress-fp-stats](#)
- [Output Example Ingress per-egress-fp-stats rate](#)
- [Output Example Ingress per-egress-fp-stats absolute](#)
- [Output Example Ingress per-egress-fp-stats absolute tap](#)
- [Output Example Ingress per-egress-fp-stats rate tap](#)
- [Output Example Ingress per-egress-fp-stats](#)
- [Output Example Ingress per-ingress-fp-stats tap](#)
- [Output Example Egress per-ingress-fp-stats interval repeat](#)

- [Output Example Egress per-ingress-fp-stats interval repeat rate](#)

**Output Example Ingress per-egress-fp-stats**

```
# monitor card "4" fp 5 ingress per-egress-fp-stats
=====
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                 0
           Best-Effort         42659137         42659137000
4 - 5/1    Expedite             792              788688
           Best-Effort         0                 0
A - 1/1    Expedite            3338             1054788
           Best-Effort         0                 0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                 0
           Best-Effort         42659012         42659012000
-----
At time t = 11 sec (Mode: Delta)
=====
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                 0
           Best-Effort        1375377          1375377000
4 - 5/1    Expedite             0                 0
           Best-Effort         0                 0
A - 1/1    Expedite             46               20832
           Best-Effort         0                 0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                 0
           Best-Effort        1375605          1375605000
```

**Output Example Ingress per-egress-fp-stats rate**

```
# monitor card "4" fp 5 ingress per-egress-fp-stats rate
=====
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                 0
           Best-Effort        45802801         45802801000
4 - 5/1    Expedite             792              788688
           Best-Effort         0                 0
```

```

A - 1/1    Expedite    3444    1102780
           Best-Effort    0        0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority    Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite    0        0
           Best-Effort 45802905 45802905000
=====
At time t = 11 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority    Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite    0        0        0
           Best-Effort 125039    125039364    1000
4 - 5/1    Expedite    0        0        0
           Best-Effort 0        0        0
A - 1/1    Expedite    4        1921    0
           Best-Effort 0        0        0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority    Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite    0        0        0
           Best-Effort 125039    125039273    1000
=====
At time t = 22 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority    Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite    0        0        0
           Best-Effort 124999    124999273    999
4 - 5/1    Expedite    0        0        0
           Best-Effort 0        0        0
A - 1/1    Expedite    4        1867    0
           Best-Effort 0        0        0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority    Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite    0        0        0
           Best-Effort 124999    124999182    999
    
```

**Output Example Ingress per-egress-fp-stats absolute**

```

# monitor card "4" fp 5 ingress per-egress-fp-stats absolute
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority    Forwarded Packets Forwarded Octets
-----
    
```

```

1 - 2/1    Expedite      0          0
          Best-Effort  49729775  49729775000
4 - 5/1    Expedite      792       788688
          Best-Effort  0         0
A - 1/1    Expedite     3585     1163992
          Best-Effort  0         0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite          0              0
          Best-Effort    49729878      49729878000
=====
At time t = 11 sec (Mode: Absolute)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite          0              0
          Best-Effort    51104481      51104481000
4 - 5/1    Expedite          792           788688
          Best-Effort  0              0
A - 1/1    Expedite         3631         1184824
          Best-Effort  0              0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite          0              0
          Best-Effort    51104584      51104584000
=====
At time t = 22 sec (Mode: Absolute)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite          0              0
          Best-Effort    52479477      52479477000
4 - 5/1    Expedite          792           788688
          Best-Effort  0              0
A - 1/1    Expedite         3677         1206224
          Best-Effort  0              0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite          0              0
          Best-Effort    52479581      52479581000
    
```

**Output Example Ingress per-egress-fp-stats absolute tap**

```

# monitor card "4" fp 5 ingress per-egress-fp-stats absolute tap 1
=====
At time t = 0 sec (Base Statistics)
=====
    
```



```

Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite                0                0
           Best-Effort           53893930         53893930000
4 - 5/1    Expedite                792              788688
           Best-Effort           0                0
A - 1/1    Expedite               3726             1227188
           Best-Effort           0                0

=====
At time t = 11 sec (Mode: Absolute)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite                0                0
           Best-Effort           55269466         55269466000
4 - 5/1    Expedite                792              788688
           Best-Effort           0                0
A - 1/1    Expedite               3773             1248320
           Best-Effort           0                0

# monitor card "4" fp 5 ingress per-egress-fp-stats absolute tap 2
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite                0                0
           Best-Effort           56153283         56153283000

=====
At time t = 11 sec (Mode: Absolute)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite                0                0
           Best-Effort           57528327         57528327000
    
```

**Output Example Ingress per-egress-fp-stats rate tap**

```

# monitor card "4" fp 5 ingress per-egress-fp-stats rate tap 1
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite                0                0
           Best-Effort           59487961         59487961000
4 - 5/1    Expedite                792              788688
           Best-Effort           0                0
    
```

```

A - 1/1    Expedite      3915      1312280
           Best-Effort    0          0
=====
At time t = 11 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority      Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite      0          0                0
           Best-Effort  125035     125034818       1000
4 - 5/1    Expedite      0          0                0
           Best-Effort  0          0                0
A - 1/1    Expedite      4          1955             0
           Best-Effort  0          0                0
=====
At time t = 22 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority      Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite      0          0                0
           Best-Effort  124995     124994909       999
4 - 5/1    Expedite      0          0                0
           Best-Effort  0          0                0
A - 1/1    Expedite      4          1921             0
           Best-Effort  0          0                0
=====
At time t = 33 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority      Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite      0          0                0
           Best-Effort  124994     124993818       999
4 - 5/1    Expedite      0          0                0
           Best-Effort  0          0                0
A - 1/1    Expedite      4          1867             0
           Best-Effort  0          0                0
=====
At time t = 44 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority      Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite      0          0                0
           Best-Effort  125002     125001545       1000
4 - 5/1    Expedite      0          0                0
           Best-Effort  0          0                0
A - 1/1    Expedite      4          1886             0
           Best-Effort  0          0                0
=====
At time t = 55 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
    
```

```

=====
To FP/TAP  Priority          Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite              0                 0                 0
           Best-Effort          124998            124998182         999
4 - 5/1    Expedite              0                 0                 0
           Best-Effort          0                 0                 0
A - 1/1    Expedite              4                 1894              0
           Best-Effort          0                 0                 0
=====

At time t = 66 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite              0                 0                 0
           Best-Effort          125001            125000636         1000
4 - 5/1    Expedite              0                 0                 0
           Best-Effort          0                 0                 0
A - 1/1    Expedite              4                 1955              0
           Best-Effort          0                 0                 0
=====

At time t = 77 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite              0                 0                 0
           Best-Effort          124998            124998273         999
4 - 5/1    Expedite              0                 0                 0
           Best-Effort          0                 0                 0
A - 1/1    Expedite              4                 1921              0
           Best-Effort          0                 0                 0
=====

At time t = 88 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite              0                 0                 0
           Best-Effort          125076            125075545         1000
4 - 5/1    Expedite              0                 0                 0
           Best-Effort          0                 0                 0
A - 1/1    Expedite              4                 1867              0
           Best-Effort          0                 0                 0
=====

At time t = 99 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite              0                 0                 0
           Best-Effort          125039            125039091         1000
4 - 5/1    Expedite              0                 0                 0
           Best-Effort          0                 0                 0
A - 1/1    Expedite              4                 1886              0
           Best-Effort          0                 0                 0
=====
    
```

```

=====
At time t = 110 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite             0                  0                  0
           Best-Effort         124999             124998636         999
4 - 5/1    Expedite             0                  0                  0
           Best-Effort         0                  0                  0
A - 1/1    Expedite             4                  1894               0
           Best-Effort         0                  0                  0
=====

# monitor card "4" fp 5 ingress per-egress-fp-stats rate tap 2
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                  0
           Best-Effort         84288530           84288530000
=====

At time t = 11 sec (Mode: Rate)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets  Mbps
-----
1 - 2/1    Expedite             0                  0                  0
           Best-Effort         124982             124981818         999
    
```

### Output Example Ingress per-egress-fp-stats

```

# monitor card "4" fp 5 ingress per-egress-fp-stats
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                  0
           Best-Effort         90150683           90150683000
4 - 5/1    Expedite             792                788688
           Best-Effort         0                  0
A - 1/1    Expedite             4949               1778224
           Best-Effort         0                  0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite             0                  0
    
```

```

Best-Effort          90150787          90150787000
=====
At time t = 11 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite              0                0
           Best-Effort          1375025          1375025000
4 - 5/1    Expedite              0                0
           Best-Effort          0                0
A - 1/1    Expedite              47               21132
           Best-Effort          0                0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite              0                0
           Best-Effort          1375024          1375024000
-----
At time t = 22 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite              0                0
           Best-Effort          1375003          1375003000
4 - 5/1    Expedite              0                0
           Best-Effort          0                0
A - 1/1    Expedite              45               20532
           Best-Effort          0                0
-----
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite              0                0
           Best-Effort          1375003          1375003000
    
```

**Output Example Ingress per-ingress-fp-stats tap**

```

# monitor card "4" fp 5 ingress per-egress-fp-stats tap 1
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite              0                0
           Best-Effort          93787778         93787778000
4 - 5/1    Expedite              792              788688
           Best-Effort          0                0
A - 1/1    Expedite              5071             1833136
           Best-Effort          0                0
=====
    
```

```

At time t = 11 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 1 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite           0                 0
           Best-Effort       1375605           1375605000
4 - 5/1    Expedite           0                 0
           Best-Effort       0                 0
A - 1/1    Expedite           47                20748
           Best-Effort       0                 0

# monitor card "4" fp 5 ingress per-egress-fp-stats tap 2
=====
At time t = 0 sec (Base Statistics)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite           0                 0
           Best-Effort       96041192          96041192000

=====
At time t = 11 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite           0                 0
           Best-Effort       1374706           1374706000

=====
At time t = 22 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite           0                 0
           Best-Effort       1374960           1374960000

=====
At time t = 33 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite           0                 0
           Best-Effort       1374980           1374980000

=====
At time t = 44 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets Forwarded Octets
-----
1 - 2/1    Expedite           0                 0
           Best-Effort       1375009           1375009000
    
```

```

=====
At time t = 55 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets  Forwarded Octets
-----
1 - 2/1    Expedite             0                  0
           Best-Effort         1375010           1375010000
-----

=====
At time t = 66 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets  Forwarded Octets
-----
1 - 2/1    Expedite             0                  0
           Best-Effort         1374987           1374987000
-----

=====
At time t = 77 sec (Mode: Delta)
=====
Card: 4 FP: 5 Tap: 2 (Ingress Per-Egress FP Statistics)
-----
To FP/TAP  Priority          Forwarded Packets  Forwarded Octets
-----
1 - 2/1    Expedite             0                  0
           Best-Effort         1375005           1375005000
-----
    
```

**Output Example Egress per-ingress-fp-stats interval repeat**

```

*A:PE1# monitor card 1 fp 1 egress per-ingress-fp-stats interval 11 repeat 1
=====
Card 1 FP 1 TAP 1 Egress Per-Ingress FP Statistics
=====
To FP/TAP  Priority          Received Packets   Received Octets
-----
1 1/1      Expedite          172437             2207203840
           Best-Effort       12345678           3160493568
1 2/1      Expedite          103446             1324118016
           Best-Effort       987654             252839424
1 3/1      Expedite          6899108            883085824
           Best-Effort       11223344           2873176064
1 4/1      Expedite          0                  0
           Best-Effort       0                  0
2 1/1      Expedite          0                  0
           Best-Effort       0                  0
2 2/1      Expedite          0                  0
           Best-Effort       0                  0
-----

-----
At time t = 11 sec (Mode: Delta)
-----
1 1/1      Expedite          272437             2232803840
           Best-Effort       12545678           3211693568
1 2/1      Expedite          403446             1400918016
           Best-Effort       1387654            355239424
1 3/1      Expedite          7399108            1011085824
           Best-Effort       11823344           3026776064
1 4/1      Expedite          0                  0
           Best-Effort       0                  0
    
```

```

2 1/1    Expedite    0          0
         Best-Effort 0          0
2 2/1    Expedite    0          0
         Best-Effort 0          0
=====
    
```

**Output Example Egress per-ingress-fp-stats interval repeat rate**

```

# monitor card 1 fp 1 egress per-ingress-fp-stats interval 11 repeat 1 rate
=====
Card 1 FP 1 TAP 1 Egress Per-Ingress FP Statistics
=====
-----
At time t = 0 sec (Base Statistics)
-----
-----
To FP/TAP  Priority      Received Packets      Received Octets
-----
1 1/1      Expedite      172437                2207203840
          Best-Effort   12345678              3160493568
1 2/1      Expedite      103446                1324118016
          Best-Effort   987654                252839424
1 3/1      Expedite      6899108               883085824
          Best-Effort   11223344              2873176064
1 4/1      Expedite      0                    0
          Best-Effort   0                    0
2 1/1      Expedite      0                    0
          Best-Effort   0                    0
2 2/1      Expedite      0                    0
          Best-Effort   0                    0
-----
-----
At time t = 11 sec (Mode: Rate)
-----
-----
To FP/TAP  Priority      Received Packets      Received Octets      Mbps
-----
1 1/1      Expedite      100000                25600000              19
          Best-Effort   200000                51200000              37
1 2/1      Expedite      300000                76800000              56
          Best-Effort   400000                102400000             74
1 3/1      Expedite      500000                128000000             93
          Best-Effort   600000                153600000            112
1 4/1      Expedite      0                    0
          Best-Effort   0                    0
2 1/1      Expedite      0                    0
          Best-Effort   0                    0
2 2/1      Expedite      0                    0
          Best-Effort   0                    0
=====
    
```

**card**

**Syntax**

```

card slot-number fp fp-number queue-group queue-group-name instance instance-id [ingress] [access
| networks] [interval seconds] [repeat repeat] [absolute | percent-rate [reference-rate]] [arbiter root
| name]
    
```



## Context

[\[Tree\]](#) (monitor>qos>arbiter-stats card)

## Full Context

monitor qos arbiter-stats card

## Description

This command monitors arbiter statistics in an ingress FP queue group.

## Parameters

### *slot-number*

Specifies the slot number associated with the queue group, expressed as an integer.

**Values** 1 to 20

### *fp-number*

Specifies the FP number associated with the queue group, expressed as an integer.

**Values** 1 to 8

### *ingress*

Displays policer statistics applied on the ingress FP.

### *access*

Displays policer statistics on the FP access.

### *network*

Displays policer statistics on the FP network.

### *queue-group-name*

Specifies the name of the queue group up to 32 characters.

### *instance-id*

Specifies the identification of a specific instance of the queue-group.

**Values** 1 to 65535

### *seconds*

Configures the interval for each display in seconds.

**Default** 11 seconds

**Values** 11 to 60

### *repeat*

Configures how many times the command is repeated.

**Default** 10

**Values** 1 to 999

### **absolute**

When the absolute keyword is specified, the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

### **percent-rate**

When the percent-rate keyword is specified, the rate-per-second for each statistic is displayed based on the reference rate of 10G.

### **reference-rate**

When a reference-rate value is specified, the rate-per-second for each statistic is displayed as a percentage based on the reference rate specified.

**Values** 100M, 1G, 10G, 40G, 100G, 400G

### **name**

Specify the name of the policer control policy arbiter.

**Values** An existing arbiter-name in the form of a string up to 32 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, etc.), the entire string must be enclosed within double quotes.

### **root**

Specifies the root arbiter.

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## **card**

## **Syntax**

```
card slot-number fp fp-number ingress [access | network] queue-group queue-group-name [instance instance-id] [arbiter {name | root}]
```

## **Context**

[\[Tree\]](#) (clear>qos>arbiter-stats card)

## **Full Context**

```
clear qos arbiter-stats card
```

## **Description**

This command clears arbiter statistics per card.

## **Parameters**

### ***slot-number***

Specifies the slot number associated with the queue group.

**Values** 1 to 2 (7750 SR-2s)

1 to 5 (7750 SR-7)  
1 to 6 (7750 SR-14s)  
1 to 10 (7450 ESS, 7750 SR-12)  
1 to 14 (VSR)  
1 to 20 (7950 XRS, VSR)

***fp-number***

Specifies the FP number associated with the queue group.

**Values** 1 to 4

***access***

Clears policer statistics on the FP access.

***network***

Clears policer statistics on the FP network.

***queue-group-name***

Specifies the queue group name, up to 32 characters.

***name***

Specifies the arbiter name, up to 32 characters.

***root***

Specifies the arbiter root, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

**card**

**Syntax**

**card** *slot-number* **fp** *fp-number* **ingress** [**access** | **network**] [**queue-group** *queue-group-name*] [**instance** *instance-id*] [**arbiter** *name* | *root*]

**Context**

[\[Tree\]](#) (show>qos>arbiter-stats card)

**Full Context**

show qos arbiter-stats card

**Description**

This command displays the arbiter statistics per card.

## Parameters

### *slot-number*

Displays information for the specified card slot.

**Values** 1 (7750 SR-1, VSR)  
1 to 2 (7750 SR-2s)  
1 to 5 (7750 SR-7)  
1 to 6 (7750 SR-14s)  
1 to 10 (7450 ESS, 7750 SR-12)  
1 to 14 (VSR)  
1 to 20 (7950 XRS, VSR)

### *fp-number*

Specifies the FP number associated with the queue group.

**Values** 1

### *access*

Displays arbiter statistics applied on an access port.

### *network*

Displays arbiter statistics applied on a network port.

### *queue-group-name*

Specifies the queue group name, up to 32 characters.

### *name*

Specifies the arbiter name, up to 32 characters.

### *root*

Specifies the arbiter root, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## card

## Syntax

```
card slot-number fp fp-number queue-group group-name instance instance-id {access | network}  
[detail] [ingress]
```

## Context

[\[Tree\]](#) (show>qos>policer card)

## Full Context

```
show qos policer card
```

## Description

This command displays the policer statistics per card.

## Parameters

### *slot-number*

Displays information for the specified card slot.

**Values** 1 (7750 SR-1, VSR)  
1 to 2 (7750 SR-2s)  
1 to 5 (7750 SR-7)  
1 to 6 (7750 SR-14s)  
1 to 10 (7450 ESS, 7750 SR-12)  
1 to 14 (VSR)  
1 to 20 (7950 XRS, VSR)

### *fp-number*

Specifies the FP number associated with the queue group.

**Values** 1

### *group-name*

Specifies the queue group name, up to 32 characters.

### *access*

Displays policer statistics applied on an access port.

### *network*

Displays policer statistics applied on a network port.

### *detail*

Displays detailed information.

### *ingress*

Displays ingress queue group information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## 6.11 card-status

### card-status

## Syntax

**card-status**

## Context

[\[Tree\]](#) (tools>dump>service>id>fdb card-status)

## Full Context

tools dump service id fdb card-status

## Description

This command displays the following MAC address information for each line card in the system:

- the number of allocated MAC addresses
- the number of pending MAC address allocations
- the number of pending free MAC addresses

## Platforms

All

## Output

### Output Example

```
*A:PE1# tools dump service id 1 fdb card-status
=====
VPLS FDB Card Status at 01/31/2017 08:44:38
=====
Card           Allocated      PendAlloc      PendFree
-----
1              4                0                0
2              4                0                0
5              4                0                0
=====
*A:PE1#
```

## 6.12 category-map

### category-map

## Syntax

```
category-map [category-map]
category-map category-map subscribers
```

## Context

[\[Tree\]](#) (show>subscr-mgmt category-map)

## Full Context

show subscriber-mgmt category-map

## Description

This command displays category map information.

With no parameters specified, a summary view of all configured category maps is displayed.

With the optional *category-map* name parameter specified, the detailed configuration of the specified category map name is displayed.

With the *category-map subscribers* parameters specified, all subscribers that have the specified *category-map* associated are displayed.

## Parameters

### *category-map*

Specifies the category map name for which information is displayed.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management category map information.

### Output Example

```
Node# show subscriber-mgmt category-map "cat-map-1"
=====
Category Map: cat-map-1
=====
Description      : gy - time and volume
Credit Type      : volume           Credit Exh. Thresh.: 80%
Activity Thresh. : 0 kb/s
Gx session level
usage monitoring  : false
-----
Category: cat-1-time
-----
Description      : Rating group for Time quota
Credit Type Over. : none           Rating Group       : 11
OutOfCredit Action : none
Default Credit   : none
Ingress Queues   : 1
Egress Queues    : 1
Ingress Policers : none
Egress Policers  : none
ExhCrdSvcLvl Pir : none
-----
Category: cat-1-volume
-----
Description      : Rating group for Volume quota
Credit Type Over. : none           Rating Group       : 12
OutOfCredit Action : none
Default Credit   : none
Ingress Queues   : 1
Egress Queues    : 1
Ingress Policers : none
Egress Policers  : none
ExhCrdSvcLvl Pir : 100
=====
```

[Table 69: Category Map Field Descriptions](#) describes category map output fields.

Table 69: Category Map Field Descriptions

Field	Description
Description	The user provided description of this policy
Credit Type	The volume or time based accounting is performed
Credit Exh. Thresh	The credit exhaust threshold considered to take action
Activity Thresh.	The threshold (in kb/s) that is applied to determine whether or not activity is occurring
Gx session level usage monitoring	Whether category map supports Gx session level usage monitoring
Credit Type Over.	Credit type override
Rating Group	The rating group applicable for this category
OutOfCredit Action	The action to be taken if the credit es exhausted
Default Credit	The default value for the Time credit
Ingress Queues	The ingress queues defined in this category
Egress Queues	The egress queues defined in this category
Ingress Policers	The ingress policers defined in this category
Egress Policers	The egress queues defined in this category
ExhCrdSvcLvl Pir	The credit exhaust threshold considered to take action

## 6.13 category-set-id

### category-set-id

#### Syntax

**category-set-id** *category-set*

#### Context

[\[Tree\]](#) (show>app-assure>web-service category-set-id)

#### Full Context

show application-assurance web-service category-set-id



## Description

This command displays information for the web-service category set.

## Parameters

### *category-set*

Specifies the category set ID.

**Values** 0 to 65535

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output examples show information about SAPs using the application profile.

### Output Example

```
# show application-assurance web-service category-set-id 1
=====
Compatible Classifier-ids
=====
Name                Description
-----
web-sevice-1       WebTitan Web Filtering
=====
```

## 6.14 ccrt-replay

### ccrt-replay

## Syntax

**ccrt-replay** [*session-id session-id*] [*diameter-application-policy name*]

**ccrt-replay diameter-application-policy name summary**

**ccrt-replay summary**

## Context

[\[Tree\]](#) (show>subscr-mgmt>diam-session ccrt-replay)

## Full Context

show subscriber-mgmt diameter-session ccrt-replay

## Description

This command displays:

- information for all diameter sessions that are in CCR-T replay mode:

- Diameter session ID
- Diameter Application Policy
- Replay Time left
- statistics per diameter application policy for diameter sessions in CCR-T replay mode or that were in CCR-T replay mode and were dropped or terminated:
  - Sessions in CCR-T replay mode: the number of Diameter Gx or Gy sessions from the specified diameter application policy that are currently in CCR-T replay mode
  - Replay sessions dropped (maximum life-time expired): the number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and got dropped because no CCA-t was received before **max-lifetime** expiration
  - Replay sessions dropped (to free resources): the number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and got dropped because the maximum number of active Diameter sessions for Gx or Gy was reached
  - Replay sessions dropped (cleared): the number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and got dropped because the operator issued a **clear subscriber-mgmt diameter-session ccrt-replay diameter-application-policy name sessions** command
  - Replay sessions terminated (CCA-T received): the number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and for which a CCA-t was received before **max-lifetime** expiration
  - Statistics last cleared time: timestamp when the statistics were last cleared or n/a if the statistics were never cleared

## Parameters

### *name*

Specifies the application policy, up to 32 characters.

### *session-id*

Specifies a diameter session ID.

### *summary*

Displays summarized information about CCR-T replay.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management CCR-T replay information.

### Output Example

```
*A:Dut-C# show subscriber-mgmt diameter-session ccrt-replay
=====
Diameter Sessions in CCR-t Replay Mode
=====
Session-id                               Replay Time Left
Diameter Application Policy
-----
```

```

router.workstation.be;1431089354;13
  diamappol_gx                                0d 21:21:46
bng.nokia.com;1537773225;4
  diam-gy-1                                    0d 00:59:16
-----
No. of Matching Entries: 2
=====
*A:Dut-C# show subscriber-mgmt diameter-session ccrt-replay session-id ro
=====
Diameter Sessions in CCR-t Replay Mode
=====
Session-id                                     Replay Time Left
  Diameter Application Policy
-----
router.workstation.be;1431089354;13
  diamappol_gx                                0d 21:21:27
-----
No. of Matching Entries: 1
=====
*A:Dut-C# show subscriber-mgmt diameter-session ccrt-replay summary
=====
Diameter Sessions in CCR-t Replay Mode
=====
Total Count : 2
=====
*A:Dut-C# show subscriber-mgmt diameter-session ccrt-replay diameter-application-policy "diam-
gy-1"
=====
Diameter Sessions in CCR-T Replay Mode
=====
Session-id                                     Replay Time Left
  Diameter Application Policy
-----
bng.nokia.com;1537773225;6
  diam-gy-1                                    0d 00:58:33
-----
No. of Matching Entries: 1
=====
Diameter CCR-T Replay status for policy "diam-gy-1"
=====
Sessions in CCR-T replay mode                  : 1
Replay sessions dropped (maximum life-time expired) : 0
Replay sessions dropped (to free resources)       : 0
Replay sessions dropped (cleared)                : 0
Replay sessions terminated (CCA-T received)      : 1
Statistics last cleared time                    : N/A
=====
    
```

Table 70: CCR-T Replay Field Descriptions describes CCRT replay output fields.

Table 70: CCR-T Replay Field Descriptions

Field	Description
Session-id	The diameter session ID that is in CCR-T replay mode
Diameter Application Policy	The diameter application policy name to which the Gx or Gy session in CCR-T replay mode belongs

Field	Description
Replay Time Left	The remaining <b>max-lifetime</b> before the Diameter Gx or Gy session in CCR-T replay mode is dropped
No. of Matching Entries	The number of entries matching the search criteria
Sessions in CCR-T replay mode	The number of Diameter Gx or Gy sessions from the specified diameter application policy that are in CCR-T replay mode
Replay sessions dropped (maximum life-time expired)	The number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and got dropped because no CCA-t was received before max-lifetime expiration
Replay sessions dropped (to free resources)	The number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and got dropped because the maximum number of Diameter sessions was reached
Replay sessions dropped (cleared)	The number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and got dropped because the operator issued a <b>clear subscriber-mgmt diameter-session ccrt-replay diameter-application-policy <i>name</i> sessions</b> command
Replay sessions terminated (CCA-T received)	The number of Diameter Gx or Gy sessions from the specified diameter application policy that were in CCR-T replay mode and for which a CCA-t was received before max-lifetime expiration
Statistics last cleared time	The timestamp when the statistics were last cleared or n/a if the statistics were never cleared

## ccrt-replay

### Syntax

**ccrt-replay diameter-application-policy *name* statistics**

**ccrt-replay diameter-application-policy *name* sessions**

### Context

[\[Tree\]](#) (clear>subscr-mgmt>diam-session ccrt-replay)

### Full Context

clear subscriber-mgmt diameter-session ccrt-replay

## Description

This command, when the **statistics** parameter is specified, clears the CCR-T replay statistics and updates the "Statistics last cleared time" value.

This command, when the **sessions** parameter is specified, drops the diameter Gx or Gy sessions that are in CCR-T replay mode.

## Parameters

### *name*

Specifies the diameter application policy, up to 32 characters.

### **statistics**

Clears the CCR-T replay statistics.

### **sessions**

Clears the sessions that are in CCR-T replay mode.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 6.15 cem

```
cem
```

## Syntax

```
cem
```

## Context

[\[Tree\]](#) (clear>service>statistics>id cem)

## Full Context

```
clear service statistics id cem
```

## Description

This command clears CEM statistics for this service.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 6.16 cert-profile

### cert-profile

#### Syntax

**cert-profile** *name* **association**

**cert-profile** [*name*]

**cert-profile** *name* **entry** [*value*]

#### Context

[\[Tree\]](#) (show ipsec cert-profile)

#### Full Context

show ipsec cert-profile

#### Description

This command displays IPsec certificate profile information.

#### Parameters

##### *name*

Specifies an existing certificate profile name.

##### **association**

Displays information for which this IPsec certificate profile is associated.

##### *value*

Displays information for the specified entry.

**Values** 1 to 8

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the **show ipsec cert-profile** command.

#### Output Example

```
*A:Dut-A# show ipsec cert-profile cert "cert-1.der"
=====
Certificate Profile Entry
=====
Id Cert                               Key                               Status Flags
-----
1 cert-1.der                           key-1.der
=====
```

```
*A:Dut-A#

*A:Dut-A# show ipsec cert-profile "cert-1.der" entry 1
=====
IPsec Certificate Profile: cert-1.der Entry: 1 Detail
=====
Cert File       : cert-1.der
Key File        : key-1.der
Status Flags    : (Not Specified)
Comp Chain      : complete

Compute Chain CA Profiles
-----
CA10
CA9
CA8
CA7
CA6
=====
*A:Dut-A#
```

## cert-profile

### Syntax

```
cert-profile [name]
cert-profile name association
cert-profile name entry entry
```

### Context

[\[Tree\]](#) (show system security tls cert-profile)

### Full Context

```
show system security tls cert-profile
```

### Description

This command displays information about server and client profiles that are using this certificate profile.

### Parameters

#### *entry*

Specifies a certificate profile entry number for which to display information.

**Values** 1 to 8

#### *name*

Specifies the name of a certificate profile for which to display information.

### Platforms

All

## 6.17 certificate

### certificate

#### Syntax

**certificate** *filename* **association**

#### Context

**[Tree]** (show certificate)

**[Tree]** (show>ipsec certificate)

#### Full Context

show certificate

show ipsec certificate

#### Description

This command displays certificate-related information.

#### Parameters

##### *filename*

Specifies the certificate file name.

##### **association**

Displays information for which this IPsec certificate is associated.

#### Platforms

All

- show certificate

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

- show ipsec certificate

#### Output

The following output is an example of the **show certificate** command.

#### Output Example

```
*A:Dut-B# show certificate ca-profile
-----
Max Cert Chain Depth: 7 (default)
-----
Certificate Display Format: 1 ASCII
=====
CA Profile
=====
CA Profile      Admin Oper  Cert File      CRL File
```



```

State State
-----
CA0      up    up    CA1-00cert.der      CA1-00crl.der
CA1      up    up    CA1-01cert.der      CA1-01crl.der
CA2      up    up    CA1-02cert.der      CA1-02crl.der
CA3      up    up    CA1-03cert.der      CA1-03crl.der
CA4      up    up    CA1-04cert.der      CA1-04crl.der
CA5      up    up    rsa_sha512_1024_0cert.d*  rsa_sha512_1024_0crl.der
CA6      up    up    rsa_sha512_1024_1cert.d*  rsa_sha512_1024_1crl.der
CA7      up    up    rsa_sha512_1024_2cert.d*  rsa_sha512_1024_2crl.der
CA8      up    up    rsa_sha512_1024_3cert.d*  rsa_sha512_1024_3crl.der
CA9      up    up    rsa_sha512_1024_4cert.d*  rsa_sha512_1024_4crl.der
CA10     up    up    rsa_sha512_1024_5cert.d*  rsa_sha512_1024_5crl.der
CA11     up    up    rsa_sha384_1024_0cert.d*  rsa_sha384_1024_0crl.der
CA12     up    up    rsa_sha384_1024_1cert.d*  rsa_sha384_1024_1crl.der
CA13     up    up    rsa_sha384_1024_2cert.d*  rsa_sha384_1024_2crl.der
CA14     up    up    rsa_sha384_1024_3cert.d*  rsa_sha384_1024_3crl.der
CA15     up    up    rsa_sha384_1024_4cert.d*  rsa_sha384_1024_4crl.der
CA16     up    up    rsa_sha384_1024_5cert.d*  rsa_sha384_1024_5crl.der
CMPv2    up    up    rsaCMPv2cert.der      rsaCMPv2CRL.der
-----
Entries found: 18
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-B#

*A:Dut-B# show ipsec certificate cert-1.der association
=====
Associated Tunnels
=====
Tunnel                               SvcId      Sap                               Admin
-----
tun-1-s-cert-v2                       3          tunnel-1.private:3              Up
tun-1-s-cert-MTA-v2                    8          tunnel-1.private:7              Up
tun-1-s-cert-i_op-ss-v2                 42         tunnel-1.private:10             Up
tun-1-s-cert-MTA-i_op-ss-v2             48         tunnel-1.private:11             Up
-----
IPsec Tunnels: 4
=====
*A:Dut-B#
    
```

In the following example, the "cert-1.der" is the certificate-profile name, whereas above the cert-1.der is the actual file in use.

```

*A:Dut-B# show ipsec cert-profile association "cert-1.der"
=====
IPsec tunnels using certificate profile
=====
SvcId   Type   SAP                               Tunnel
-----
3       vprn  tunnel-1.private:3              tun-1-s-cert-v2
8       vprn  tunnel-1.private:7              tun-1-s-cert-MTA-v2
42      vprn  tunnel-1.private:10             tun-1-s-cert-i_op-ss-v2
48      vprn  tunnel-1.private:11             tun-1-s-cert-MTA-i_op-ss-v2
=====
Number of tunnel entries: 4
=====
IPsec gateways using certificate profile
=====
    
```

```

SvcId      Type   SAP                               Gateway
-----
1057      vprn  tunnel-1.public:18              d-cert-MTA-g1-1-v2
1092      vprn  tunnel-1.public:21              d-cert-i_op-ss-g1-1-v2
=====
Number of gateway entries: 2
=====
*A:Dut-B#

show ipsec gateway tunnel 10.2.2.100:500
=====
IPsec Remote Users Tunnel Detail
=====
IP Addr: 10.2.2.100:500, port: 500
-----
Service Id      : 300                Sap Id          : tunnel-1.public:100
Address         : 10.2.2.100:500
Private If      : priv
Private Address : 10.20.20.50
Private Service : 400                Template Id     : 1
Replay Window  : None                Bi Direction SA : true
Host MDA       : 1/2
Match TrustAnchor: labroot
Last Oper Changed: 05/04/2016 17:36:20
IKE IDI Type   : derAsn1Dn
IKE IDI Value  : CN=Client-1
-----
Dynamic Keying Parameters
-----
Transform Id1   : 1                Transform Id2   : None
Transform Id3   : None              Transform Id4   : None
IPsec GW Name   : rw
Local GW Address : 172.16.100.1
Ike Policy Id   : 1                Ike Pol Auth    : cert
Pre Shared Key  : None
Cert Profile    : segw
Trust Anchor Prof: labroot
Selected Cert   : segw-1.cert
Selected Key    : segw-1.key
Send Chain Prof : None
Local Id Type   : none
Client Database
  Name          : (Not Specified)
  Client ID     : None
Radius Acct Plcy : None
Radius Auth Plcy : None
TS-List        : <none>
Certificate Status Verify
-----
Primary         : crl                Secondary       : none
Default Result  : good
DHCP
-----
Admin State     : Up                Send Release    : true
Service        : 400
Gi-Address     : 10.20.20.1
Server1-Address : 10.9.9.9
DHCPv4 Lease
-----
Private Address : 10.20.20.50
Acquired       : 2016/05/04 17:36:19 UTC
Renew          : 2016/05/04 18:06:19 UTC
Rebind         : 2016/05/04 18:28:49 UTC
    
```

```
Valid Lifetime
  End       : 2016/05/04 18:36:19 UTC
  Total     : 3600 seconds
  Remaining : 3585 seconds
Server     : 10.9.9.9
-----
ISAKMP-SA
-----
State       : Up
Established : 05/04/2016 17:36:20   Lifetime      : 86400
Expires     : 05/05/2016 17:36:20
ISAKMP Statistics
-----
Tx Packets  : 2                    Rx Packets    : 2
Tx Errors   : 0                    Rx Errors     : 0
Tx DPD      : 0                    Rx DPD        : 0
Tx DPD ACK  : 0                    Rx DPD ACK    : 0
DPD Timeouts : 0                  Rx DPD Errors : 0
-----
IPsec-SA : 1, Inbound (index 2)
-----
SPI        : 207232
Auth Algorithm : Sha1              Encr Algorithm : Aes128
Installed   : 05/04/2016 17:36:20 Lifetime      : 3600
Local Traffic Selectors:
10.9.9.9-10.9.9.9
  any protocol
Remote Traffic Selectors:
10.20.20.50-10.20.20.50
  any protocol
Aggregate Statistics
-----
Bytes Processed : 0                Packets Processed: 0
Crypto Errors   : 0                Replay Errors     : 0
SA Errors       : 0                Policy Errors     : 0
-----
IPsec-SA : 1, Outbound (index 1)
-----
SPI        : 3433111520
Auth Algorithm : Sha1              Encr Algorithm : Aes128
Installed   : 05/04/2016 17:36:20 Lifetime      : 3600
Local Traffic Selectors:
10.9.9.9-10.9.9.9
  any protocol
Remote Traffic Selectors:
10.20.20.50-10.20.20.50
  any protocol
Aggregate Statistics
-----
Bytes Processed : 0                Packets Processed: 0
Crypto Errors   : 0                Replay Errors     : 0
SA Errors       : 0                Policy Errors     : 0
=====
Fragmentation Statistics
=====
Encapsulation Overhead : 73
Pre-Encapsulation
  Fragmentation Count : 0
  Last Fragmented Packet Size : 0
Post-Encapsulation
  Fragmentation Count : 0
  Last Fragmented Packet Size : 0
=====
```

## 6.18 certificate-profile

### certificate-profile

#### Syntax

certificate-profile

#### Context

[\[Tree\]](#) (show app-assure group certificate-profile)

#### Full Context

show application-assurance group certificate-profile

#### Description

This command displays certificate profile information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.19 cflowd

### cflowd

#### Syntax

cflowd

#### Context

[\[Tree\]](#) (show cflowd)

#### Full Context

show cflowd

#### Description

This command displays cflowd information.

#### Platforms

All

## cflowd

### Syntax

cflowd

### Context

[\[Tree\]](#) (show>app-assure cflowd)

### Full Context

show application-assurance cflowd

### Description

This command configures the context to display cflowd template field information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## cflowd

### Syntax

cflowd

### Context

[\[Tree\]](#) (show>app-assure>group cflowd)

### Full Context

show application-assurance group cflowd

### Description

Commands in this context display cflowd output.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## cflowd

### Syntax

cflowd

## Context

[\[Tree\]](#) (clear cflowd)

## Full Context

clear cflowd

## Description

This command clears the raw and aggregation flow caches which are sending flow data to the configured collectors. This action will trigger all the flows to be discarded. The cache restarts flow data collection from a fresh state. This command also clears global stats collector stats listed in the cflowd **show** commands.

## Platforms

All

cflowd

## Syntax

cflowd

## Context

[\[Tree\]](#) (tools>dump cflowd)

## Full Context

tools dump cflowd

## Description

Commands in this context dump Cflowd information.

## Platforms

All

cflowd

## Syntax

cflowd

## Context

[\[Tree\]](#) (tools>perform cflowd)

## Full Context

tools perform cflowd

## Description

Commands in this context perform Cflowd operations.

## Platforms

All

## cflowd

## Syntax

**cflowd**

## Context

[\[Tree\]](#) (clear>app-assure>group cflowd)

## Full Context

clear application-assurance group cflowd

## Description

This command clears cflowd application assurance statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.20 cfm-stack-table

## cfm-stack-table

## Syntax

**cfm-stack-table** [**all-ports**] [**level** *level*] [**direction** { **up** | **down**}] [**primary-vlan-enabled** *vlan-id*]

**cfm-stack-table** [{**all-sdps** | **all-virtuals**}] [**level** *level*] [**direction** { **up** | **down**}] [**primary-vlan-enabled** *vlan-id*]

**cfm-stack-table** **facility** [{**all-ports** | **all-port-meps** | **all-lags** | **all-lag-meps** | **all-tunnel-meps** | **all-router-interfaces**}] [**level** *level*] [**direction** { **up** | **down**}]

**cfm-stack-table** **facility** **collect-imm-stats**

**cfm-stack-table** **facility** **lag** *lag-id* [**tunnel** *tunnel-id*] [**level** *level*] [**direction** { **up** | **down**}]

**cfm-stack-table** **facility** **port** *port-id* [**tunnel** *tunnel-id*] [**level** *level*] [**direction** { **up** | **down**}]

**cfm-stack-table** **facility** **router-interface** *interface-name* [**level** *level*] [**direction** { **up** | **down**}]

**cfm-stack-table** **port** *port-id* [**vlan** *qtag* [*qtag*]] [**level** *level*] [**direction** { **up** | **down**}] [**primary-vlan-enabled** *vlan-id*]

**cfm-stack-table sdp** *sdp-id[:vc-id]* [**level** *level*] [**direction** {**up** | **down**}] [**primary-vlan-enabled** *vlan-id*]  
**cfm-stack-table virtual** *service-id* [**level** *level*]

### Context

[\[Tree\]](#) (show>eth-cfm cfm-stack-table)

### Full Context

show eth-cfm cfm-stack-table

### Description

This command displays stack-table information. This stack-table is used to display the various management points MEPs and MIPs that are configured on the system. These can be service-based or facility-based. The various options allow the operator to be specific. If no parameters are included then the entire stack-table is displayed.

### Parameters

#### **port** *port-id*

Displays the bridge port or aggregated port on which MEPs or MHFs are configured.

<b>Values</b>	<i>port-id</i>	<i>slot/mda/port[.channel]</i>
	lag-id	lag-id
		lag keyword
		id 1 to 800
	eth-sat-id	esat-<id>/<slot>/[u]<port>
		esat keyword
		id 1 to 20
		u keyword for up-link port
	tdm-sat-id	tsat-<id>/<slot>/[<u>]<port>.<channel>
		tsat keyword
		id 1 to 20
		u keyword for up-link port

#### **vlan** *vlan-id*

Displays the associated VLAN ID.

**Values** 1 or 4094 or all

#### **level**

Displays the MD level of the maintenance point.



**Values** 0 to 7

**collect-lmm-stats**

Displays facility MEPs on which LMM collection is enabled.

**direction up | down**

Displays the direction in which the MP faces on the bridge port.

**facility**

Displays the CFM stack table information for facility MEPs. The base command displays all the facility MEPs. Options may be included in order to further parse the table for specific facility MEP information.

**sdp sdp-id[:vc-id]**

Displays CFM stack table information for the specified SDP.

**Values** sdp-id: 1 to 32767  
 vc-id: 1 to 4294967295

**virtual service-id**

Displays CFM stack table information for the specified SDP.

**Values** service-id: 1..2148278386]  
 svc-name: up to 64 characters

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output is an example of stack table information. [Table 71: ETH-CFM CFM Stack Table Field Descriptions](#) describes the output content.

**Output Example**

```
show eth-cfm cfm-stack-table
=====
CFM Stack Table Defect Legend:
R = Rdi, M = MacStatus, C = RemoteCCM, E = ErrorCCM, X = XconCCM
A = AisRx, L = CSF LOS Rx, F = CSF AIS/FDI rx, r = CSF RDI rx
G = receiving grace PDU (MCC-ED or VSM) from at least one peer
=====
CFM SAP Stack Table
=====
Sap          Lvl Dir Md-index  Ma-index  MepId  Mac-address      Defect G
md-admin-name
ma-admin-name
-----
1/1/4:1001   3 D      13        13 1002 b6:1c:01:01:00:04 ----- -
13
13
1/1/9:100    2 U      12        1000 928 00:00:01:01:09:28 ----- -
12
vpls-100-1
```

```

1/1/10:100      2 U      12      1000 1028 00:00:01:01:10:28 ----- -
  12
  vpls-100-1

=====

=====
CFM Ethernet Tunnel Stack Table
=====
Eth-tunnel      Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM Ethernet Ring Stack Table
=====
Eth-ring        Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM Facility Port Stack Table
=====
Port      Tunnel  Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
1/1/4      0        0 D      10    11400115    2 00:00:00:00:00:28 ----- -
  10
  11400115

1/1/6      0        0 D      10    11600117    2 00:00:00:00:00:28 ----- -
  10
  11600117

=====

=====
CFM Facility LAG Stack Table
=====
Lag      Tunnel  Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
name
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM Facility Tunnel Stack Table
=====
Port/Lag Tunnel  Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====
    
```

```

=====
CFM Facility Interface Stack Table
=====
Interface          Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM SAP Primary VLAN Stack Table
=====
Sap
  Primary VlanId  Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
1/1/4:cp-1
  60              3 D      13        13 1001 b6:1c:01:01:00:04 --C---- -
  13
  13
-----

=====
CFM SDP Stack Table
=====
Sdp
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM SDP Primary VLAN Stack Table
=====
Sdp
  Primary VlanId  Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM Virtual Stack Table
=====
Service          Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====
    
```

Table 71: ETH-CFM CFM Stack Table Field Descriptions

Label	Description
Sap	Displays associated SAP IDs.

Label	Description
Sdp	Displays the SDP binding for the bridge.
Level Dir	Displays the MD level of the maintenance point.
Md-index	Displays the maintenance domain (MD) index.
Ma-index	Displays the maintenance association (MA) index.
Mep-id	Displays the integer that is unique among all the MEPs in the same MA.
Mac-address	Displays the MAC address of the MP.
md-admin-name	Displays the administrative MD name.
ma-admin-name	Displays the administrative MA name.

## 6.21 change-key

### change-key

#### Syntax

**change-key authentication** *authentication-protocol old-authentication-key new-authentication-key*

**change-key authentication authentication-protocol privacy** *privacy-protocol old-privacy-key new-privacy-key*

#### Context

[\[Tree\]](#) (tools>perform>system>mgmt-itf>snmp change-key)

#### Full Context

tools perform system management-interface snmp change-key

#### Description

This command generates KeyChange strings to change SNMPv3 authentication or privacy keys. The SNMP engine ID is not needed because localized keys are required as input. The KeyChange algorithm uses a random string, which generates a different output each time the command is executed.

#### Parameters

##### **authentication**

Generates a KeyChange string for an authentication key.

##### **authentication-protocol**

Specifies the SNMPv3 authentication protocol.

- Values**
- hmac-md5-96** — Specifies use of the HMAC-MD5-96 authentication protocol.
  - hmac-sha1-96** — Specifies use of the HMAC-SHA-96 authentication protocol.
  - hmac-sha2-224** — Specifies use of the HMAC-SHA-224 authentication protocol.
  - hmac-sha2-256** — Specifies use of the HMAC-SHA-256 authentication protocol.
  - hmac-sha2-384** — Specifies use of the HMAC-SHA-384 authentication protocol.
  - hmac-sha-512** — Specifies use of the HMAC-SHA-512 authentication protocol.

***old-authentication-key***

Specifies the old localized authentication key.

***new-authentication-key***

Specifies the new localized authentication key.

***privacy***

Keyword to generate a KeyChange string for a privacy key.

***privacy-protocol***

Specifies the SNMPv3 privacy protocol.

- Values**
- cbc-des** — Specifies the use of the CBC-DES privacy protocol. This parameter is not available in FIPS-140-2 mode.
  - cfb128-aes-128** — Specifies the use of the CFB128-AES-128 privacy protocol.
  - cfb128-aes-192** — Specifies the use of the CFB128-AES-192 privacy protocol.
  - cfb128-aes-256** — Specifies the use of the CFB128-AES-256 privacy protocol.

***old-privacy-key***

Specifies the old localized privacy key.

***new-privacy-key***

Specifies the new localized privacy key.

**Platforms**

All

**Output**

The following output is an example of a generated KeyChange string.

## Output Example

```
A:ALA-1# tools perform system management-interface snmp change-key authentication hmac-sha1-96
5c9ccb02cb2066f226e9d41b428c63ba801a3319
6caf2644ebb8141876a455ba14e58d5c61d8cb16
KeyChange string :
8feb0fa890f3607aa0986e7f0a71d3d889da1d3f1f07933770e50639c0770cca4dc0519637796240
```

## 6.22 channel

### channel

#### Syntax

```
channel [router router-instance | vpls service-id | service-name service-name] [fp slot-number/fp-number] [group ip-address [source ip-address]] [path path-type] [detail]
```

#### Context

[\[Tree\]](#) (show>mcast-management channel)

#### Full Context

```
show mcast-management channel
```

#### Description

This command displays multicast path management channel related information.

#### Parameters

##### **service-id**

Specifies an existing VPLS service ID.

**Values** 1 to 214748364

##### **service-name**

A string up to 64 characters.

##### **slot-number**

Displays information for the specified card slot.

##### **fp-number**

Specifies an FP.

**Values** 1 to 8

##### **ip-address**

ipv4-address in the form *a.b.c.d*

##### **path-type**

Specifies the path type.

**Values** primary, secondary

## Platforms

7450 ESS, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-7/12/12e, 7750 SR-s, 7950 XRS, VSR

## Output

The following output is an example of multicast management channel information.

### Output Example

```
*A:PE# show mcast-management channel
=====
Multicast Channels
=====
Legend : D - Dynamic E - Explicit
=====
Source Address          Slot/Fp  Current-Bw  Path      D/E
Group Address          Highest-Bw Plane
-----
10.0.0.29              5/1     3930        Primary   D
233.252.0.1           3973        17
=====
Multicast Channels : 1
=====
*A:PE# show mcast-management channel detail
=====
Multicast Channels
-----
Source Address      : 10.0.0.29
Group Address       : 233.252.0.1
-----
Slot/Complex        : 5/1          Current Bw       : 3918 kbps
Dynamic/Explicit    : Dynamic      Current Path     : Primary
Oper Admin Bw       : 0 kbps       Current Plane    : 17
Ing last highest    : 3973         Preference       : 0
Black-hole rate     : None         Ing sec highest  : 3970
Time remaining      : 20 seconds   Blackhole        : No
=====
Multicast Channels : 1
=====
*A:PE#
```

## channel

### Syntax

**channel** [**service** *service-id*] [**interface** *ip-int-name*] [**address** *mcast-address*] [**source** *ip-address*] [**detail**]

### Context

[\[Tree\]](#) (show>video>perfect-stream channel)

### Full Context

show video perfect-stream channel

## Description

This command displays video channel information.

## Parameters

### **service *service-id***

Displays video channel information pertaining to the specified service ID.

**Values**    service-id: 1 to 2148278381  
              svc-name: A string up to 64 characters  
              router-name: Base, management, vpls-management

**Default**    Base

### **interface *ip-int-name***

Displays video channel information pertaining to the specified interface.

### **address *mcast-address***

Displays video channel information pertaining to the specified multicast channel address.

### **source *ip-address***

Displays video channel information pertaining to the source IP address.

### **detail**

The output displays detailed video channel information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s

## channel

## Syntax

```
channel [service service-id] [interface ip-int-name] [address mcast-address] [source ip-address]  
      [summary | detail] [pid | config | analyzer [interval time-interval]]
```

## Context

[\[Tree\]](#) (show>video channel)

## Full Context

show video channel

## Description

This command displays video channel information.

## Parameters

### **service *service-id***

Displays video channel information pertaining to the specified service ID.



**Values** service-id: 1 to 214748364  
svc-name: A string up to 64 characters  
router-name: Base, management, vpls-management

**Default** Base

**interface *ip-int-name***

Displays video channel information pertaining to the specified interface.

**address *mcast-address***

Displays video channel information pertaining to the specified multicast channel address.

**source *ip-address***

Displays video channel information pertaining to the source IP address.

**summary**

The output displays summarized video channel information.

**detail**

The output displays detailed video channel information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s

**Output**

The following output is an example of this command.

**Output Example**

```
*A:SR-12/Dut-C# show video channel analyzer
=====
Video channel analyzer summary
=====
Channel number : 1
-----
Service Id      : 300                Interface Name   : video-300
Group Address   : 192.0.2.6          Source Address  : 10.20.13.2
MDI Delay Factor : 7                MDI Loss Rate   : 0
Good Secs      : 54
-----
Channel number : 2
-----
Service Id      : 300                Interface Name   : video-300
Group Address   : 192.0.2.6          Source Address  : 192.168.2.1
MDI Delay Factor : 6                MDI Loss Rate   : 0
Good Secs      : 54
-----
Channel number : 3
-----
Service Id      : 300                Interface Name   : video-300
Group Address   : 192.0.2.7          Source Address  : 10.20.13.3
MDI Delay Factor : 7                MDI Loss Rate   : 0
Good Secs      : 54
-----
Number of channels : 3
=====
*A:SR-12/Dut-C#
```

```
*A:SR-12/Dut-C# show video channel analyzer address 192.0.2.6 source 10.20.13.2 interface
"video-300" detail
```

```
=====
Video channel analyzer detail
=====
```

```
Channel number : 1
```

```
-----
Service Id      : 300           Interface Name   : video-300
Group Address   : 192.0.2.6     Source Address   : 10.20.13.2
MDI Delay Factor : 8           MDI Loss Rate    : 0
Good Secs      : 80
```

```
=====
GOP Stats
=====
```

```
-----
                Min           Max           Avg
-----
GOP Length      40           78           48
Frames/Sec      39           55           53
```

```
=====
Frame Stats
=====
```

```
-----
                I-Frame       P-Frame       B-Frame
-----
Good            19           986           0
Bad             0            0             0
```

```
=====
Error Stats
=====
```

```
-----
                POA Events     QoS Events     TNC Events
-----
PAT Rep         0             0             0
PMT Rep         0             0             0
PCR Rep         0             0             0
PAT Syntax Err  -             -             0
PMT Syntax Err  -             -             0
Sync Byte Err   -             0             -
Sync Loss       0             -             -
Unref PID       -             -             0
Traffic Loss    0             -             -
-----
Overall         0             0             0
```

```
-----
Reoccurring events only increment counter once every second
-----
```

```
Number of channels : 1
```

```
=====
*A:SR-12/Dut-C#
```

```
*A:SR-12/Dut-C# show video channel pid
```

```
=====
Video Channel PID
=====
```

```
-----
Service Id      : 300           Interface Name   : video-300
Group Address   : 192.0.2.6     Source Address   : 10.20.13.2
PID             : 0             PID Type        : pat
MPEG Stream Type : 0           Is PCR PID      : No
Cc Err Secs     : 0             TEI Err Secs    : 0
Absent Err Secs : 0             PID Bitrate     : 0

Service Id      : 300           Interface Name   : video-300
Group Address   : 192.0.2.6     Source Address   : 10.20.13.2
PID             : 2             PID Type        : audio
```

```

MPEG Stream Type : 4           Is PCR PID       : No
Cc Err Secs      : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 126336

Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 32         PID Type        : video
MPEG Stream Type : 27         Is PCR PID      : Yes
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 1952192

Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 33         PID Type        : pmt
MPEG Stream Type : 0          Is PCR PID      : No
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 0

Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 308        PID Type        : audio
MPEG Stream Type : 4          Is PCR PID      : No
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 126336
    
```

Number of pids for this channel: 5

```

-----
Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 192.168.2.1
PID              : 0          PID Type        : pat
MPEG Stream Type : 0          Is PCR PID      : No
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 0

Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 192.168.2.1
PID              : 2          PID Type        : audio
MPEG Stream Type : 4          Is PCR PID      : No
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 126336

Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 192.168.2.1
PID              : 32         PID Type        : video
MPEG Stream Type : 27         Is PCR PID      : No
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 1949184

Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 192.168.2.1
PID              : 33         PID Type        : pmt
MPEG Stream Type : 0          Is PCR PID      : No
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 0

Service Id       : 300         Interface Name    : video-300
Group Address    : 192.0.2.6   Source Address   : 192.168.2.1
PID              : 308        PID Type        : audio
MPEG Stream Type : 4          Is PCR PID      : No
Cc Err Secs     : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 136864
    
```

=====  
 \*A:SR-12/Dut-C#

```
*A:SR-12/Dut-C# show video channel pid interface "video-300" source 10.20.13.3 address 192.0.2.5
```

```
=====
Video Channel PID
=====
```

```
No Matching Entries
=====
```

```
*A:SR-12/Dut-C# show video channel config
```

```
=====
Video channel config
=====
```

Service Id	: 300	Interface Name	: video-300
Group Address	: 192.0.2.6	Source Address	: 10.20.13.2
Analyzer State	: Enabled	Cc Error	: Disabled
PAT Rep Err	: Enabled	TNC PAT Rep	: 200
QOS PAT Rep	: 400	POA PAT Rep	: 600
PAT Syntax	: Enabled	PCR Rep Err	: Enabled
TNC PCR Rep	: 200	QOS PCR Rep	: 400
POA PCR Rep	: 600	Vid PID Absent	: 1000
PID PMT Unref	: Enabled	PMT Rep Err Secs	: Enabled
TNC PMT Rep	: 400	QOS PMT Rep	: 800
POA PMT Rep	: 2000	PMT Syntax	: Enabled
SCTE35 Err Secs	: Disabled	TEI Err Secs	: Disabled
TS Sync Loss	: Enabled	Non-Vid Pid Abse*	: 1000
Alarm Sev	: tnc		

```
-----
```

Service Id	: 300	Interface Name	: video-300
Group Address	: 192.0.2.6	Source Address	: 192.168.2.1
Analyzer State	: Enabled	Cc Error	: Disabled
PAT Rep Err	: Enabled	TNC PAT Rep	: 200
QOS PAT Rep	: 400	POA PAT Rep	: 600
PAT Syntax	: Enabled	PCR Rep Err	: Enabled
TNC PCR Rep	: 200	QOS PCR Rep	: 400
POA PCR Rep	: 600	Vid PID Absent	: 1000
PID PMT Unref	: Enabled	PMT Rep Err Secs	: Enabled
TNC PMT Rep	: 400	QOS PMT Rep	: 800
POA PMT Rep	: 2000	PMT Syntax	: Enabled
SCTE35 Err Secs	: Disabled	TEI Err Secs	: Disabled
TS Sync Loss	: Enabled	Non-Vid Pid Abse*	: 1000
Alarm Sev	: tnc		

```
-----
```

Service Id	: 300	Interface Name	: video-300
Group Address	: 192.0.2.7	Source Address	: 10.20.13.3
Analyzer State	: Enabled	Cc Error	: Disabled
PAT Rep Err	: Enabled	TNC PAT Rep	: 200
QOS PAT Rep	: 400	POA PAT Rep	: 600
PAT Syntax	: Enabled	PCR Rep Err	: Enabled
TNC PCR Rep	: 200	QOS PCR Rep	: 400
POA PCR Rep	: 600	Vid PID Absent	: 1000
PID PMT Unref	: Enabled	PMT Rep Err Secs	: Enabled
TNC PMT Rep	: 400	QOS PMT Rep	: 800
POA PMT Rep	: 2000	PMT Syntax	: Enabled
SCTE35 Err Secs	: Disabled	TEI Err Secs	: Disabled
TS Sync Loss	: Enabled	Non-Vid Pid Abse*	: 1000
Alarm Sev	: tnc		

```
-----
Number of channels : 3
=====
```

```
* indicates that the corresponding row element may have been truncated.
```

```
*A:SR-12/Dut-C#
```

```
*A:SR-12/Dut-C# show video channel config interface "video-300"
```

```
=====
Video channel config
=====
```

```
Service Id      : 300           Interface Name   : video-300
Group Address   : 192.0.2.6     Source Address  : 10.20.13.3
Analyzer State  : Enabled       Cc Error        : Disabled
PAT Rep Err     : Enabled       TNC PAT Rep     : 200
QOS PAT Rep     : 400           POA PAT Rep     : 600
PAT Syntax      : Enabled       PCR Rep Err     : Enabled
TNC PCR Rep     : 200           QOS PCR Rep     : 400
POA PCR Rep     : 600           Vid PID Absent  : 1000
PID PMT Unref   : Enabled       PMT Rep Err Secs : Enabled
TNC PMT Rep     : 400           QOS PMT Rep     : 800
POA PMT Rep     : 2000          PMT Syntax      : Enabled
SCTE35 Err Secs : Disabled      TEI Err Secs    : Disabled
TS Sync Loss    : Enabled       Non-Vid Pid Abse* : 1000
Alarm Sev       : tnc
```

```
-----
Service Id      : 300           Interface Name   : video-300
Group Address   : 192.0.2.6     Source Address  : 192.168.2.1
Analyzer State  : Enabled       Cc Error        : Disabled
PAT Rep Err     : Enabled       TNC PAT Rep     : 200
QOS PAT Rep     : 400           POA PAT Rep     : 600
PAT Syntax      : Enabled       PCR Rep Err     : Enabled
TNC PCR Rep     : 200           QOS PCR Rep     : 400
POA PCR Rep     : 600           Vid PID Absent  : 1000
PID PMT Unref   : Enabled       PMT Rep Err Secs : Enabled
TNC PMT Rep     : 400           QOS PMT Rep     : 800
POA PMT Rep     : 2000          PMT Syntax      : Enabled
SCTE35 Err Secs : Disabled      TEI Err Secs    : Disabled
TS Sync Loss    : Enabled       Non-Vid Pid Abse* : 1000
Alarm Sev       : tnc
```

```
-----
Service Id      : 300           Interface Name   : video-300
Group Address   : 192.0.2.7     Source Address  : 10.20.13.3
Analyzer State  : Enabled       Cc Error        : Disabled
PAT Rep Err     : Enabled       TNC PAT Rep     : 200
QOS PAT Rep     : 400           POA PAT Rep     : 600
PAT Syntax      : Enabled       PCR Rep Err     : Enabled
TNC PCR Rep     : 200           QOS PCR Rep     : 400
POA PCR Rep     : 600           Vid PID Absent  : 1000
PID PMT Unref   : Enabled       PMT Rep Err Secs : Enabled
TNC PMT Rep     : 400           QOS PMT Rep     : 800
POA PMT Rep     : 2000          PMT Syntax      : Enabled
SCTE35 Err Secs : Disabled      TEI Err Secs    : Disabled
TS Sync Loss    : Enabled       Non-Vid Pid Abse* : 1000
Alarm Sev       : tnc
```

```
-----
Number of channels : 3
=====
```

```
* indicates that the corresponding row element may have been truncated.
```

```
*A:SR-12/Dut-C#
```

```
*A:SR-12/Dut-C# show video channel pid
```

```
=====
Video Channel PID
=====
```

```
Service Id      : 300           Interface Name   : video-300
Group Address   : 192.0.2.6     Source Address  : 10.20.13.2
PID             : 0             PID Type        : pat
```

```

MPEG Stream Type : 0           Is PCR PID       : No
Cc Err Secs      : 0           TEI Err Secs    : 0
Absent Err Secs  : 16         PID Bitrate     : 0

Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 2           PID Type        : audio
MPEG Stream Type : 4           Is PCR PID     : No
Cc Err Secs     : 0           TEI Err Secs   : 0
Absent Err Secs  : 0           PID Bitrate    : 126336

Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 32          PID Type        : video
MPEG Stream Type : 27          Is PCR PID     : Yes
Cc Err Secs     : 0           TEI Err Secs   : 0
Absent Err Secs  : 0           PID Bitrate    : 1941664

Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 33          PID Type        : pmt
MPEG Stream Type : 0           Is PCR PID     : No
Cc Err Secs     : 0           TEI Err Secs   : 0
Absent Err Secs  : 16         PID Bitrate    : 0

=====
*A:SR-12/Dut-C#

*A:SR-12/Dut-C# show video channel pid interface "video-300" source 10.20.13.2 address
192.0.2.6
=====
Video Channel PID
=====
Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 0           PID Type        : pat
MPEG Stream Type : 0           Is PCR PID     : No
Cc Err Secs     : 0           TEI Err Secs   : 0
Absent Err Secs  : 16         PID Bitrate    : 0

Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 2           PID Type        : audio
MPEG Stream Type : 4           Is PCR PID     : No
Cc Err Secs     : 0           TEI Err Secs   : 0
Absent Err Secs  : 0           PID Bitrate    : 136864

Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 32          PID Type        : video
MPEG Stream Type : 27          Is PCR PID     : Yes
Cc Err Secs     : 0           TEI Err Secs   : 0
Absent Err Secs  : 0           PID Bitrate    : 1931136

Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 33          PID Type        : pmt
MPEG Stream Type : 0           Is PCR PID     : No
Cc Err Secs     : 0           TEI Err Secs   : 0
Absent Err Secs  : 16         PID Bitrate    : 0

Service Id       : 300         Interface Name   : video-300
Group Address    : 192.0.2.6   Source Address   : 10.20.13.2
PID              : 308         PID Type        : audio
    
```

```
MPEG Stream Type : 4           Is PCR PID       : No
Cc Err Secs      : 0           TEI Err Secs    : 0
Absent Err Secs  : 0           PID Bitrate     : 136864

Number of pids for this channel: 5
-----
Number of channels : 1
=====
*A:SR-12/Dut-C#
```

## channel

### Syntax

**channel all** [rt-client] [rt-server] [fcc-server] [ad-insert]

**channel grp-address** [source srcAddr] [rt-client] [rt-server] [fcc-server] [ad-insert]

### Context

[\[Tree\]](#) (clear>video>statistics>id channel)

### Full Context

clear video statistics id channel

### Description

This command clears video statistics for a particular channel.

### Parameters

#### **all**

Clears statistics for all channels.

#### **rt-client**

Clears all RET client related statistics.

#### **rt-server**

Clears all RET server related statistics.

#### **fcc-server**

Clears all FCC server related statistics.

#### **ad-insert**

Clears all ad insert related statistics.

#### **grp-address**

Clears statistics for the specified channel group address.

#### **source srcAddr**

Clears statistics for the specified source address.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s

## 6.23 charging-filter

### charging-filter

#### Syntax

**charging-filter** {*charging-filter-id* | **non-zero**}

#### Context

[\[Tree\]](#) (show>app-assure>group>policy charging-filter)

#### Full Context

show application-assurance group policy charging-filter

#### Description

This command displays information about the charging filter.

#### Parameters

*charging-filter-id*

Specifies the ID of an existing charging filter entry.

**Values** 1 to 65535

**non-zero**

Specifies to show all non-zero count entries.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the charging filter information, and [Table 72: Show AA group policy charging filter output fields](#) describes the fields.

```
show application-assurance group 1:0 policy charging-filter 1
```

#### Output Example

```
=====
Charging Filter Entry 1
=====
Description      : "Charging-filter entry for WhatsApp Video"
Admin State      : in-service
Charging Group   : "cgVideo100"
Hits             : 0 flows

Match :
  Application    : eq "Whats App"
  Flow Attribute : flow-attribute video confidence gte 100
```



Table 72: Show AA group policy charging filter output fields

Label	Description
Charging Filter Entry	The charging filter
Description	The description of the charging filter
Admin State	The administrative state of the filter
Charging Group	The charging group
Hits	The number of hits
Application	The matched application
Flow Attribute	The flow attribute used by the match criteria

## 6.24 charging-group

### charging-group

#### Syntax

**charging-group**  
**charging-group** *charging-group-name*

#### Context

[\[Tree\]](#) (show>app-assure>group>policy charging-group)

#### Full Context

show application-assurance group policy charging-group

#### Description

This command displays application-assurance policy application information.

#### Parameters

***charging-group-name***  
Specifies the application name, up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## charging-group

### Syntax

```
charging-group [charging-group-name] count [detail]  
charging-group count top granularity [max-count max-count]
```

### Context

[\[Tree\]](#) (show>app-assure>group>aa-sub charging-group)

### Full Context

```
show application-assurance group aa-sub charging-group
```

### Description

This command displays application-assurance group charging group information.

### Parameters

#### ***charging-group-name***

Specifies an existing charging group.

#### **count**

Displays the counters for the charging group.

#### **detail**

Displays detailed information.

#### **top**

Displays counters sorted by granularity.

#### ***granularity***

Specifies the granularity of the search.

**Values** octets, packets, flows

#### ***max-count***

Specifies the maximum flows to display.

**Values** 1 to 4294967295

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## charging-group

### Syntax

```
charging-group [charging-group-name] count
```

## Context

[\[Tree\]](#) (show>app-assure>group>aa-sub>um charging-group)

## Full Context

show application-assurance group aa-sub usage-monitor charging-group

## Description

This command displays usage monitor statistics for the charging group.

## Parameters

### *charging-group-name*

Specifies the charging group name, up to 32 characters.

### *count*

Displays counters for the charging group.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## charging-group

## Syntax

**charging-group** [*charging-group-name*] **count** [**detail**]

## Context

[\[Tree\]](#) (tools>dump>app-assure>group>aa-sub charging-group)

## Full Context

tools dump application-assurance group aa-sub charging-group

## Description

This command displays per-subscriber per-charging-group statistics.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.25 chassis

### chassis

#### Syntax

**chassis** [**environment**] [**ccm**] [**power-supply**] [*chassis-id*]

**chassis class** *chassis-class*

**chassis detail** [**class** *chassis-class*]

#### Context

[\[Tree\]](#) (show chassis)

#### Full Context

show chassis

#### Description

This command displays general status information about the chassis.

#### Parameters

##### *chassis-id*

Specifies the ID of the chassis.

##### *chassis-class*

Displays information related to the chassis of the specified class.

**Values** router or eth-sat

##### **environment**

Displays environmental status information about the chassis.

**Default** Displays all chassis information.

##### **power-supply**

Displays the status of the power supply in the chassis.

**Default** Displays all chassis information.

##### **detail**

Displays detailed information for all chassis in the system.

##### **ccm**

Displays chassis control module information for platforms that support CCMs.

#### Platforms

All

## Output

The following outputs are examples of chassis information, and [Table 73: Output fields: show chassis](#) describes the output fields.

- [Output example: show chassis \(showing 7750 SR\)](#)
- [Output example: show chassis environment](#)
- [Output example: show chassis power-supply \(showing 7750 SR-1\)](#)
- [Output example: show chassis ccm](#)
- [Output example: show chassis \(showing 7950 XRS\)](#)
- [Output example: show chassis detail \(showing 7950 XRS\)](#)
- [Output example: show chassis \(showing 7750 SR with Ethernet satellites configured\)](#)
- [Output example: show chassis \(showing the state of the Ethernet satellite compact flash\)](#)

### Output example: show chassis (showing 7750 SR)

```
A:PE-1# show chassis
=====
System Information
=====
Name                : PE-1
Type                : 7750 SR-12
Chassis Topology    : Standalone
Location            : (Not Specified)
Coordinates         : (Not Specified)
CLLI code           :
Number of slots     : 12
Oper number of slots : 12
Num of faceplate ports/connectors : 97
Num of physical ports : 97
Critical LED state  : Off
Major LED state     : Off
Minor LED state     : Off
Over Temperature state : OK
Base MAC address    : 10:e8:78:b8:21:47
Admin chassis mode  : d
Oper chassis mode   : d
Fabric Speed        : 10 Gig
FP Generations      : FP3
System Profile      : none
=====
Chassis Summary
=====
Chassis  Role          Status
-----
1          Standalone   up
=====
```

### Output example: show chassis environment

```
A:SR-12# show chassis environment
=====
Chassis 1 Detail
=====
Environment Information
Number of fan trays : 3
Number of fans      : 6
Fan tray number     : 1
```

```
Speed : 44 %  
Status : up  
Fan tray number : 2  
Speed : 44 %  
Status : up  
Fan tray number : 3  
Speed : 44 %  
Status : up  
=====
```

**Output example: show chassis power-supply (showing 7750 SR-1)**

```
A:ALA-4# show chassis power-supply  
=====  
Chassis 1 Detail  
=====  
Power Supply Information  
Number of power supplies      : 1  
  
Power supply number          : 1  
Power supply type            : dc multiple  
Power supply model           : pem  
Status1                      : present  
Input voltage 1              : 53.81 Volts  
Status2                      : failed  
Input voltage 2              : 0.00 Volts  
=====
```

**Output example: show chassis ccm**

```
A:7750-3# show chassis ccm  
=====  
Chassis Information  
=====  
Chassis Control Module (CCM) Information  
CCM number                   : 1  
Equipped                     : yes  
Type                         : ccm-xp  
  
Hardware Data  
Part number                  : Sim Part#  
CLEI code                   : Sim CLEI  
Serial number                : ccm-0  
Manufacture date             : 01012003  
Manufacturing string         : Sim MfgString ccm-0  
Manufacturing deviations     : Sim MfgDeviation ccm-0  
Administrative state         : up  
Operational state            : up  
Temperature                  : 32C  
Temperature threshold        : 75C  
Time of last boot            : N/A  
Current alarm state          : alarm cleared  
=====
```

**Output example: show chassis (showing 7950 XRS)**

```
*A:PE-1# show chassis  
=====  
System Information  
=====  
Name                         : PE-1  
Type                         : 7950 XRS-20
```

```

Chassis Topology      : Standalone
Location             : (Not Specified)
Coordinates          : (Not Specified)
CLLI code           :
Number of slots      : 24
Oper number of slots : 12
Num of faceplate ports/connectors : 314
Num of physical ports : 314
Critical LED state   : Off
Major LED state      : Off
Minor LED state      : Amber
Over Temperature state : OK
Base MAC address     : 24:af:4a:a3:ac:c5
FP Generations       : FP3
System Profile       : none
=====
Chassis Summary
=====
Chassis  Role          Status
-----
1         Standalone   up
=====
    
```

**Output example: show chassis detail (showing 7950 XRS)**

```

*A:PE-1# show chassis detail
=====
System Information
=====
Name                : PE-1
Type                : 7950 XRS-20
Chassis Topology    : Standalone
Location            : (Not Specified)
Coordinates         : (Not Specified)
CLLI code           :
Number of slots     : 24
Oper number of slots : 12
Num of faceplate ports/connectors : 314
Num of physical ports : 314
Critical LED state   : Off
Major LED state      : Off
Minor LED state      : Amber
Over Temperature state : OK
Base MAC address     : 24:af:4a:a3:ac:c5
FP Generations       : FP3
System Profile       : none
=====
Chassis 1 Detail
=====
Chassis Status      : up
Chassis Role        : Standalone
Hardware Data
  Part number        :
  CLEI code          :
  Serial number      : AME4-14
  Manufacture date   :
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number :
  Time of last boot  : 2017/10/23 12:29:41
  Current alarm state : alarm active
-----
Environment Information
Number of fan trays : 2
    
```

```
Number of fans                : 16

Fan tray number              : 1
  Speed                      : 38 %
  Status                     : up
  Hardware Data
    Part number              : 3HE07119AARB01
    CLEI code                : IPUCA9U1AA
    Serial number            : NS131062838
    Manufacture date         : 03212013
    Manufacturing deviations  : (Not Specified)
    Manufacturing assembly number : 82-0354-03
    Administrative state     : up
    Operational state        : up
    Time of last boot        : 2017/10/23 12:27:47
    Current alarm state      : alarm cleared
    Firmware revision status  : acceptable
  Hardware Resources (Power-Zone 1)
    Voltage
      Minimum                : 53.00 Volts (10/23/2017 12:30:28)
      Current                 : 53.00 Volts
      Peak                    : 54.00 Volts (10/23/2017 12:29:48)
    Wattage
      Minimum                : 106.00 Watts (10/23/2017 12:30:28)
      Current                 : 159.00 Watts
      Peak                    : 324.00 Watts (10/23/2017 12:29:48)
      Max Required           : 900.00 Watts
    Amperage
      Minimum                : 2.00 Amps (10/23/2017 12:29:56)
      Current                 : 3.00 Amps
      Peak                    : 6.00 Amps (10/23/2017 12:29:48)

Fan tray number              : 2
  Speed                      : 38 %
  Status                     : up
  Hardware Data
    Part number              : 3HE07119AARB01
    CLEI code                : IPUCA9U1AA
    Serial number            : NS152062365
    Manufacture date         : 05232015
    Manufacturing deviations  : (Not Specified)
    Manufacturing assembly number : 82-0354-03
    Administrative state     : up
    Operational state        : up
    Time of last boot        : 2017/10/23 12:27:25
    Current alarm state      : alarm cleared
    Firmware revision status  : acceptable
  Hardware Resources (Power-Zone 1)
    Voltage
      Minimum                : 52.00 Volts (10/23/2017 12:32:01)
      Current                 : 52.00 Volts
      Peak                    : 54.00 Volts (10/23/2017 12:29:54)
    Wattage
      Minimum                : 106.00 Watts (10/23/2017 12:30:05)
      Current                 : 156.00 Watts
      Peak                    : 371.00 Watts (10/23/2017 12:29:51)
      Max Required           : 900.00 Watts
    Amperage
      Minimum                : 2.00 Amps (10/23/2017 12:29:54)
      Current                 : 3.00 Amps
      Peak                    : 7.00 Amps (10/23/2017 12:29:51)

-----
Power Management Information
  Power Management Mode      : basic
```



```
Power Safety Level      : 100%
Power Safety Alert     : 0 watts
Number of PEQs        : 12

PEQ number             : 1
  PEQ Equipped Type    : apeq-dc-2000
  PEQ Provisioned Type : (Not Specified)
  Power-Zone           : 1
  Status               : up
  Input Feed Status    : input B down
  Input Power Mode     : N/A
  Hardware Data
    Part number        : 3HE07114AARA01
    CLEI code          : IPUPAJHUAA
    Serial number      : NS1250G0116
    Manufacture date   : 12202012
    Manufacturing deviations : (Not Specified)
    Manufacturing assembly number : 8205320107
    Administrative state : up
    Operational state  : unprovisioned
    Time of last boot  : 2017/10/23 12:27:33
    Current alarm state : alarm active
    Firmware revision status : acceptable

PEQ number             : 2
  PEQ Equipped Type    : apeq-dc-2000
  PEQ Provisioned Type : (Not Specified)
  Power-Zone           : 1
  Status               : up
  Input Feed Status    : input B down
  Input Power Mode     : N/A
  Hardware Data
    Part number        : 3HE07114AARA01
    CLEI code          : IPUPAJHUAA
    Serial number      : NS1249G0022
    Manufacture date   : 12202012
    Manufacturing deviations : (Not Specified)
    Manufacturing assembly number : 8205320107
    Administrative state : up
    Operational state  : unprovisioned
    Time of last boot  : 2017/10/23 12:27:26
    Current alarm state : alarm active
    Firmware revision status : acceptable

PEQ number             : 3
  PEQ Equipped Type    : apeq-dc-2000
  PEQ Provisioned Type : (Not Specified)
  Power-Zone           : 1
  Status               : up
  Input Feed Status    : input B down
  Input Power Mode     : N/A
  Hardware Data
    Part number        : 3HE07114AARA01
    CLEI code          : IPUPAJHUAA
    Serial number      : NS1250G0141
    Manufacture date   : 12202012
    Manufacturing deviations : (Not Specified)
    Manufacturing assembly number : 8205320107
    Administrative state : up
    Operational state  : unprovisioned
    Time of last boot  : 2017/10/23 12:27:31
    Current alarm state : alarm active
    Firmware revision status : acceptable
```

```
PEQ number : 4
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : (Not Specified)
Power-Zone : 1
Status : up
Input Feed Status : input B down
Input Power Mode : N/A
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1249G0201
  Manufacture date : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state : unprovisioned
  Time of last boot : 2017/10/23 12:27:26
  Current alarm state : alarm active
  Firmware revision status : acceptable

PEQ number : 5
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : (Not Specified)
Power-Zone : 1
Status : up
Input Feed Status : input B down
Input Power Mode : N/A
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1250G0123
  Manufacture date : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state : unprovisioned
  Time of last boot : 2017/10/23 12:27:32
  Current alarm state : alarm active
  Firmware revision status : acceptable

PEQ number : 6
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : (Not Specified)
Power-Zone : 1
Status : up
Input Feed Status : input B down
Input Power Mode : N/A
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1250G0061
  Manufacture date : 12182012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state : unprovisioned
  Time of last boot : 2017/10/23 12:27:34
  Current alarm state : alarm active
  Firmware revision status : acceptable

PEQ number : 7
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : (Not Specified)
Power-Zone : 1
```

```
Status : up
Input Feed Status : input B down
Input Power Mode : N/A
Hardware Data
  Part number : 3HE07114AARB01
  CLEI code : IPUPAJHUAA
  Serial number : NS13226A310
  Manufacture date : 06042013
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 82-0532-02
  Administrative state : up
  Operational state : unprovisioned
  Time of last boot : 2017/10/23 12:27:33
  Current alarm state : alarm active
  Firmware revision status : acceptable

PEQ number : 8
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : (Not Specified)
Power-Zone : 1
Status : up
Input Feed Status : input B down
Input Power Mode : N/A
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1250G0152
  Manufacture date : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state : unprovisioned
  Time of last boot : 2017/10/23 12:27:29
  Current alarm state : alarm active
  Firmware revision status : acceptable

PEQ number : 9
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : (Not Specified)
Power-Zone : 1
Status : up
Input Feed Status : input B down
Input Power Mode : N/A
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1250G0122
  Manufacture date : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state : unprovisioned
  Time of last boot : 2017/10/23 12:27:28
  Current alarm state : alarm active
  Firmware revision status : acceptable

PEQ number : 10
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : (Not Specified)
Power-Zone : 1
Status : up
Input Feed Status : input B down
Input Power Mode : N/A
Hardware Data
```

```
Part number           : 3HE07114AARA01
CLEI code             : IPUPAJHUAA
Serial number         : NS1250G0146
Manufacture date      : 12202012
Manufacturing deviations : (Not Specified)
Manufacturing assembly number : 8205320107
Administrative state   : up
Operational state     : unprovisioned
Time of last boot     : 2017/10/23 12:27:25
Current alarm state   : alarm active
Firmware revision status : acceptable

PEQ number            : 11
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : (Not Specified)
Power-Zone            : 1
Status                : up
Input Feed Status     : input B down
Input Power Mode      : N/A
Hardware Data
  Part number         : 3HE07114AARA01
  CLEI code           : IPUPAJHUAA
  Serial number       : NS1249G0202
  Manufacture date    : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state   : up
  Operational state     : unprovisioned
  Time of last boot     : 2017/10/23 12:27:30
  Current alarm state   : alarm active
  Firmware revision status : acceptable

PEQ number            : 12
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : (Not Specified)
Power-Zone            : 1
Status                : up
Input Feed Status     : input B down
Input Power Mode      : N/A
Hardware Data
  Part number         : 3HE07114AARA01
  CLEI code           : IPUPAJHUAA
  Serial number       : NS1250G0115
  Manufacture date    : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state   : up
  Operational state     : unprovisioned
  Time of last boot     : 2017/10/23 12:27:29
  Current alarm state   : alarm active
  Firmware revision status : acceptable
```

-----  
Chassis Control Module (CCM) Information

```
CCM Slot              : A
Equipped              : yes
Hardware Data
  Part number         : 82-0263-03
  CLEI code           :
  Serial number       : AQUA03-30
  Manufacture date    :
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number :
  Administrative state   : up
```

```

Operational state      : up
Temperature            : 45C
Temperature threshold  : 75C
Time of last boot     : N/A
Current alarm state    : alarm cleared
Hardware Resources (Power-Zone 1)
Voltage
  Minimum              : 51.67 Volts (10/23/2017 12:31:59)
  Current              : 51.67 Volts
  Peak                 : 52.68 Volts (10/23/2017 12:29:52)
Wattage
  Minimum              : 21.29 Watts (10/23/2017 12:30:20)
  Current              : 21.98 Watts
  Peak                 : 22.66 Watts (10/23/2017 12:29:50)
  Max Required         : 22.00 Watts
Amperage
  Minimum              : 0.41 Amps (10/23/2017 12:30:20)
  Current              : 0.43 Amps
  Peak                 : 0.43 Amps (10/23/2017 12:29:50)

CCM Slot               : B
Equipped               : yes
Hardware Data
  Part number          : 82-0263-03
  CLEI code            :
  Serial number        : AQUA03-10
  Manufacture date     :
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number :
  Administrative state : up
  Operational state    : up
  Temperature          : 44C
  Temperature threshold : 75C
  Time of last boot    : N/A
  Current alarm state  : alarm cleared
Hardware Resources (Power-Zone 1)
Voltage
  Minimum              : 51.63 Volts (10/23/2017 12:32:00)
  Current              : 51.63 Volts
  Peak                 : 52.59 Volts (10/23/2017 12:30:14)
Wattage
  Minimum              : 22.66 Watts (10/23/2017 12:30:40)
  Current              : 23.35 Watts
  Peak                 : 23.35 Watts (10/23/2017 12:30:14)
  Max Required         : 22.00 Watts
Amperage
  Minimum              : 0.45 Amps (10/23/2017 12:30:14)
  Current              : 0.46 Amps
  Peak                 : 0.46 Amps (10/23/2017 12:31:32)
=====

```

**Output example: show chassis (showing 7750 SR with Ethernet satellites configured)**

```

*A:PE-1# show chassis
=====
System Information
=====
Name           : PE-1
Type           : 7750 SR-12
Chassis Topology : Standalone
Location       : (Not Specified)
Coordinates    : (Not Specified)
CLLI code      :

```

```

Number of slots           : 12
Oper number of slots     : 12
Num of faceplate ports/connectors : 165
Num of physical ports    : 165
Critical LED state       : Off
Major LED state          : Off
Minor LED state          : Off
Over Temperature state   : OK
Base MAC address         : 10:e8:78:b8:21:47
Admin chassis mode      : d
Oper chassis mode       : d
Fabric Speed             : 10 Gig
FP Generations           : FP3
System Profile           : none
=====
Chassis Summary
=====
Chassis  Role                Status
-----
1        Standalone           up
esat-1   Ethernet Satellite       up
=====
    
```

**Output example: show chassis (showing the state of the Ethernet satellite compact flash)**

```

A:node-2# show chassis "esat-6"
=====
Chassis esat-6 Detail
=====
Chassis Status           : up
Chassis Role             : Ethernet Satellite
Hardware Data
  Part number            : 3HE10076ABRC01
  CLEI code              : IPMB900HRA
  Serial number          : NS1935C1681
  Manufacture date       : 08312019
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number :
  Temperature            : 53C
  Time of last boot      : 2024/06/19 13:20:57
  Current alarm state    : alarm cleared
-----
Environment Information
  Number of fan trays    : 1
  Fan tray number       : 1
  Speed                  : 49 %
  Status                 : up
-----
Power Supply Information
  Number of power supplies : 2
  Power supply number     : 1
  Power supply type       : ac single
  Status                  : up
  AC power                 : within range
  Hardware Data
  Part number            :
  CLEI code              :
  Serial number          :
  Power supply number     : 2
    
```

```

Power supply type      : none
Status                : not equipped
Hardware Data
  Part number         :
  CLEI code          :
  Serial number       :
-----
Flash Information

Flash                 : cf1
  Administrative State : up
  Operational state    : up
  Serial number        : AA00000000124358
  Firmware revision    : 1100
  Model number         : Flash 1
  Size                 : 1,964 MB
  Free space           : 1,897 MB
  Percent Used         : 3 %

Flash                 : cf2
  Administrative State : up
  Operational state    : up
  Serial number        : 246CT505S1063SC00645
  Firmware revision    : V2.23
  Model number         : SILICONSYSTEMS INC 256MB
  Size                 : 253,932 KB
  Free space           : 0 Bytes
  Percent Used         : 100 %
=====
    
```

Table 73: Output fields: show chassis

Label	Description
Name	The system name for the router
Type	The router model number
Chassis Topology	The inter-chassis topology mode in which the system is operating: <ul style="list-style-type: none"> <li>Standalone – indicates that the system is comprised of a single physical router chassis</li> <li>Extended (7950 XRS-40) on a 7950 XRS based system – indicates that two router chassis are connected together in a "back-to-back" topology with no additional switch fabric chassis. An extended chassis topology is comprised of two 7950 XRS-20 chassis and is also known as an 7950 XRS-40 system.</li> </ul>
Chassis Status	The status of the chassis
Chassis role	The chassis roles: Standalone – specifies the value for all non-7950 XRS SR OS systems and for 7950 XRS-20 standalone systems 7950 XRS-40 Master 7950 XRS-40 Extension
Location	The system location for the device

Label	Description
Coordinates	<p>A user-configurable string that indicates the Global Positioning System (GPS) coordinates for the location of the chassis</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• N 45 58 23, W 34 56 12</li> <li>• N37 37' 00 latitude, W122 22' 00 longitude</li> <li>• N36*39.246' W121*40.121'</li> </ul>
CLLI Code	The Common Language Location Identifier (CLLI) that uniquely identifies the geographic location of places and certain functional categories of equipment unique to the telecommunications industry
Number of slots	The number of slots in the 7450 ESS and 7750 SR chassis that are available for plug-in cards. The total number includes the IOM or CCM slot or slots and the CPM slots.
Number of ports	The total number of ports currently installed in this chassis. This count does not include the Ethernet ports on the CPMs or CCMs that are used for management access.
Oper Number of Slots	The number of slots in the 7950 XRS chassis that are available for XCM cards and CPM cards operating as the active or standby CPM. The operational number of slots can reach to 24 when the chassis topology is extended.
Critical LED state	The current state of the Critical LED in this chassis
Major LED state	The current state of the Major LED in this chassis
Minor LED state	The current state of the Minor LED in this chassis
Base MAC address	The base chassis Ethernet MAC address
FP Generations	Identifies the FP generations for cards in the system
System Profile	The scaling profile in use by the system
Over Temperature state	Indicates if there is currently an over temperature condition (OK = not currently over temp)
Admin chassis mode	The configured chassis mode (chassis mode D)
Oper chassis mode	The current chassis mode
Part number	The part number of the particular hardware assembly. In the <b>show chassis</b> output, the first section of Hardware Data output is for the chassis midplane.
CLEI code	The Common Language Equipment Code Identifier (CLEI) code of the particular hardware assembly
Serial number	The serial number of the particular hardware assembly
Manufacture date	The manufacture date of the particular hardware assembly



Label	Description
Manufacturing string	The factory inputted manufacturing text string for the particular hardware assembly
Manufacturing deviations	Additional manufacturing data
Manufacturing assembly number	Additional manufacturing data
Time of last boot	The date and time the most recent boot occurred
Current alarm state	The alarm conditions for the specific board
Number of fan trays	The total number of fan trays installed in this chassis
Number of fans	The total number of fans installed in this chassis
Fan tray number	The ID for each fan tray installed in the chassis
Fan tray type	The type of fan tray: <ul style="list-style-type: none"> <li>• Chassis – standard fan tray</li> <li>• PCM – dedicated to cooling PCMs in the 7950 XRS-20e Universal chassis</li> </ul>
Operational status	The current status of the fan tray
Speed	The speed of the fans as a percentage
Status	The current status of the particular hardware assembly (up, down, or not equipped)
Power Supply Information	
Number of power supplies	The number of power supplies in the chassis
Power supply number	The ID for each power supply installed in the chassis
Power supply type	The basic type of the power supply
Status	The power supply status
DC power	Indicates if the DC power is over the safe range
Over temp	Indicates if the power supply is over the safe temperature range
Power supply model	The model of the power supply
Input voltage	The input voltage for the specific power supply or power module. This field is only displayed for a subset of platforms.
CCM Slot	The identifier of the CCM (A or B)
Equipped	Indicates if the CCM is detected as physically present
Temperature	The current temperature detected by the particular hardware assembly

Label	Description
Temperature threshold	The temperature at which the particular hardware assembly considers an over temperature condition to exist
Part number	The CCM part number
CLEI code	The code used to identify the router
Serial number	The CCM serial number. Not user modifiable.
Manufacture date	The chassis manufacture date. Not user modifiable.
Manufacturing string	The factory-inputted manufacturing text string. Not user modifiable.
Administrative state	The administrative state of the card: <ul style="list-style-type: none"> <li>• Up — The card is administratively up</li> <li>• Down — The card is administratively down</li> </ul>
Operational state	The operational state of the card: <ul style="list-style-type: none"> <li>• Up — The card is operationally up</li> <li>• Down — The card is operationally down</li> </ul>
Temperature	The internal chassis temperature
Temperature threshold	The value above which the internal temperature must rise to indicate that the temperature is critical
Time of last boot	The date and time the most recent boot occurred
Current alarm state	The alarm conditions for the CCM
Flash Information	
Flash	The compact flash (CF) name
Administrative State	The administrative state of the CF: <ul style="list-style-type: none"> <li>• Up — The CF is administratively up</li> <li>• Down — The CF is administratively down</li> </ul>
Operational state	The operational state of the CF: <ul style="list-style-type: none"> <li>• Up — The CF is operationally up</li> <li>• Down — The CF is operationally down</li> </ul>
Serial number	The serial number of the CF
Firmware revision	The firmware revision
Model number	The model number of the CF
Size	The size of the CF

Label	Description
Free space	The free space available on the CF
Percent used	The percentage of the CF that has been used

## chassis

### Syntax

**chassis** [*phys-chassis-id*]

### Context

[\[Tree\]](#) (tools>perform chassis)

### Full Context

tools perform chassis

### Description

The following command performs chassis maintenance operations.

### Parameters

***phys-chassis-id***

The identifier of the physical chassis for the tools perform context.

**Values** 1

### Platforms

All

## chassis

### Syntax

**chassis**

### Context

[\[Tree\]](#) (clear chassis)

### Full Context

clear chassis

### Description

Commands in this context clear data for various pieces of equipment that sit in a chassis.

## Platforms

7750 SR-s

## chassis

## Syntax

chassis

## Context

[\[Tree\]](#) (show>mcast-mgmt chassis)

## Full Context

show mcast-management chassis

## Description

This command displays multicast path management chassis information.

## Platforms

7450 ESS, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-7/12/12e, 7750 SR-s, 7950 XRS, VSR

## 6.26 check-bp-eprom

## check-bp-eprom

## Syntax

check-bp-eprom

## Context

[\[Tree\]](#) (tools>perform>chassis check-bp-eprom)

## Full Context

tools perform chassis check-bp-eprom

## Description

This command checks the chassis BP EPROM. The function reads the EPROM and is corrected with one of the following:

- for each SEEP that is found to be acceptable or can be corrected:  
"BP eprom X: ok" with X = seep number
- for each SEEP that is found to be unacceptable and cannot be corrected:  
"BP eprom X: not ok"

## Platforms

All

## 6.27 class-forwarding-policy

### class-forwarding-policy

#### Syntax

**class-forwarding-policy** [*policy-name*]

#### Context

[\[Tree\]](#) (show>router>mpls class-forwarding-policy)

#### Full Context

show router mpls class-forwarding-policy

#### Description

This command displays the mapping of the Forwarding Classes (FCs) to the set IDs as well as the default set ID of the CBF policy. It also shows the number of MPLS LSPs that reference this CBF policy.

#### Parameters

##### *policy-name*

Specifies the name of the class-forwarding-policy, up to 256 characters and composed of printable, 7-bit ASCII characters excluding double quotes. If the string contains spaces, use double quotes to delimit the start and end of the string.

## Platforms

All

## Output

The following output is an example of class forwarding policy information.

### Output Example

```
*A:Dut-B>show>router# show router mpls class-forwarding-policy "policy1"
=====
MPLS Class Forwarding Policy Table
=====
Policy Name                Default Forwarding Class Set-id Ref
Set-Id                    be l2 af l1 h2 ef h1 nc Count
-----
policy1                    3      1 1 2 2 3 3 4 4 50
-----
No. of Forwarding Policies: 1
=====
```

## 6.28 classic-lsn-sub

### classic-lsn-sub

#### Syntax

**classic-lsn-sub** *router-instance* **ip-prefix** *ip-prefix/length*

**classic-lsn-sub** *router-instance* **ip-prefix** *ip-prefix/length* **subscriber-string**

#### Context

[\[Tree\]](#) (clear>nat classic-lsn-sub)

#### Full Context

clear nat classic-lsn-sub

#### Description

This command clears NAT mappings for classic LSN subscribers.

#### Parameters

##### ***router-instance***

Specifies the router instance, up to 32 characters.

##### ***ip-prefix/length***

Specifies the IP prefix and length.

**Values** ip-prefix: a.b.c.d (host bits must be 0)length: 0 to 32

##### **subscriber-string**

Clears subscriber string information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.29 clear

### clear

#### Syntax

**clear** *aps-id* {**protect** | **working**} [*number number*]

## Context

[\[Tree\]](#) (tools>perform>aps clear)

## Full Context

tools perform aps clear

## Description

This command removes all Automated Protection Switching (APS) operational commands.

## Parameters

### *aps-id*

This option clears a specific APS on un-bundled SONET/SDH ports.

Values	<i>aps-id</i>	<i>aps-group-id</i>
	aps	keyword
	group-id	1 to 128

### *protect*

This command clears a physical port that is acting as the protection circuit for the APS group.

### *working*

This command clears a physical port that is acting as the working circuit for this APS group.

### *number*

Specifies the APS channel number.

Values
1, 2

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

clear

## Syntax

**clear** *ring-index*

## Context

[\[Tree\]](#) (tools>perform>eth-ring clear)

## Full Context

tools perform eth-ring clear

## Description

The clear command, at the Ethernet Ring Node, is used for the following operations:

- Clearing an active local administrative command, such as a Forced Switch or Manual Switch
- Triggering reversion before the WTR or WTB timer expires in case of revertive operation
- Triggering reversion in case of non-reactive operation

## Parameters

### *ring-index*

Specifies an Ethernet Ring index.

**Values** 1 to 128

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## clear

## Syntax

**clear id** *tunnel-id*

**clear** *lsp-name*

## Context

[\[Tree\]](#) (tools>perform>router>mpls>tp-tunnel clear)

## Full Context

tools perform router mpls tp-tunnel clear

## Description

This command clears all the MPLS-TP linear protection operational commands for the specified LSP that are currently active.

## Parameters

### *tunnel-id*

Specifies the tunnel number of the MPLS-TP LSP.

**Values** 1 to 61440

### *lsp-name*

Specifies the name of the MPLS-TP LSP, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS



## clear

### Syntax

clear

### Context

[\[Tree\]](#) (clear)

### Full Context

clear

### Description

Commands in this context are used to clear specific statistics, reset specific hardware assemblies (for example, cards), and delete temporary operational state data (for example, contents of a log in memory).

### Platforms

All

## 6.30 clear-arp

## clear-arp

### Syntax

clear-arp [ip *ipv4-address*]

### Context

[\[Tree\]](#) (tools>perform>wlan-gw>lanext>bd clear-arp)

### Full Context

tools perform wlan-gw lanext bd clear-arp

### Description

This command clears all ARP table entries for the specified HLE BD or a specific entry if an IPv4 address is specified.

### Parameters

*ipv4-address*

Specifies the IPv4 address of the ARP table entry to be cleared.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.31 clear-force

### clear-force

#### Syntax

**clear-force all-mc**

**clear-force lag-id** *lag-id* [**sub-group** *sub-group-id*]

**clear-force peer-mc** *ip-address*

#### Context

[\[Tree\]](#) (tools>perform>lag clear-force)

#### Full Context

tools perform lag clear-force

#### Description

This command clears forced status.

#### Parameters

##### **all-mc**

Specifies all MC-LAGs.

##### **lag-id**

Specifies the LAG ID.

**Values** 1 to 800

##### **sub-group-id**

Specifies the subscriber group ID.

**Values** 1 to 16

##### **ip-address**

Specifies the peer MC IP address.

**Values** ipv4-address: a.b.c.d

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d, where x: [0 to FFFF]H and d: [0 to 255]D

## Platforms

All

## 6.32 clear-lockout-annexb

clear-lockout-annexb

### Syntax

**clear-lockout-annexb** *aps-id*

### Context

[\[Tree\]](#) (tools>perform>aps clear-lockout-annexb)

### Full Context

tools perform aps clear-lockout-annexb

### Description

This command clears lockout of the Annex B APS group.

### Parameters

***aps-id***

Specifies an APS ID.

#### Values

<i>aps-id</i>	<i>aps-group-id</i>
aps	keyword
group-id	1 to 128

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## 6.33 clear-mac

clear-mac

### Syntax

**clear-mac** [**mac** *ieee-address*]

## Context

[\[Tree\]](#) (tools>perform>wlan-gw>lanext>bd clear-mac)

## Full Context

tools perform wlan-gw lanext bd clear-mac

## Description

This command clears all MAC table entries for the specified HLE BD or a specific entry if a MAC address is specified.

## Parameters

*ieee-address*

Specifies the MAC address of the MAC table entry to be cleared.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.34 clear-neighbor

clear-neighbor

## Syntax

clear-neighbor [*ip6 ipv6-address*]

## Context

[\[Tree\]](#) (tools>perform>wlan-gw>lanext>bd clear-neighbor)

## Full Context

tools perform wlan-gw lanext bd clear-neighbor

## Description

This command clears all neighbor table entries for the specified HLE BD or a specific entry if an IPv6 address is specified.

## Parameters

*ipv6-address*

Specifies the IPv6 address of the neighbor table entry to be cleared.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.35 cli

cli

### Syntax

cli

### Context

[\[Tree\]](#) (show>log cli)

### Full Context

show log cli

### Description

Commands in this context display log information specific to CLI users (classic CLI or MD-CLI).

### Platforms

All

## 6.36 cli-session-group

cli-session-group

### Syntax

**cli-session-group** *session-group-name*

### Context

[\[Tree\]](#) (show>system>security cli-session-group)

### Full Context

show system security cli-session-group

### Description

This command displays the user profiles of this CLI session group and the session group details.

### Parameters

***session-group-name***

Specifies a session group, up to 32 characters.

## Platforms

All

## 6.37 client

client

### Syntax

**client all**

**client client-address** *ip-address*

### Context

[\[Tree\]](#) (show>test-oam>twamp client)

### Full Context

show test-oam twamp client

### Description

This command displays TWAMP client information.

### Parameters

***ip-address***

Specifies the IPv4 or IPv6 address of a client.

#### Values

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d
x:	[0 to FFFF]H
d:	[0 to 255]D

**all**

Displays all TWAMP client information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of TWAMP client information.

## Output Example

```
show test-oam twamp client all
=====
Test Session information for Client 6.6.6.6
=====
Index      : 1      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
-----
Index      : 2      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
-----
Number of Sessions: 2
=====
Test Session information for Client 10.10.10.10
=====
Index      : 1      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
-----
Index      : 2      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
-----
Index      : 3      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
-----
Number of Sessions: 3
=====
Test Session information for Client 1234:5678:90ab:cdef:1234:5678:90ab:cdef
=====
Index      : 1      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
-----
Number of Sessions: 1
=====

show test-oam twamp client 6.6.6.6
=====
Test Session information for Client 6.6.6.6
=====
Index      : 1      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
-----
Index      : 2      State      : Active
SID        : 16 byte hex field
Src Address : SourceIP      Src UDP Port : port
Dst Address : DestIP          Dst UDP Port : port
```

```
-----  
-----  
Number of Sessions: 2  
=====
```

## 6.38 client-db

### client-db

#### Syntax

```
client-db  
client-db db-name association  
client-db db-name client client-index  
client-db db-name
```

#### Context

[\[Tree\]](#) (show>ipsec client-db)

#### Full Context

```
show ipsec client-db
```

#### Description

This commands displays information for client databases. Using this command without any parameters will list all configured client database.

#### Parameters

##### *db-name*

Species to list all IPsec gateways that use the specified client database.

##### association

Displays information for which this client database is associated.

##### client *client-index*

Specifies the client index or client name of client entry in the client database.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the **show client-db** command.

#### Output Example

```
show ipsec client-db  
=====
```



```

IPsec Client Database
=====
Name                               Admin State  Match List
-----
test                               Up           idi peer-ip-prefix
-----
No. of entries: 1
=====
show ipsec client-db "test"
=====
IPsec Client Database "test"
=====
Description: (Not Specified)
Match List : idi peer-ip-prefix
Admin State: Up
-----
Database Client List
-----
Index      Name                               Admin State
-----
1          client-1                           Up
2          client-2                           Up
-----
No. of entries: 2
=====
    
```

## client-db

### Syntax

**client-db** *db-name* **lookup peer-ip** *peer-ip-address*

**client-db** *db-name* **lookup idi string-type** {fqdn | rfc822} *string-value* *string-value* [**peer-ip** *peer-ip-address*]

**client-db** *db-name* **lookup idi address** *idi-ip-address* [**peer-ip** *peer-ip-address*]

### Context

[\[Tree\]](#) (tools>perform>ipsec client-db)

### Full Context

tools perform ipsec client-db

### Description

This command performs a lookup in the specified client-db by using specified input and displays the matching result.

### Output Example

```

tools perform ipsec client-db "test" lookup idi string-type rfc822 string-
value client-1@examplebm.com peer-ip 10.10.10.100
Result          : 0k
Database       : test
Criterion - Ike Idi : RFC822 "client-1@examplebm.com"
Criterion - Peer IP : 10.10.10.100
Matched Record  : 1 "client-1"
    
```

```
Elapsed Time (us) : 2
```

### Parameters

#### ***db-name***

Specifies the name of the client-db.

#### **peer-ip *peer-ip-address***

Specifies the peer's tunnel IP address as input, either v4 or v6.

#### **string-type**

Specifies the peer's IDi as input.

**Values** fqdn, rfc822

#### ***idi-ip-address***

Specifies the peer's IDi of address type as input, either v4 or v6

#### **string-value *string-value***

Specifies the value of FQDN or RFC822 IDi.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.39 client-tls-profile

### client-tls-profile

#### Syntax

**client-tls-profile** [*client-tls-profile*]

**client-tls-profile** *client-tls-profile* **association**

#### Context

[\[Tree\]](#) (show system security tls client-tls-profile)

#### Full Context

show system security tls client-tls-profile

#### Description

This command displays TLS client profile information

#### Parameters

##### ***client-tls-profile***

Specifies the client TLS profile, up to 32 characters.

## Platforms

All

## Output

The following output is an example of TLS client profile information.

### Output Example

```
*A:Dut-C> show system security tls client-tls-profile
=====
Client Profile Information
=====
Name                               AdminState  OperState
-----
ctp                                 up          up
ctp-alt1                           up          up
ctp-alt2                           up          up
=====

*A:Dut-C> show system security tls client-tls-profile "ctp"
=====
Client Profile Entry "ctp"
=====
Cipher List Name                   : cl_all
Trust Anchor Profile Name          : tap
=====
```

## 6.40 clock-recovery

### clock-recovery

#### Syntax

**clock-recovery**

#### Context

[\[Tree\]](#) (clear>system>ptp clock-recovery)

#### Full Context

clear system ptp clock-recovery

#### Description

This command resets the PTP recovery algorithm.

The algorithms involved in PTP frequency and time recovery are reset to the initial conditions. This command clears any previous history and can be used to ensure a consistent starting state for a test or can be used to clear any unexpected behaviour in the algorithm.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 6.41 coa

### coa

#### Syntax

```
coa [nas-port-id attr-string] [framed-ip-addr ip-address] [alc-ipv6-addr ipv6-address] [delegated-ipv6-  
pfx ipv6-prefix[/ipv6-prefix-length]] [framed-ipv6-pfx ipv6-prefix [/ipv6-prefix-length]] [alc-serv-id serv-  
id] [acct-session-id attr-string] [alc-subscr-id attr-string] [alc-brg-id attr-string] [user-name attr-string]  
[alc-client-hw-addr mac-address] [attr attribute [attribute]] [attr-from-file file-ur] [from-server attr-  
string] [router-or-service attr-string] [debug]
```

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt coa)

#### Full Context

tools perform subscriber-mgmt coa

#### Description

This command triggers a Change of Authorization (CoA) without a RADIUS authentication policy.

This command can be used to spoof a CoA from a configured server for purposes such as testing CoA python scripts. However, spoofing a CoA from a RADIUS server requires the configuration of a RADIUS authentication policy.

#### Parameters

##### **nas-port-id** *attr-string*

Specifies the physical access circuit of the NAS up to 253 characters.

##### **ip-address**

Specifies the IPv4 host address.

##### Values

*ipv4-address:* a.b.c.d

##### **ipv6-address**

Specifies the IPv6 host address.

##### Values

*ipv6-address:* x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x - [0 to FFFF]H

d - [0 to 255]D

***ipv6-prefix[/ipv6-prefix-length]***

Specifies the IPv6 PD host prefix.

Values		
	<i>ipv6-prefix:</i>	x:x:x:x:x:x:x (eight 16-bit pieces)
	<i>ipv6-prefix-length</i>	[0 to 128]

***ipv6-prefix[/ipv6-prefix-length]***

Specifies the IPv6 SLAAC host prefix.

Values		
	<i>ipv6-prefix:</i>	x:x:x:x:x:x:x (eight 16-bit pieces)
	<i>ipv6-prefix-length</i>	[0 to 128]

***serv-id***

Specifies the service ID of the LNS subscriber.

**Values** 0 to 4294967295

***acct-session-id attr-string***

Specifies the subscriber accounting session ID up to 22 characters.

***alc-subscr-id attr-string***

Specifies the subscriber ID up to 32 characters.

***alc-brg-id attr-string***

Specifies the BRG ID to a maximum of 32 characters.

***user-name attr-string***

Specifies the string matching RADIUS VSA [1] username associated to the host(s), up to 32 characters.

***mac-address***

Specifies the subscriber host MAC address in the form: xx:xx:xx:xx:xx:xx.

***attribute***

Specifies the attributes (RADIUS VSAs) for override. The VSA must be specified in number format. For example, VSA Alc-Subscr-Prof-Str="1M-prof" is expressed as 6527.12 ="1M-prof". Up to five attributes can be specified within this command.

For more information on VSAs, refer to the *7750 SR and VSR RADIUS Attributes Reference Guide*.

Values	
	<type>=<value>
	<type>:<tag>=<value>

<vendor>, <type>=<value>  
 e, <type>, <exttyp>=<value> (type=[241| 242| 243| 244])  
 le, <type>, <exttyp>=<value> (type=[245| 246])  
 evs, <type>, <vendor>, <vendor-type>=<value>  
 levs, <type>, <vendor>, <vendor-type>=<value>

**file-url**

Specifies the file URL where the VSAs are located.

<b>Values</b>		
<i>local-url</i>	[ <i>cflash-id</i> ] [ <i>file-path</i> ] (up to 200 characters including the cflash-id directory length of up to 99 characters each)	
<i>remote-url</i>	[{ <b>ftp://</b>   <b>ftfp://</b> } <i>login:pswd@remote-locn</i> ][ <i>file-path</i> ] (up to 255 characters with the directory length of up to 99 characters each)	
<i>remote-locn</i>	[ <i>hostname</i>   <i>ipv4-address</i>   <i>ipv6-address</i> ]	
<i>ipv4-address</i> :	a.b.c.d	
<i>ipv6-address</i> :	x:x:x:x:x:x:x [- <i>interface</i> ] x:x:x:x:x:d.d.d.d[- <i>interface</i> ] x - [0 to FFFF]H d - [0 to 255]D <i>interface</i> - Specifies the link local addresses, up to 32 characters	
<i>cflash-id</i>	cf1:   cf1-A:   cf1-B:   cf2:   cf2-A:   cf2-B:   cf3:   cf3-A:   cf3-B:	

**attr-string**

Specifies the RADIUS server name that is configured under the router or VPRN service context, up to 32 characters.

**attr-string**

Specifies the router or VPRN service instance where the RADIUS server is configured, up to 32 characters.

**debug**

Displays the debug message associated with the CoA command.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management CoA tools information.

### Output Example

```
Node# tools perform subscriber-mgmt coa alc-subscr-id subscriber-01 attr 6527,13=new-sla-prof
debug
=====
Inject Change-of-Authorization
=====
SUCCESS: got ACK
Change of Authorization(43) id 0 len 50 from 0.0.0.0:3799 vrid 1
  VSA [26] 8 Nokia (6527)
    SUBSC ID STR [11] 6 subscriber-01
  VSA [26] 10 Nokia (6527)
    SLA PROF STR [13] 8 new-sla-prof
Hex Packet Dump:
1a 0e 00 00 19 7f 0b 08 77 69 66 69 2d 31 1a 10 00 00 19 7f 0d 0a 73 6c 61
2d 70 72 6f 66
Change of Authorization Ack(44) 0.0.0.0:3799 id 0 len 20 vrid 1
Hex Packet Dump:
```

## 6.42 coa-statistics

### coa-statistics

#### Syntax

**coa-statistics**

#### Context

[\[Tree\]](#) (clear>subscr-mgmt>authentication coa-statistics)

#### Full Context

clear subscriber-mgmt authentication coa-statistics

#### Description

This command clears RADIUS CoA statistics.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 6.43 collect-lmm-fc-stats

### collect-lmm-fc-stats

#### Syntax

```
collect-lmm-fc-stats [{sap {sap-id | all} | sdp {sdp-id | all} | interface {interface-name | all}}]
```

#### Context

[\[Tree\]](#) (show>eth-cfm collect-lmm-fc-stats)

#### Full Context

```
show eth-cfm collect-lmm-fc-stats
```

#### Description

This command displays the entities that are configured with per-FC LMM counters, and whether those counters are counting in-profile packets only or all countable packets.

Each entity may have up to eight individual FC-based counters. Each FC includes a positional index value (1 to 8) under the FC that is counting. A "P" indicates that the index is only counting in-profile traffic.

When no display filters are applied, this command displays all entities and the individual FC counters. Optional filters help to reduce the output that is visible to the operator.

#### Parameters

##### *sap-id*

Specifies a SAP entity for which to display active individual FC counters.

Values		
null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>	
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i> :[qtag1]   <i>cp-conn-prof-id</i>	
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i> :[qtag1]   <b>cp-conn-prof-id</b> .[qtag2]   <b>cp-conn-prof-id</b>	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>	
ima-grp	<i>bundle-id</i> [:vpi/vci   vpi   vpi1.vpi2]   <b>cp.conn-prof-id</b>	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port</i> [.channel]   <i>esat-id/slot/port</i>	



	<b>pxc-id.sub-port</b>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
ccag-id	<b>ccag-id.path-id</b> [ <i>cc-type</i> ]: <i>cc-id</i>	
	<b>ccag</b>	keyword
	<i>id</i>	1 to 8
	<i>path-id</i>	a   b
	<i>cc-type</i>	.sap-net   .net-sap
	<i>cc-id</i>	1 to 4094
eth-tunnel	<b>eth-tunnel-id</b> [: <i>eth-tun-sap-id</i> ]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 10239
qtag1	*   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private</b>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094

**sdp-id**

Specifies an SDP entity for which to display active individual FC counters.

**Values** *sdp-id* — 1 to 32767  
*vc-id* — 1 to 4294967295

**interface-name**

Specifies an interface entity for which to display active individual FC counters, up to 32 characters maximum.

**all**

Keyword to display all SAP, SDP, and interface entities, and the associated active individual FC counters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output example shows information about entities that are configured with per-FC counters.

**Output Example**

```
A:node-2# show eth-cfm collect-lmm-fc-stats
=====
The FC to priority bit mapping for collect-lmm-fc-stats is as follows:
NC = 7, H1 = 6, EF = 5, H2 = 4, L1 = 3, AF = 2, L2 = 1, BE = 0

The number below each FC column indicates which counter index PDUs matching
that FC will be counted in. Entries with a "P" beside the number indicate
that only in-profile traffic is being counted. Entries without a "P" are not
profile aware and count all PDUs associated with that FC.

=====
ETH-CFM SAPs Configured to Collect Per-FC LMM Statistics
=====
Sap                SvcId            BE L2 AF L1 H2 EF H1 NC
-----
1/1/1:100          2147483647      1 2P 3 4 5      8P
-----
No. of SAPs: 1
=====

=====
ETH-CFM SDPs Configured to Collect Per-FC LMM Statistics
=====
SdpId              SvcId            BE L2 AF L1 H2 EF H1 NC
-----
500:500            2147483647      1 2      4P 5P 6
-----
No. of SDPs: 1
=====

=====
ETH-CFM Facility Interface MEPs Configured to Collect Per-FC LMM Statistics
=====
Interface          Md-index  Ma-index  MepId  BE L2 AF L1 H2 EF H1 NC
-----
md-admin-name
ma-admin-name
-----
No. of Facility Interface MEPs: 1
=====
```

## 6.44 collect-lmm-stats

### collect-lmm-stats

#### Syntax

**collect-lmm-stats**

#### Context

[\[Tree\]](#) (show>eth-cfm collect-lmm-stats)

#### Full Context

show eth-cfm collect-lmm-stats

#### Description

This command displays the entities that are configured with a single LMM counter using the format of the ETH-CFM stack table.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of LMM counter information.

#### Output Example

```
show eth-cfm collect-lmm-stats

=====
ETH-CFM SAPs Configured to Collect LMM Statistics
=====
SapId                               SvcId
-----
No. of SAPs: 0
=====

=====
ETH-CFM SDPs Configured to Collect LMM Statistics
=====
SdpId           SvcId      Type      Far End
-----
No. of SDPs: 0
=====

=====
CFM Stack Table Defect Legend:
R = Rdi, M = MacStatus, C = RemoteCCM, E = ErrorCCM, X = XconCCM
A = AisRx, L = CSF LOS Rx, F = CSF AIS/FDI rx, r = CSF RDI rx
G = receiving grace PDU (MCC-ED or VSM) from at least one peer
```

```

=====
CFM Facility Port Stack Table
=====
Port      Tunnel   Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM Facility LAG Stack Table
=====
Lag       Tunnel   Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
name
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM Facility Tunnel Stack Table
=====
Port/Lag Tunnel   Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====

=====
CFM Facility Interface Stack Table
=====
Interface      Lvl Dir Md-index  Ma-index  MepId  Mac-address  Defect G
  md-admin-name
  ma-admin-name
-----
No Matching Entries
=====
    
```

## collect-lmm-stats

### Syntax

**collect-lmm-stats** [*sdp-id[:vc-id]*]

### Context

[\[Tree\]](#) (show>service>sdp-using>eth-cfm collect-lmm-stats)

### Full Context

show service sdp-using eth-cfm collect-lmm-stats

### Description

This command displays SDP bindings which are configured to collect statistics for LMM tests.

## Parameters

***sdp-id[:vc-id]***

Specifies the SDP ID and virtual circuit ID on the SDP ID.

**Values**    sdp-id: 1 to 32767  
              vc-id: 1 to 4294967295

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 6.45 collector

collector

### Syntax

**collector** [**detail**]

### Context

[\[Tree\]](#) (show>app-assure>group>cflowd collector)

### Full Context

show application-assurance group cflowd collector

### Description

Commands in this context display cflowd output.

### Parameters

**detail**

Displays detailed information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of the **collector** command information.

### Output Example

```
A:ALU-A# show application-assurance group 1 cflowd collector
=====
Application Assurance Cflowd Collectors for group 1
=====
Host Address      Port  Version  Admin   Oper    Recs Sent
-----
```

```
192.168.7.7      2055  10    up    up    0
192.168.7.8      2055  10    up    up    0
-----
Collectors : 2
-----
A:ALU-A#
A:ALU-A# show application-assurance group 1 cflowd collector detail
=====
Application Assurance Cflowd Collectors for group 1
=====
Address          : 192.168.7.7
Port             : 2055
Description      : AA Collector 1
Version          : 10
Admin State      : up
Oper State       : up
Records Sent     : 0
Last Changed    : 07/27/2009 13:36:50

Address          : 192.168.7.8
Port             : 2055
Description      : AA Collector 2
Version          : 10
Admin State      : up
Oper State       : up
Records Sent     : 0
Last Changed    : 07/27/2009 13:37:10
=====
A:ALU-A#
```

## collector

### Syntax

**collector** *collector-id*

### Context

[\[Tree\]](#) (show>app-assure>group>cflowd>dir-exp collector)

### Full Context

show application-assurance group cflowd direct-export collector

### Description

Commands in this context display cflowd direct-export collector output.

### Parameters

***collector-id***

Specifies the ID of the cflowd direct export collector.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **collector** command information.

### Output Example

```
A:Sim# show application-assurance group 1 cflowd direct-export collector 1
=====
Application Assurance Group 1 Cflowd Direct-Export Collector 1
=====
Collector Status : Inactive
VLAN Id         : N/A
Cflowd Version  : 10
Admin State     : down
Description     : (Not Specified)
-----
Host Address           Port      Admin   Oper      Records Sent
-----
192.168.2.1           4739     DOWN   DOWN      0
192.168.2.2           4739     down   down      0
-----
No. of Cflowd Direct Export Collector Addresses: 2
=====
Application Assurance Group 1 Cflowd Collectors
Collector Status      : Active
=====
Address       : 192.168.2.1
Port         : 4739
Description  :
Version      : 10
Admin State  : down
Oper State   : down
Records Sent : 5400
Last Changed : 08/12/2015 19:12:28
Address      : 192.168.2.2
Port         : 4739
Description  :
Version      : 10
Admin State  : down
Oper State   : down
Records Sent : 5400
Last Changed : 08/12/2015 19:12:35
=====
status [isa <slot/mda>] cflowd
```

## collector

### Syntax

**collector** [*ip-address[:port]*] [*detail*]

### Context

[\[Tree\]](#) (show>cflowd collector)

### Full Context

show cflowd collector

## Description

This command displays administrative and operational status of data collector configuration.

## Parameters

### *ip-address*

Displays information only about the specified collector IP address.

**Default** all collectors

### *:port*

Displays information only about the collector on the specified UDP port.

**Default** all UDP ports

**Values** 1 to 65535

### *detail*

Displays details about either all collectors or the specified collector.

## Platforms

All

## Output

**cflowd Collector Output** —The following output is an example of cflowd Collector information, and [Table 74: Show cflowd Collector Output Fields](#) describes the output fields.

```
A:R51-CfmA# show cflowd collector

=====
Cflowd Collectors
=====
Host Address   Port  Version  AS Type  Admin  Oper      Sent
-----
138.120.135.103 2055  v5       peer    up     up        1380 records
138.120.135.103 9555  v8       origin  up     up         90 records
138.120.135.103 9996  v9       -       up     up         0 packets
138.120.214.224 2055  v5       origin  up     up        1380 records
-----
Collectors : 4
=====
```

Table 74: Show cflowd Collector Output Fields

Label	Description
Host Address	The IP address of a remote cflowd collector host to receive the exported cflowd data
Port	The UDP port number on the remote cflowd collector host to receive the exported cflowd data
AS Type	The style of AS reporting used in the exported flow data



Label	Description
	origin — reflects the endpoints of the AS path which the flow is following
	peer — reflects the AS of the previous and next hops for the flow
Version	Specifies the configured version for the associated collector
Admin	The desired administrative state for this cflowd remote collector host
Oper	The current operational status of this cflowd remote collector host
Recs Sent	The number of cflowd records that have been transmitted to this remote collector host
Collectors	The total number of collectors using this IP address

**cflowd Collector Detail Output** —The following output is an example of cflowd Collector information, and [Table 75: Show cflowd Collector Detailed Output Fields](#) describes the output fields.

**Output Example**

```
A:R51-CfmA# show cflowd collector detail
=====
Cflowd Collectors (detail)
=====
Address           : 138.120.135.103
Port              : 2055
Description       : Test v5 Collector
Version          : 5
AS Type           : peer
Admin State       : up
Oper State        : up
Records Sent      : 1260
Last Changed      : 09/03/2009 17:24:04
Last Pkt Sent     : 09/03/2009 18:07:10
-----
                                     Sent      Open      Errors
-----
                                     42        0         0
=====
Address           : 138.120.135.103
Port              : 9555
Description       : Test v8 Collector
Version          : 8
AS Type           : origin
Admin State       : up
Oper State        : up
Records Sent      : 82
Last Changed      : 09/03/2009 17:24:04
Last Pkt Sent     : 09/03/2009 18:06:41
-----
Aggregation Type   Status      Sent      Open      Errors
-----
as-matrix           Disabled    0         0         0
protocol-port       Disabled    0         0         0
```

```

source-prefix      Enabled      21      0      0
destination-prefix Enabled      21      0      0
source-destination-prefix Disabled    0      0      0
raw               Disabled    0      0      0
=====
Address           : 138.120.135.103
Port             : 9996
Description      : Test v9 Collector
Version          : 9
Admin State      : up
Oper State       : up
Packets Sent     : 51
Last Changed     : 09/03/2009 17:24:04
Last Pkt Sent    : 09/03/2009 18:07:10
Template Set     : Basic
-----
Traffic Type      Template Sent      Sent      Open      Errors
-----
IPv4              09/03/2009 18:07:29 51        1        0
MPLS              No template sent   0         0        0
IPv6              No template sent   0         0        0
=====
A:R51-CfmA#
    
```

Table 75: Show cflowd Collector Detailed Output Fields

Label	Description
Address	The IP address of a remote cflowd collector host to receive the exported cflowd data
Port	The UDP port number on the remote cflowd collector host to receive the exported cflowd data
Description	A user-provided descriptive string for this cflowd remote collector host
Version	The version of the flow data sent to the collector
AS Type	The style of AS reporting used in the exported flow data
	origin — reflects the endpoints of the AS path which the flow is following
	peer — reflects the AS of the previous and next hops for the flow
Admin State	The desired administrative state for this cflowd remote collector host
Oper State	The current operational status of this cflowd remote collector host
Records Sent	The number of cflowd records that have been transmitted to this remote collector host
Last Changed	The time when this row entry was last changed

Label	Description
Last Pkt Sent	The time when the last cflowd packet was sent to this remote collector host
Aggregation Type	The bit mask which specifies the aggregation schemes used to aggregate multiple individual flows into an aggregated flow for export to this remote host collector
	none — no data will be exported for this remote collector host
	raw — flow data is exported without aggregation in version 5 format
	All other aggregation types use version 8 format to export the flow data to this remote host collector
Collectors	The total number of collectors using this IP address
Sent	The number of packets with flow data sent to the associated collector
Open	This counter shows the number of partially filled packets which have some flow data but are not yet filled or have been timed out (60 seconds maximum)
Error	This counter increments when there was an error during exporting of the collector packet; the most common reason will be a UDP unreachable destination for the configured collector

## 6.46 commit-history

### commit-history

#### Syntax

**commit-history**

**commit-history** [*keyword*] [**commit-id** *number*]

#### Context

[\[Tree\]](#) (show>system>management-interface commit-history)

#### Full Context

show system management-interface commit-history

## Description

This command displays the history of configuration changes that were committed in model-driven interfaces. A separate history of the last commits is maintained for each configuration region (bof, configure, debug, and LI). Each commit is uniquely identified by a numerical sequential incrementing commit ID assigned by the system.

When a gNMI, NETCONF, or MD-CLI Set request starts a commit transaction, an entry, including the persist ID and rollback duration, displays in the router commit history. When the system confirms the commit, the commit history displays the confirmation or, if the commit is not confirmed and the rollback duration expires, the commit history displays a rollback entry.



### Note:

This command is not available in the classic CLI.

## Parameters

### *keyword*

Specifies the configuration region to display.

**Values** bof, configure, debug, li

**Default** configure

### *number*

Specifies the commit history ID to display.

**Values** 1 to 4294967295

## Platforms

All

## Output

The following output is an example of commit history information, and [Table 76: Show Commit History Output Fields](#) describes the commit history output fields.

### Output Example

```
A:admin@node-2# show system management-interface commit-history
=====
Commit History
=====
Total Commits : 6

6
  Committed 2024-05-24T20:37:09.1+00:00 by system (System) from Console
  Log       "Confirmed commit timeout, automatic rollback of commit ID 5."
  Location  "Configuration is not saved to startup."
5
  Committed 2024-05-24T20:31:06.4+00:00 by admin (gNMI) from 200::
  Log       "Confirmed commit (persist ID 123), rollback in 10 minutes."
  Location  "Configuration is not saved to startup."
4
  Committed 2022-02-01T11:13:38.7-05:00 by admin (NETCONF) from 10.1.236.68
  Comment   "Fourth commit with NETCONF."
  Location  "cf3:\config.cfg"
```

```

3
  Committed 2022-02-01T11:01:03.8-05:00 by admin (MD-CLI) from 10.1.145.205
  Comment   "Third commit with the MD-CLI."
  Location  "cf3:\config.cfg.1"
2
  Committed 2022-02-01T11:00:47.7-05:00 by admin (MD-CLI) from 10.1.145.205
  Comment   "Second commit with the MD-CLI."
  Location  "cf3:\config.cfg.2"
1
  Committed 2022-02-01T10:56:01.3-05:00 by system (MD-CLI) from Console
  Log       "System booted version B-22.2.R1."
  Location  "Configuration is not saved to startup."
    
```

Table 76: Show Commit History Output Fields

Label	Description
Commit ID	Displays the commit ID.
Committed	Displays the date and time when the commit completed.
By	Displays the user and interface type that committed.
From	Displays the origin of the commit operation.
Comment	Displays the comment added by the user.
Log	Displays the log added by the system.
Increment	Displays the incremental saved configuration file location.
Location	Displays the complete saved configuration file location.

## 6.47 community

### community

#### Syntax

**community** *community-string*

#### Context

[\[Tree\]](#) (show>system>security>snmp community)

#### Full Context

show system security snmp community

## Description

This command lists SNMP communities and characteristics. Including the *community-name* parameter modifies the output to include all details for the specified community, including the source IP address list and validation failure counters.

## Platforms

All

## Output

The following output is an example of SNMP community information.

[Table 77: Show Community Output Fields](#) describes the community output fields.

## Output Example



### Note:

The system-created communities that begin with "cli-" are only used for internal CLI management purposes and are not exposed to external SNMP access.

```
A:ALA-1# show system security snmp community
=====
Communities
=====
community      access  view          version  group name
-----
cli-li-readwrite  n/a    li-view      v2c     cli-li-readwrite
cli-readonly     r      iso          v2c     cli-readonly
cli-readwrite    rw     iso          v2c     cli-readwrite
my-privatel     rw     iso          v1 v2c  snmp-rwa
my-public2      r      no-security  v1 v2c  snmp-ro
test-123        rwa   n/a          v2c     snmp-trap
-----
No. of Communities: 6
=====
A:ALA-1#

A:ALA-1# show system security snmp community "my-public2"
=====
Communities
=====
community      access  view          version  group name
-----
my-public2     r      no-security  v1 v2c  snmp-ro
              my-list1
              5
=====
A:ALA-1#
```

Table 77: Show Community Output Fields

Label	Description
Community	Displays the community string name for SNMPv1 and SNMPv2c access only.

Label	Description
Access	Displays access information. r — The community string allows read-only access. rw — The community string allows read-write access. rwa — The community string allows read-write access. mgmt — The unique SNMP community string assigned to the management router. vpls-mgmt — The unique SNMP community string assigned for vpls management.
View	Displays the view name.
Version	Displays the SNMP version.
Group Name	Displays the access group name.
src-access-list	Displays the name of the list of source IP addresses that are allowed to use the community, as configured using the <b>community</b> configuration command.
authFailures	Displays the number of SNMP requests that have failed validation using this <b>community</b> .
No of Communities	Displays the total number of configured community strings.

## community

### Syntax

**community** *comm-id* {**detail** | **longer**}

**community** *comm-id*

**community** *comm-id* **hunt**

### Context

[\[Tree\]](#) (show>router>bgp>routes community)

### Full Context

show router bgp routes community

### Description

This command displays BGP routes with routes with a community value matching the specified value.

**community** is a parameter of the **show router bgp routes** command. Depending on the parameters that are used to issue the command, the output can display a narrower or wider set of routes, including routes belonging to other address families. See the **show router bgp routes** command description for syntax variants, parameter descriptions and values, and output examples.

## Parameters

### *comm-id*

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:

- *{target | origin}:ip-address:comm-val*
- *{target | origin}:asnum:ext-comm-val*
- *{target | origin}:ext-asnum:comm-val*
- **bandwidth:asnum:val-in-mbps**
- **ext:4300:ovstate**
- **ext:value1:value2**
- **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **hunt**

Displays entries for the specified route.



## Platforms

All

## 6.48 completed

completed

### Syntax

**completed** [*script-policy-name*] [**owner** *owner-name*]

### Context

[\[Tree\]](#) (clear>system>script-control>script-policy completed)

### Full Context

clear system script-control script-policy completed

### Description

This command clears completed script run history entries.

### Parameters

#### ***script-policy-name***

Specifies to only clear history entries for the specified script-policy. 32 characters maximum.

#### ***owner-name***

Specifies to only clear history entries for script-policies with the specified owner. 32 characters maximum.

**Default** TiMOS CLI

## Platforms

All

## 6.49 comprehensive

comprehensive

### Syntax

**comprehensive fields**

## Context

[\[Tree\]](#) (show>app-assure>cflowd comprehensive)

## Full Context

show application-assurance cflowd comprehensive

## Description

This command displays the fields in the AA cflowd comprehensive template.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of AA cflowd comprehensive template fields, and [Table 78: Show Comprehensive Template Output Fields](#) describes the output fields.

### Output Example

```
show application-assurance cflowd comprehensive fields

=====
Fields for Application Assurance cflowd comprehensive template
=====
Name                               ID      Len Mode Dy Description
-----
aaApp                               32770  32 MRVL * AA Application
aaAppGrp                            32771  32 MRVL * AA Application Group
aaChargingGrp                       32888  32 MRVL * AA Charging Group
aaProt                              32769  32 MRVL * AA Protocol
aaSubTetheringState                 32896   1 MRVL * AA subscriber tethering
state
aaSubType                           32780   1 MRVL . AA Subscriber Type
aaSystemName                        32970  32 -R- * system name
anlCongestionState                  32874   1 MRVL * access network location
congestion state
anlTopology                         32873  16 MRVL * access network location
topology
anlType                             32872   1 MRVL * access network location
type
apn                                 32876  33 MRV- * access point name
apnExtended                         32928  64 MRV- * extended access point name
bsid                                32883  12 MRV- * base station id
cellId                              32886   4 MRV- * cell id
cellIdExt                          32971   5 -R- * cell id or 5G NR CGI
chargeId                            32877   4 MRV- * charging group id
chargeVolumeIpBytes                 32943   8 MR-- * Charging volume bytes
chargingChar                        32901   2 MRV- * 3GPP charging
characteristic
chargingRatingGrp                   32921   4 M--- * online/offline charging
rating group
chargingServiceId                   32929   4 M--- * online/offline charging
service-id
customerId                          32902   4 M--- * Customer identifier
destinationIPv4Address              12     4 MRVL . Destination IPv4 address
destinationIPv6Address              28     16 MRVL . Destination IPv6 address
destinationTransportPort            11     2 MRVL . Destination transport port
deviceId                            32865   2 MRVL * device ID
```

deviceMfgId	32866	2	MRVL	*	device manufacturer ID
deviceOsId	32867	2	MRVL	*	device operating system ID
deviceOsVer1	32869	1	MRVL	*	device operating system version number 1
deviceOsVer2	32870	1	MRVL	*	device operating system version number 2
deviceOsVer3	32871	1	MRVL	*	device operating system version number 3
dnsAnswerName	32952	64	MR--	*	DNS answer name
dnsState	32954	1	MR--	*	DNS state
dnsTid	32955	2	MR--	*	DNS TID
dnsType	32953	2	MR--	*	DNS type
droppedOctetTotalCount	134	8	MRVL	.	Dropped octet total count
droppedPacketTotalCount	135	8	MRVL	.	Dropped packet total count
flowActiveBytes	32946	8	MR--	*	Flow active bytes
flowActiveTime	32945	4	MR--	*	Flow active time
flowAttr_abr_service	32890	1	MRVL	*	flow attribute: abr service
flowAttr_audio	32891	1	MRVL	*	flow attribute: audio
flowAttr_download	32893	1	MRVL	*	flow attribute: download
flowAttr_encrypted	32892	1	MRVL	*	flow attribute: encrypted
flowAttr_esni	32907	1	MRVL	*	flow attribute: encrypted SNI
flowAttr_realtime_communication	32895	1	MRVL	*	flow attribute: real time communication
flowAttr_upload	32894	1	MRVL	*	flow attribute: upload
flowAttr_video	32889	1	MRVL	*	flow attribute: video
flowAverageBitrate	32956	4	MRVL	*	average flow throughput
flowEndReason	136	1	-R--	*	Reason for flow termination
flowPeakBitrate	32958	4	MRVL	*	peak flow throughput
hostName	32864	64	MRVL	*	host name
hostNameExtended	32920	101	MRVL	*	host name extended
httpContentLength	32939	4	MRVL	*	HTTP Content Length
httpContentType	32938	64	MRVL	*	HTTP Content Type
httpReferer	32933	64	MRVL	*	HTTP Referer
httpReplyCode	32937	2	MRVL	*	HTTP Reply Code
httpRequestMethod	32936	7	MRVL	*	HTTP Request Method
httpUri	32931	227	MRVL	*	HTTP URI
httpUriLength	32932	2	MRVL	*	HTTP URI Length
httpUserAgent	32934	64	MRVL	*	HTTP User Agent
httpUserAgentLength	32935	2	MRVL	*	HTTP User Agent Length
imei	32897	8	MRV-	*	International Mobile Equipment Identity
imei-aes-128	32916	32	MRV-	*	imei AES-128 encrypted
imei-aes-256	32919	32	MRV-	*	imei AES-256 encrypted
imei-sha-1	32910	20	MRV-	*	imei SHA-1 hashed
imei-sha-256	32913	32	MRV-	*	imei SHA-256 hashed
imsi	32879	8	MRV-	*	international mobile subscriber identity
imsi-aes-128	32915	16	MRV-	*	imsi AES-128 encrypted
imsi-aes-256	32918	16	MRV-	*	imsi AES-256 encrypted
imsi-sha-1	32909	20	MRV-	*	imsi SHA-1 hashed
imsi-sha-256	32912	32	MRV-	*	imsi SHA-256 hashed
interfaceName	82	32	MRVL	.	Interface name
ipFamily	32868	1	MRVL	*	IP Family
ipTTL	192	1	MRVL	*	IP packet time to live
mcc	32899	2	MRV-	*	Mobile country code
mmeAmfAddr	32949	16	MR--	*	SGSN MME IP Address
mnc	32878	2	MRV-	*	mobile network code
msisdn	32880	8	MRV-	*	mobile station international subscriber directory number
msisdn-aes-128	32914	16	MRV-	*	msisdn AES-128 encrypted

msisdn-aes-256	32917	16	MRV-	*	msisdn AES-256 encrypted
msisdn-sha-1	32908	20	MRV-	*	msisdn SHA-1 hashed
msisdn-sha-256	32911	32	MRV-	*	msisdn SHA-256 hashed
multiDevice	32930	2	MRVL	*	multi-device detection tracked device
observationPointId	138	4	MRVL	.	Observation point Id
octetTotalCount	85	8	MRVL	.	Octet total count
packetTotalCount	86	8	MRVL	.	Packet total count
pgw-ggsnAddr	32882	16	MRV-	*	public data network gateway
plmnid	32903	4	MRV-	*	Public land mobile network identifier
policyActionRuleUnitName	32926	33	M---	*	policy action rule unit name
policyChargingRuleUnitName	32925	33	M---	*	policy charging rule unit name
policyRuleBaseName	32922	81	M---	*	policy rule base name
policyRuleName	32923	81	MR--	*	policy rule name
policyRuleUnitName	32924	33	M---	*	policy rule unit name
postIpPrecedence	257	1	MRVL	*	Post IP precedence
pra-id	32940	4	M---	*	presence reporting area ID
protocolIdentifier	4	1	MRVL	.	Protocol Identifier
qci	32927	4	MR--	*	3gpp QCI
ratType	32884	2	MRV-	*	radio access technology type
regionId	32885	2	MRV-	*	region id
regionIdExt	32972	3	-R--	*	region id or 5G TAC
roamingStatus	32898	1	M---	*	Roaming status
sessionDirection	32781	1	MRVL	.	Session Direction
sessionDurationMilliseconds	32862	4	MRVL	*	session duration
sessionEndMilliseconds	32969	8	-R--	*	session end time in milliseconds
sessionEndSeconds	32875	4	MRVL	*	session end time
sessionStartMilliseconds	32968	8	-R--	*	session start time in milliseconds
sessionStartSeconds	32863	4	MRVL	*	session start time
sgw-sgsnAddr	32881	16	M---	*	serving gateway
sliceId	32951	4	MR--	*	Slice ID
sourceIPv4Address	8	4	MRVL	.	Source IPv4 address
sourceIPv6Address	27	16	MRVL	.	Source IPv6 address
sourceTransportPort	7	2	MRVL	.	Source transport port
tcpMaximumSegmentSize	32966	2	MRVL	*	maximum TCP segment size
tcpRetransmittedBytes	32778	8	MRVL	*	TCP Retransmitted Bytes
tcpRetransmittedPackets	32779	8	MRVL	*	TCP Retransmitted Packets
tcpRoundTripTimeAvg	32964	2	MRVL	*	average TCP round trip time in milliseconds
tcpRoundTripTimeMax	32962	2	MRVL	*	maximum TCP round trip time in milliseconds
tcpRoundTripTimeMin	32960	2	MRVL	*	minimum TCP round trip time in milliseconds
tcpSessionEstDelay	32772	4	MRVL	*	TCP Session Establishment Delay
timeZone	32887	2	M---	*	time zone
tlsCname	32950	64	MR--	*	TLS cname
uli	32900	18	MRV-	*	User location information
wireless-device-os-id	32941	1	MRV-	*	wireless device operating system ID
wireless-device-type-id	32942	1	MRV-	*	wireless device type ID

Legend :

Mode (aa-sub-scale mode) M mobile-gateway  
 R residential  
 V vpn  
 L lightweight-internet

```
Dy (dynamic field)      . always included in this record type
                       * can be dynamically included in this record type
=====
```

Table 78: Show Comprehensive Template Output Fields

Label	Description
Name	Displays the name of the template field.
ID	Displays the ID of the template field.
Len	Displays the string length of the template field.
Mode	Displays the mode: <ul style="list-style-type: none"> <li>• M — mobile gateway</li> <li>• R — residential</li> <li>• V — VPN</li> <li>• L — lightweight Internet</li> </ul>
Dy	Displays whether the field is dynamic: <ul style="list-style-type: none"> <li>• . — always included in this record type</li> <li>• * — can be dynamically included in this record type</li> </ul>
Description	Displays the description of the template field.

## 6.50 config

config

### Syntax

config

### Context

[\[Tree\]](#) (show config)

### Full Context

show config

### Description



**Note:** This command is no longer supported and will be removed in a future release.

## Platforms

All

## 6.51 configuration-mode

### configuration-mode

#### Syntax

```
configuration-mode {mixed | model-driven} check [li | configure]
```

#### Context

[\[Tree\]](#) (tools>perform>system>management-interface configuration-mode)

#### Full Context

tools perform system management-interface configuration-mode

#### Description

This command checks if the configuration meets the prerequisite reference requirements to change the management interface configuration mode. Incompatible configuration commands are displayed with an error reason if the prerequisite is not met. This command does not check if the configuration has commands that are unsupported in model-driven interfaces.

#### Parameters

##### mixed

Specifies to check mixed management interface configuration mode.

##### model-driven

Specifies to check model-driven management interface configuration mode.

##### li

Specifies to only check the li configuration region.

##### configure

Specifies to only check the configure configuration region.

## Platforms

All

## 6.52 configuration-sessions

### configuration-sessions

#### Syntax

**configuration-sessions**

#### Context

[\[Tree\]](#) (show>system>management-interface configuration-sessions)

#### Full Context

show system management-interface configuration-sessions

#### Description

This command displays configuration sessions information.

#### Platforms

All

#### Output

The following output is an example of configuration session information. [Table 79: Configuration-sessions Output Fields](#) describes the output fields.

#### Output Example

```
(pr[])
A:admin@node-1# show system management-interface configuration-sessions
=====
Session ID  Region          Datastore      Lock State
Username    Session Mode   Session From   Idle Time
Session Type
-----
#65         configure      Candidate      Unlocked
  admin     Private        192.168.0.10  0d 00:00:00
  MD-CLI
66         configure      Candidate      Unlocked
  admin     Private        192.168.0.10  0d 00:05:41
  MD-CLI
67         configure      Candidate      Unlocked
  admin     Private        192.168.0.10  0d 00:05:08
  MD-CLI
68         configure      Candidate      Unlocked
  admin     Read-Only     192.168.0.10  0d 00:02:25
  MD-CLI (2)
69         configure      Candidate, Running Locked
  admin     Exclusive     192.168.0.10  0d 00:01:54
  MD-CLI
-----
Number of sessions: 5
'#' indicates the current active session
'(n)' indicates the number of internal sessions
```

Table 79: Configuration-sessions Output Fields

Label	Description
Session ID	The session ID.
Region	The region or scope that the datastore belongs to.
Datastore	Datastores that can be locked. For example: Running and Candidate.
Lock State	Locked — Indicates the session is in a locked state. Unlocked — Indicates the session is in an unlocked state.
Username	The name of the user.
Session Mode	Exclusive — An exclusive session. Global — A shared session. Private — A private session. Private Exclusive — A private exclusive session. Read-Only — A read-only session.
Idle Time	The idle time of the session.
Session Type	NETCONF — Indicates a NETCONF session is running. MD-CLI — Indicates an MD-CLI session is running. gRPC — Indicates a gRPC session is running. SNMP — Indicates an SNMP session is running. Classic CLI — Indicates a classic CLI session is running. System — Indicates a system session is running.
From	The originating IP address, CRON, or EHS.

## 6.53 connection-profile-vlan

### connection-profile-vlan

#### Syntax

**connection-profile-vlan** [*conn-prof-id*]

#### Context

**[Tree]** (show connection-profile-vlan)



## Full Context

show connection-profile-vlan

## Description

This command displays information about the connection-profiles (VLAN) in the system. When a specific connection profile is shown, the vlan-ranges that it contains are displayed.

## Parameters

### *conn-prof-id*

Specifies the VLAN connection profile ID.

**Values** 1 to 8000

## Platforms

All

## Output

The following output is an example of connection profile VLAN information.

### Output Example

```
*A:Dut# show connection-profile-vlan
=====
Connection Profile Vlan Summary Information
=====
CP Index                Number of Members
-----
1                        2
=====
*A:Dut# show connection-profile-vlan 1
=====
Connection Profile 1 Information
=====
Description : (Not Specified)
Last Change : 12/01/2015 16:50:34
=====
Connection Profile Vlan Eth Information
=====
Range Start      Range End      Last Change
-----
5                100           12/01/2015 16:50:34
150             300           12/01/2015 16:50:34
=====
```

## 6.54 connections

### connections

#### Syntax

**connections**

#### Context

[\[Tree\]](#) (show>li>x-interfaces connections)

#### Full Context

show li x-interfaces connections

#### Description

This command displays the connections between the X1, X2, and X3 interfaces.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### connections

#### Syntax

**connections** [**detail**] [**address** *ip-address*] [**port** *port-number*]

#### Context

[\[Tree\]](#) (show>system connections)

#### Full Context

show system connections

#### Description

This command displays UDP and TCP connection information.

If no command line options are specified, a summary of the TCP and UDP connections displays.

Entries in the output with a vRtrID of 4095 and a local address of 127.x.x.x are internal connections serving internal SR OS purposes, and are not used for external protocols.

#### Parameters

***ip-address***

Displays only the connection information for the specified IP address.

**Values**

ipv4-address: a.b.c.d (host bits must be 0)  
 ipv6-address: x:x:x:x:x:x:x[-interface]  
 x:x:x:x:x:d.d.d.d[-interface]  
 where  
 x: [0 to FFFF]H  
 d: [0 to 255]D  
 interface: up to 32 characters,  
 mandatory for link local  
 addresses

**port-number**

Displays only the connection information for the specified port number.

**Values** 0 to 65535

**detail**

Appends TCP statistics to the display output.

**Platforms**

All

**Output**

The following outputs are examples of system connections information, and [Table 80: System Connections Field Descriptions](#) describes the output fields.

**Output Example**

```
A:ALA-12# show system connections
=====
Connections
=====
Prot RecvQ  TxmtQ  Local Address          State
          MSS   Remote Address          vRtrID
-----
TCP      0      0  0.0.0.0.21            LISTEN
          1024  0.0.0.0.0              0
TCP      0      0  0.0.0.0.22            LISTEN
          1024  0.0.0.0.0              0
TCP      0      0  0.0.0.0.23            LISTEN
          1024  0.0.0.0.0              0
TCP      0      0  0.0.0.0.830           LISTEN
          1024  0.0.0.0.0              0
TCP      0      0  0.0.0.0.6068          LISTEN
          1024  0.0.0.0.0              0
TCP      0      0  0.0.0.0.47806         LISTEN
          1024  0.0.0.0.0              0
TCP      0      0  ::.21                 LISTEN
          1024  :::0                    0
TCP      0      0  :::22                 LISTEN
          1024  :::0                    0
```

```

TCP      0      0  ::.830                                LISTEN
          1024  ::.0                                    0
TCP      0      0  ::.47806                               LISTEN
          1024  ::.0                                    0
TCP      0      0  192.168.0.11.21                        LISTEN
          1024  0.0.0.0.0                                4095
TCP      0      0  192.168.0.11.21059                     LISTEN
          1024  0.0.0.0.0                                4095
TCP      0      0  172.31.129.98.22                       LISTEN
          1024  0.0.0.0.0                                4095
TCP      0      0  172.31.129.98.23                       ESTABLISH
          1024  192.168.140.149.59042                    4095
TCP      0     1149  172.31.129.98.23                       ESTABLISH
          1024  192.168.140.244.58579                    4095
TCP      0      0  172.31.129.98.830                      LISTEN
          1024  0.0.0.0.0                                4095
TCP      0      0  2001:db8::8779:8163.22                 LISTEN
          1024  ::.0                                    4095
TCP      0      0  2001:db8::8779:8163.830                LISTEN
          1024  ::.0                                    4095
UDP      0      0  0.0.0.0.67                             ---
          0.0.0.0.0                                0
UDP      0      0  0.0.0.0.68                             ---
          0.0.0.0.0                                0
UDP      0      0  0.0.0.0.123                            ---
          0.0.0.0.0                                0
UDP      0      0  0.0.0.0.319                            ---
          0.0.0.0.0                                0
UDP      0      0  0.0.0.0.320                            ---
          0.0.0.0.0                                0
UDP      0      0  0.0.0.0.514                            ---
          0.0.0.0.0                                0
UDP      0      0  0.0.0.0.50055                          ---
          0.0.0.0.0                                0
UDP      0      0  ::.123                                  ---
          ::.0                                    0
UDP      0      0  ::.50056                                 ---
          ::.0                                    0
UDP      0      0  0.0.0.0.1025                           ---
          0.0.0.0.0                                1
UDP      0      0  0.0.0.0.123                             ---
          0.0.0.0.0                                4095
UDP      0      0  0.0.0.0.49152
-----
No. of Connections: 18
=====
A:ALA-12#
  
```

### Output Example: detail

```

A:ALA-12# show system connections detail
-----
TCP Statistics
-----
packets sent           : 659635
data packets          : 338982 (7435146 bytes)
data packet retransmitted : 73 (1368 bytes)
ack-only packets      : 320548 (140960 delayed)
URG only packet       : 0
window probe packet   : 0
window update packet  : 0
control packets       : 32
packets received      : 658893
  
```

```

acks : 338738 for (7435123 bytes)
duplicate acks : 23
ack for unsent data : 0
packets received in-sequence : 334705 (5568368 bytes)
completely duplicate packet : 2 (36 bytes)
packet with some dup. data : 0 (0 bytes)
out-of-order packets : 20 (0 bytes)
packet of data after window : 0 (0 bytes)
window probe : 0
window update packet : 3
packets received after close : 0
discarded for bad checksum : 0
discarded for bad header offset field : 0
discarded because packet too short : 0
connection request : 4
connection accept : 24
connections established (including accepts) : 27
connections closed : 26 (including 2 drops)
embryonic connections dropped : 0
segments updated rtt : 338742 (of 338747 attempts)
retransmit timeouts : 75
connections dropped by retransmit timeout : 0
persist timeouts : 0
keepalive timeouts : 26
keepalive probes sent : 0
connections dropped by keepalive : 1
pcb cache lookups failed : 0
connections dropped by bad md5 digest : 0
connections dropped by enhanced auth : 0
path mtu discovery backoff : 0
=====
A:ALA-12#
    
```

Table 80: System Connections Field Descriptions

Label	Description
Proto	The socket protocol, either TCP or UDP.
RecvQ	The number of input packets received by the protocol.
TxmtQ	The number of output packets sent by the application.
Local Address	The local address of the socket. The socket port is separated by a period.
Remote Address	The remote address of the socket. The socket port is separated by a period.
State	Listen — The protocol state is in the listen mode. Established — The protocol state is established. vRtrID — The virtual router identifier. <ul style="list-style-type: none"> <li>• vRtrID 0 — listens for connections in all routing instances including the Base and management VRFs.</li> <li>• vRtrID 1 — Base routing instance</li> <li>• vRtrID 4095 — management routing instance</li> </ul>

Label	Description
	MSS — The TCP maximum segment size.

## 6.55 connectivity-association

### connectivity-association

#### Syntax

```
connectivity-association [ca-name] [detail]  
connectivity-association [detail] type {anysec | macsec}
```

#### Context

[\[Tree\]](#) (show>macsec connectivity-association)

#### Full Context

```
show macsec connectivity-association
```

#### Description

This command displays MACsec specific CA information.

#### Parameters

##### **ca-name**

Displays MACsec information for the specified CA name, up to 256 characters in length.

##### **detail**

Displays MACsec CA detailed information.

##### **anysec**

Displays ANYsec CA information.

##### **macsec**

Displays MACsec CA information.

#### Platforms

All

#### Output

See the following output examples:

- [Output Example: show macsec connectivity-association](#)
- [Output Fields: show macsec connectivity-association](#)
- [Output Example: show macsec connectivity-association <ca-name>](#)

- [Output Fields: show macsec connectivity-association <ca-name>](#)
- [Output Example: show macsec connectivity-association <ca-name> detail](#)
- [Output example: show macsec connectivity-association type anysec detail](#)
- [Output example: show macsec connectivity-association type macsec detail](#)

**Output Example: show macsec connectivity-association**

```
A:Dut-C# show macsec connectivity-association
=====
ca-name          : dut_B_C_128_01
ca-name          : dut_B_C_256_01
ca-name          : dut_B_C_128_xpn_01
ca-name          : dut_B_C_256_xpn_01
ca-name          : to_Juniper_1_1_2_1
ca-name          : abcdefghijklmnoprstuvwxyz@!
=====
```

**Output Fields: show macsec connectivity-association**

[Table 81: Output Fields: show macsec connectivity-association](#) describes the output fields for the **show macsec connectivity-association** command.

*Table 81: Output Fields: show macsec connectivity-association*

Label	Description
ca-name	Specifies the CA name.

**Output Example: show macsec connectivity-association <ca-name>**

```
A:Dut-C# show macsec connectivity-association "abcdefghijklmnoprstuvwxyz@!"
=====
Connectivity Association "abcdefghijklmnoprstuvwxyz@!"
=====
Admin State      : Up
Description      : alsfjalsfjafja;lsjflasjflasjfl
Replay Protection : Disabled
Replay Window Size : 333
Macsec Encrypt   : Enabled
Clear Tag Mode   : dual-tag
Cipher Suite     : gcm-aes-256
Encryption Offset : 30
Assigned ports   : 2/1/9 2/1/10
-----
Static Cak
-----
MKA Key Server Priority : 16
Active Pre-Shared-Key Index : 1
Active Pre-Shared-Key CKN : aabccddeeff00112233445566778899
=====
```

**Output Fields: show macsec connectivity-association <ca-name>**

[Table 82: Output Fields: show macsec connectivity-association <ca-name>](#) describes the output fields for the **show macsec connectivity-association <ca-name>** command.

Table 82: Output Fields: show macsec connectivity-association <ca-name>

Label	Description
Admin State	Up — The CA is administratively up. Down — The CA is administratively down. If port <x/y/z> ethernet>macsec is shutdown, the admin state will be down. Otherwise, the admin state is up.
Description	Specifies a user description for this CA.
Replay Protection	Enabled — Replay Protection is enabled. Disabled — Replay Protection is disabled. If replay protection is enabled for this CA, the out of window packet will be discarded.
Replay Window Size	Specifies the size, in packets, of the replay window.
Macsec Encrypt	Enabled — MACsec is enabled. Disabled — MACsec is disabled.
Clear Tag Mode	Specifies the clear tag mode: single-tag, dual-tag.
Cipher Suite	Specifies the cipher suite used for encrypting the SAK: gcm-aes-128, gcm-aes-256, gcm-aes-xpn-128, gcm-aes-xpn-256.
Encryption Offset	Specifies the encryption offset configured on this node: 0, 30, 50.
Assigned ports	Specifies all ports that contain this CA.
MKA Key Server Priority	Specifies the MKA key server priority: 0-255 (default 16).
Active Pre-Shared Key Index	Specifies the active pre-shared key index: 1-2 (default 1).
Active Pre-Shared Key CKN	Specifies the active PSK CAK name.

**Output Example: show macsec connectivity-association <ca-name> detail**

```
A:Dut-C# show macsec connectivity-association "abcdefghijklmnoqrstuvwxyz@!" detail
=====
Connectivity Association "abcdefghijklmnoqrstuvwxyz@!"
=====
Admin State      : Up
Description     : alsfjalsfjafja;lsjflasjflasjfl
Replay Protection : Disabled
Replay Window Size : 333
Macsec Encrypt  : Enabled
Clear Tag Mode   : dual-tag
Cipher Suite     : gcm-aes-256
Encryption Offset : 30
```



```
Assigned ports      : 2/1/9 2/1/10
-----
Static Cak
-----
MKA Key Server Priority      : 16
Active Pre-Shared-Key Index : 1
Active Pre-Shared-Key CKN   : aabbccddeeff00112233445566778899
=====
```

**Output example: show macsec connectivity-association type anysec detail**

```
# show macsec connectivity-association type anysec detail

=====
Connectivity Association "test"
=====
Admin State      : Up
Description      : (Not Specified)
Cipher Suite     : gcm-aes-128
Encryption Offset : 0
Encryption Group : EG-1

-----
Static Cak
-----
MKA Key Server Priority      : 255
Active Pre-Shared-Key Index : 2
Hello Interval              : 2
Active Pre-Shared-Key CKN   : 11223344556677889900aabbccddeeff
Encryption Type             : aes-128-cmac
=====
```

Table 83: Output Fields: show macsec connectivity-association type anysec detail

Label	Description
Encryption Group	Specifies the encryption group for this CA

**Output example: show macsec connectivity-association type macsec detail**

```
*A:Dut-AS# show macsec connectivity-association type macsec detail

=====
Connectivity Association "test"
=====
Admin State      : Down
Description      : (Not Specified)
Delay Protection  : Disabled
Replay Protection : Disabled
Replay Window Size : 0
Macsec Encrypt   : Enabled
Clear Tag Mode   : none
Cipher Suite     : gcm-aes-128
Encryption Offset : 0
Assigned ports   : None

-----
Static Cak
-----
MKA Key Server Priority      : 16
```

```
Active Pre-Shared-Key Index : 1
Hello Interval              : 2
Active Pre-Shared-Key CKN   :
Encryption Type             :
=====
```

## 6.56 convergence

### convergence

#### Syntax

**convergence** [*family*]

#### Context

**[Tree]** (show>router>bgp convergence)

#### Full Context

show router bgp convergence

#### Description

This command displays information about how the router reconverged its routing state after the last restart of BGP.

#### Parameters

**family**

Specifies an address family for which to display BGP route convergence information.

**Values** ipv4, ipv6, vpn-ipv4, vpn-ipv6, label-ipv4, label-ipv6

#### Platforms

All

#### Output

[Table 84: Show Router BGP Convergence Field Descriptions](#) describes the BGP convergence output fields.

Use the following command to display BGP route convergence information for routes of all address families.

```
show router bgp convergence
```

#### Output Example

```
=====
BGP IPv4 Convergence
=====
```

```
Min wait advertise timer      : 30
Established peers at min wait timer expiry : 0
Current established peers    : 0
First session established time : 00h00m00s
Last session established time  : 00h00m00s
Max Wait advertise timer     : 90
Converged peers              : 0
Converged state               : converged
Converged time                : 00h01m22s
=====
```

=====

BGP VPN-IPv4 Convergence

=====

```
Min wait advertise timer      : 30
Established peers at min wait timer expiry : 1
Current established peers    : 1
First session established time : 00h00m52s
Last session established time  : 00h00m52s
Max Wait advertise timer     : 90
Converged peers              : 0
Converged state               : timeout
Converged time                : N/A
=====
```

=====

BGP IPv6 Convergence

=====

```
Min wait advertise timer      : 30
Established peers at min wait timer expiry : 0
Current established peers    : 0
First session established time : 00h00m00s
Last session established time  : 00h00m00s
Max Wait advertise timer     : 90
Converged peers              : 0
Converged state               : converged
Converged time                : 00h01m22s
=====
```

=====

BGP VPN-IPv6 Convergence

=====

```
Min wait advertise timer      : 30
Established peers at min wait timer expiry : 0
Current established peers    : 0
First session established time : 00h00m00s
Last session established time  : 00h00m00s
Max Wait advertise timer     : 90
Converged peers              : 0
Converged state               : converged
Converged time                : 00h01m22s
=====
```

=====

BGP LABEL-IPv4 Convergence

=====

```
Min wait advertise timer      : 30
Established peers at min wait timer expiry : 0
Current established peers    : 0
First session established time : 00h00m00s
Last session established time  : 00h00m00s
Max Wait advertise timer     : 90
Converged peers              : 0
Converged state               : converged
```

```

Converged time                : 00h01m22s
=====
=====
BGP LABEL-IPv6 Convergence
=====
Min wait advertise timer      : 30
Established peers at min wait timer expiry : 0
Current established peers     : 0
First session established time : 00h00m00s
Last session established time  : 00h00m00s
Max Wait advertise timer     : 90
Converged peers               : 0
Converged state                : converged
Converged time                 : 00h01m22s
=====
    
```

Use the following command to display BGP route convergence information for IPv4 VPN routes.

```
show router bgp convergence vpn-ipv4
```

### Output Example

```

=====
BGP VPN-IPv4 Convergence
=====
Min wait advertise timer      : 30
Established peers at min wait timer expiry : 1
Current established peers     : 1
First session established time : 00h00m52s
Last session established time  : 00h00m52s
Max Wait advertise timer     : 90
Converged peers               : 0
Converged state                : timeout
Converged time                 : N/A
=====
    
```

Table 84: Show Router BGP Convergence Field Descriptions

Label	Description
Min wait advertise timer	The operational value of <b>min-wait-to-advertise</b> (0 if the feature is disabled)  Use the <b>min-wait-to-advertise</b> command in the <b>configure router bgp convergence</b> context to configure the minimum amount of time BGP waits after the first session is established, following a BGP-instance restart, before it advertises any routes in a specific set of address families.
Established peers at min wait timer expiry	The number of address-family peers that were established when the <b>min-wait-to-advertise</b> command timer value expired (N/A if the feature is disabled)
Current established peers	The current number of address family peers that are in the established state

Label	Description
First session established time	<p>The time, relative to BGP instance restart at time T=0, when the first address family session was established.</p> <p>This stops being tracked when the <b>min-wait-to-advertise</b> timer expires.</p>
Last session established time	<p>The time, relative to BGP instance restart at time T=0, when the last address-family session was established.</p>
Max Wait advertise timer	<p>The operational value of the <b>max-wait-to-advertise</b> command for the address family (0 if the feature is disabled)</p> <p>Use the <b>max-wait-to-advertise</b> command in the <b>configure router bgp convergence family</b> context to configure the maximum amount of time BGP waits after the first session is established, following a BGP-instance restart, before it advertises the routes of a specific address family to BGP peers.</p>
Converged peers	<p>The number of address-family converged peers. This is the number of BGP neighbors that have, up to now, sent an EOR marker for the address family. N/A if the feature is disabled.</p>
Converged state	<p>The convergence state of the address family: waiting, started, partial, timeout or converged. N/A if the feature is disabled. Waiting is when no peers have reconnected yet.</p> <p>The waiting to start transition occurs when the first session comes up.</p> <p>The started to partial transition occurs when at least one address-family peer has sent the EOR marker.</p> <p>The partial to converged transition occurs when all address-family peers that have been up continuously since the <b>min-wait-to-advertise</b> timer expired have sent the EOR marker.</p> <p>The partial to timeout transition occurs when the <b>max-wait-to-advertise</b> timer expires and not all address family peers that have been up continuously since the <b>min-wait-to-advertise</b> timer expired have sent the EOR marker.</p>
Converged time	<p>The convergence time of the address family after the last restart, relative to BGP instance restart at time T=0. N/A is displayed if the convergence state is waiting, started, partial, or timeout.</p>

## 6.57 count

count

### Syntax

count [detail]

### Context

[\[Tree\]](#) (show>app-assure>group>aa-sub count)

### Full Context

show application-assurance group aa-sub count

### Description

This command displays per-subscriber app-group application and protocol statistics.

### Parameters

**detail**

Displays detailed information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of the **count** command.

### Output Example

```
A:ALU>show>app-assure>group>aa-sub# count
=====
Application-Assurance Subscriber TestSubscriberName
Application Group, Application and Protocol Statistics
=====
Application Group          Disc Octets          Packets          Flows
-----
Database                   0% 0                 0                 0
File Transfer              0% 27243             169               22
Games                      0% 0                 0                 0
Infrastructure             0% 71494             555               515
Instant Messaging         0% 4947792            25587             411
Local Content              0% 923                 8                 2
Mail                       0% 53729              318               22
Mail Server                0% 0                  0                 0
MultiMedia                 0% 31670667           33087             142
Nntp                       0% 0                  0                 0
Peer to Peer               .45% 11096224         16339             2431
Premium Partner            0% 0                  0                 0
Remote Connectivity Server 0% 15321              171               2
Server                     0% 0                  0                 0
```

```

Suspect          72% 1012          11          11
Tunneling        0% 19659289         33535         164
Unknown         0% 1945164          6317          287
Web             0% 29538078         34873         1022
Web Server      0% 0                0              0
=====
Application      Disc Octets      Packets      Flows
-----
HTTP_Local      0% 923            8             2
=====
Protocol        Disc Octets      Packets      Flows
-----
dns             1.8% 40010         277           277
=====
A:ALU>show>app-assure>group>aa-sub#

A:ALU>show>app-assure>group>aa-sub# count detail
=====
Application-Assurance Subscriber TestSubscriberName
Application Group, Application and Protocol Statistics
=====
Subscriber      Application Group:
Type            Octets          Packets         Flows
-----
TestSubscriberName Instant Messaging:
Admitted from subscriber: 2558576          12720          229
Denied from subscriber: 0                0              0
Active flows from subscriber:
Admitted to subscriber: 2389216          12867          182
Denied to subscriber: 0                0              0
Active flows to subscriber:
Total flow duration: 2912 seconds
Terminated flows:
Short Duration flows:
Medium Duration flows:
Long Duration flows:
...
TestSubscriberName Web:
Admitted from subscriber: 2343429          22806          511
Denied from subscriber: 0                0              0
Active flows from subscriber:
Admitted to subscriber: 56359191          40528          511
Denied to subscriber: 0                0              0
Active flows to subscriber:
Total flow duration: 4783 seconds
Terminated flows:
Short Duration flows:
Medium Duration flows:
Long Duration flows:
=====
Subscriber      Application:
Type            Octets          Packets         Flows
-----
TestSubscriberName HTTP_Local:
Admitted from subscriber: 0                0              0
Denied from subscriber: 0                0              0
Active flows from subscriber:
Admitted to subscriber: 0                0              0
Denied to subscriber: 0                0              0
Active flows to subscriber:
Total flow duration: 0 seconds
Terminated flows:
Short Duration flows:

```

```

Medium Duration flows: 0
Long Duration flows: 0
=====
Subscriber              Protocol:
Type                    Octets      Packets     Flows
-----
TestSubscriberName     dns:
Admitted from subscriber: 0           0           0
Denied from subscriber: 0           0           0
Active flows from subscriber:
Admitted to subscriber: 0           0           0
Denied to subscriber: 0           0           0
Active flows to subscriber:
Total flow duration: 0 seconds
Terminated flows: 0
Short Duration flows: 0
Medium Duration flows: 0
Long Duration flows: 0
=====
A:ALU>show>app-assure>group>aa-sub#
    
```

## count

### Syntax

**count**

### Context

[\[Tree\]](#) (show>app-assure>group>aa-sub>um count)

### Full Context

show application-assurance group aa-sub usage-monitor count

### Description

This command displays usage monitor counters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.58 counters

## counters

### Syntax

**counters**



## Context

[\[Tree\]](#) (clear>service>statistics>id counters)

## Full Context

clear service statistics id counters

## Description

This command clears all traffic queue counters associated with the service ID.

## Platforms

All

counters

## Syntax

counters

## Context

[\[Tree\]](#) (show>snmp counters)

## Full Context

show snmp counters

## Description

This command displays SNMP counters information. SNMP counters will continue to increase even when SNMP is shut down. Some internal modules communicate using SNMP packets.

## Platforms

All

## Output

The following output is an example of SNMP counter information.

[Table 85: Show Counters Output Fields](#) describes the SNMP counters output fields.

## Output Example

```
A:ALA-1# show snmp counters
=====
SNMP counters:
=====
in packets : 463
-----
in gets    : 93
in getnexts : 0
in sets    : 370
out packets : 463
```

```

-----
    out get responses : 463
    out traps        : 0

    variables requested : 33
    variables set      : 497
=====
A:ALA-1#
    
```

Table 85: Show Counters Output Fields

Label	Description
in packets	Displays the total number of messages delivered to SNMP from the transport service.
in gets	Displays the number of SNMP get request PDUs accepted and processed by SNMP.
in getnexts	Displays the number of SNMP get next PDUs accepted and processed by SNMP.
in sets	Displays the number of SNMP set request PDUs accepted and processed by SNMP.
out packets	Displays the total number of SNMP messages passed from SNMP to the transport service.
out get responses	Displays the number of SNMP get response PDUs generated by SNMP.
out traps	Displays the number of SNMP Trap PDUs generated by SNMP.
variables requested	Displays the number of MIB objects requested by SNMP.
variables set	Displays the number of MIB objects set by SNMP as the result of receiving valid SNMP set request PDUs.

## counters

### Syntax

**counters**

### Context

[\[Tree\]](#) (show>snmp>streaming counters)

### Full Context

show snmp streaming counters

## Description

This command displays counters information for the proprietary SNMP streaming protocol.

## Platforms

All

## Output

The following output is an example of SNMP streaming counters information.

[Table 86: Show Streaming Counters Output Fields](#) describes the SNMP streaming counters output fields.

## Output Example

```
*A:Dut-B# show snmp streaming counters
=====
STREAMING counters:
=====
  in getTables   : 772
  in getManys    : 26
-----
  out responses  : 848
=====
```

*Table 86: Show Streaming Counters Output Fields*

Label	Description
in getTables	Displays the number of GetTable request packets received.
in getManys	Displays the number of GetMany request packets received.
out responses	Displays the number of response packets sent.

## 6.59 cpm

cpm

## Syntax

cpm

## Context

[\[Tree\]](#) (tools>dump>filter>resources cpm)

## Full Context

tools dump filter resources cpm

## Description

This command displays information about filter resource utilization on the CPM, consumption by filter-using services such as OpenFlow, and the filters that use the most resources.

## Platforms

All

## Output

The following output is an example of filter resource utilization information.

### Output Example

```
*A:Dut-C>tools>dump>filter>resources># cpm
=====
Number of ACL filters defined on CPM
=====
Owner                MAC          IP           IPv6         Total
-----
Configuration        0            7            0            7
Host Common          0            2            0            2
Openflow             0            2            1            3
-----
Total                 0           14           4            18
=====
Available filters (except openflow): 16369
Available openflow filters:         16381

=====
Number of ACL filter entries / subentries defined on CPM
=====
Inserted by          MAC          IP           IPv6         Total
-----
User configuration   0            21           1            22
                    0            21           1            22
Radius               0            0            0            0
                    0            0            0            0
Credit Control      0            0            0            0
                    0            0            0            0
Embedded            0            0            0            0
                    0            0            0            0
Radius shared host  0            2            0            2
                    0            2            0            2
Openflow             0            0            0            0
                    0            0            0            0
PCC-Rule             0            0            0            0
                    0            0            0            0
Other                0            0            0            0
                    0            0            0            0
-----
Total                0            23           1            24
                    0            23           1            24
=====
Available subentries (except openflow): 262120
Available openflow subentries:         262144

=====
Filters utilizing most resources (ordered by CPM entries)
=====
Type Id              Entries      Subentries   TCAM entries
```

```

                                                                    (per FlexPath)
-----
No Mac filters found
-----
Ip  100          5          5          5
Ip  65535       5          5          5
Ip   1          4          4          4
Ip  5:23       2          2          2
Ip  6:24       2          2          2
-----
Ipv6 fSpec-0    0          0          0
Ipv6 fSpec-2345 0          0          0
Ipv6 _tmnx_ofs_system:1 0          0          0
No more Ipv6 filters
=====

Filters utilizing most resources (ordered by CPM subentries)
=====
Type Id          Entries      Subentries  TCAM entries
                  (per FlexPath)
-----
No Mac filters found
-----
Ip  100          5          5          5
Ip  65535       5          5          5
Ip   1          4          4          4
Ip  5:23       2          2          2
Ip  6:24       2          2          2
-----
Ipv6 fSpec-0    0          0          0
Ipv6 fSpec-2345 0          0          0
Ipv6 _tmnx_ofs_system:1 0          0          0
No more Ipv6 filters
=====
    
```

## 6.60 cpm-filter

### cpm-filter

#### Syntax

**cpm-filter**

#### Context

[\[Tree\]](#) (clear cpm-filter)

#### Full Context

clear cpm-filter

#### Description

Commands in this context clear the CPM filter.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## cpm-filter

### Syntax

**cpm-filter**

### Context

[\[Tree\]](#) (show>system>security cpm-filter)

### Full Context

show system security cpm-filter

### Description

This command displays CPM filters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## cpm-filter

### Syntax

**cpm-filter**

### Context

[\[Tree\]](#) (monitor cpm-filter)

### Full Context

monitor cpm-filter

### Description

This command displays monitor command output for CPM filters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 6.61 cpm-http-redirect

cpm-http-redirect

### Syntax

**cpm-http-redirect**

### Context

[\[Tree\]](#) (tools>dump>system cpm-http-redirect)

### Full Context

tools dump system cpm-http-redirect

### Description

Commands in this context display system-level CPM HTTP redirect information.

### Platforms

All

## 6.62 cpm-queue

cpm-queue

### Syntax

**cpm-queue** *queue-id*

### Context

[\[Tree\]](#) (show>system>security cpm-queue)

### Full Context

show system security cpm-queue

### Description

This command displays CPM queues.

### Parameters

***queue-id***

Specifies an integer value that identifies a CPM queue.

**Values** 0, 33 to 2000

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of CPM IPv6 filter information.

[Table 87: Show CPM IPv6 Filter Output Fields](#) describes CPM queue output fields.

### Output Example

```
A:ALA-35# show system security cpm-queue 1001
=====
CPM Queue Entry
=====
Queue Id          : 1001
-----
Queue Parameters :
-----
PIR               : 10000000          CIR               : 10000000
CBS               : 4096              MBS               : 8192
=====
A:ALA-35#
```

*Table 87: Show CPM IPv6 Filter Output Fields*

Label	Description
PIR	Displays the administrative Peak Information Rate (PIR) for the queue.
CIR	Displays the amount of bandwidth committed to the queue.
CBS	Displays the amount of buffer drawn from the reserved buffer portion of the queue's buffer pool.
MBS	Displays the maximum queue depth to which a queue can grow.

## cpm-queue

### Syntax

`cpm-queue queue-id`

### Context

[\[Tree\]](#) (clear cpm-queue)

### Full Context

clear cpm-queue



## Description

This command clears CPM queue information.

## Parameters

### *queue-id*

Specifies the CPM queue ID.

**Values** 33 to 2000

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 6.63 cpu

```
cpu
```

## Syntax

```
cpu [sample-period seconds]
```

## Context

[\[Tree\]](#) (show>system cpu)

## Full Context

```
show system cpu
```

## Description

This command displays CPU utilization per task over a sample period.

## Parameters

### *seconds*

Specifies the number of seconds over which to sample CPU task utilization.

**Values** 1 to 300

**Default** 1

## Platforms

All

## Output

The following output is an example of CPU information, and [Table 88: System CPU Field Descriptions](#) describes the output fields.

### Output Example

```

*A:cses-E11# show system cpu sample-period 2
=====
CPU Utilization (Sample period: 2 seconds)
=====
Name                    CPU Time      CPU Usage      Capacity
                        (uSec)                Usage
-----
BFD                      10             ~0.00%         ~0.00%
BGP                       0              0.00%         0.00%
CFLWD                     61             ~0.00%         ~0.00%
Cards & Ports            8,332          0.41%         0.08%
DHCP Server               79             ~0.00%         ~0.00%
ICC                      408            0.02%         0.01%
IGMP/MLD                 1,768          0.08%         0.08%
IOM                     17,197         0.85%         0.31%
IP Stack                  4,080          0.20%         0.09%
IS-IS                    1,213          0.06%         0.06%
ISA                      2,496          0.12%         0.07%
LDP                       0              0.00%         0.00%
Logging                   32             ~0.00%         ~0.00%
MPLS/RSVP                2,380          0.11%         0.08%
MSDP                      0              0.00%         0.00%
Management               5,969          0.29%         0.15%
OAM                       907            0.04%         0.02%
OSPF                      25             ~0.00%         ~0.00%
PIM                       5,600          0.27%         0.27%
RIP                       0              0.00%         0.00%
RTM/Policies              0              0.00%         0.00%
Redundancy               3,635          0.18%         0.13%
SIM                      1,462          0.07%         0.04%
SNMP Daemon               0              0.00%         0.00%
Services                  2,241          0.11%         0.05%
Stats                     0              0.00%         0.00%
Subscriber Mgmt           2,129          0.10%         0.04%
System                    8,802          0.43%         0.17%
Traffic Eng               0              0.00%         0.00%
VRRP                      697            0.03%         0.02%
WEB Redirect              125            ~0.00%         ~0.00%
-----
Total                    2,014,761     100.00%
  Idle                    1,945,113     96.54%
  Usage                    69,648        3.45%
Busiest Core Utilization 69,648        3.45%
=====
*A:cses-E11#

*A:ALA-1# show card 4 cpu
=====
Card 4 CPU Utilization (Sample period: 1 second)
=====
Name                    CPU Time      CPU Usage      Capacity
                        (uSec)                Usage
-----
HQoS Algorithm           70             ~0.00%         ~0.00%
HQoS Statistics           124            ~0.00%         0.83%
IOM                     15,904         0.79%         0.94%
-----
Total                    2,003,678     100.00%
  Idle                    1,987,580     99.19%
  Usage                    16,098        0.80%
    
```

```
Busiest Core Utilization      8,192      0.81%
=====
```

Table 88: System CPU Field Descriptions

Label	Description
CPU Utilization	The total amount of CPU time.
Name	The process or protocol name.
CPU Time (uSec)	The CPU time each process or protocol has used in the specified time.
CPU Usage	The sum of CPU usage of all the processes and protocols.
Capacity Usage	The level the specified service is being utilized. When this number hits 100%, this part of the system is busied out. There may be extra CPU cycles still left for other processes, but this service is running at capacity.  This column does not reflect the true CPU utilization value; that data is still available in the <b>CPU Usage</b> column. This column is the <b>busiest</b> task in each group, where <b>busiest</b> is defined as either actually running or blocked attempting to acquire a lock.
Idle	The current CPU utilization for the system.
Usage	The overall percentage of CPU idleness over the specified sample time.
Busiest Core Utilization	The utilization percentage of the busiest processor core over the specified sample time. On single core CPUs, this is the overall system utilization percentage over the specified sample time.

## cpu

### Syntax

cpu [sample-period seconds]

### Context

[\[Tree\]](#) (show>system cpu)

### Full Context

show system cpu

### Description

This command displays CPU utilization per task over a sample period.

## Parameters

### *seconds*

Specifies the number of seconds over which to sample CPU task utilization.

**Values** 1 to 300

**Default** 1

## Platforms

All

## Output

The following output is an example of system CPU information. [Table 89: System CPU Field Descriptions](#) describes the output fields.

### Output Example

```
*A:cses-E11# show system cpu sample-period 2
=====
CPU Utilization (Sample period: 2 seconds)
=====
```

Name	CPU Time (uSec)	CPU Usage	Capacity Usage
BFD	10	~0.00%	~0.00%
BGP	0	0.00%	0.00%
CFLOWD	61	~0.00%	~0.00%
Cards & Ports	8,332	0.41%	0.08%
DHCP Server	79	~0.00%	~0.00%
ICC	408	0.02%	0.01%
IGMP/MLD	1,768	0.08%	0.08%
IOM	17,197	0.85%	0.31%
IP Stack	4,080	0.20%	0.09%
IS-IS	1,213	0.06%	0.06%
ISA	2,496	0.12%	0.07%
LDP	0	0.00%	0.00%
Logging	32	~0.00%	~0.00%
MPLS/RSVP	2,380	0.11%	0.08%
MSDP	0	0.00%	0.00%
Management	5,969	0.29%	0.15%
OAM	907	0.04%	0.02%
OSPF	25	~0.00%	~0.00%
PIM	5,600	0.27%	0.27%
RIP	0	0.00%	0.00%
RTM/Policies	0	0.00%	0.00%
Redundancy	3,635	0.18%	0.13%
SIM	1,462	0.07%	0.04%
SNMP Daemon	0	0.00%	0.00%
Services	2,241	0.11%	0.05%
Stats	0	0.00%	0.00%
Subscriber Mgmt	2,129	0.10%	0.04%
System	8,802	0.43%	0.17%
Traffic Eng	0	0.00%	0.00%
VRRP	697	0.03%	0.02%
WEB Redirect	125	~0.00%	~0.00%
-----			
Total	2,014,761	100.00%	
Idle	1,945,113	96.54%	

```

Usage                69,648          3.45%
Busiest Core Utilization 69,648          3.45%
=====
*A:cses-E11#

*A:ALA-1# show card 4 cpu

=====
Card 4 CPU Utilization (Sample period: 1 second)
=====
Name                CPU Time      CPU Usage      Capacity
                   (uSec)                Usage
-----
HQoS Algorithm             70           ~0.00%         ~0.00%
HQoS Statistics            124          ~0.00%          0.83%
IOM                       15,904        0.79%          0.94%
-----
Total                   2,003,678    100.00%
  Idle                   1,987,580    99.19%
  Usage                   16,098        0.80%
Busiest Core Utilization   8,192         0.81%
=====
    
```

Table 89: System CPU Field Descriptions

Label	Description
CPU Utilization	The total amount of CPU time.
Name	The process or protocol name.
CPU Time (uSec)	The CPU time each process or protocol has used in the specified time.
CPU Usage	The sum of CPU usage of all the processes and protocols.
Capacity Usage	<p>Displays the level the specified service is being utilized. When this number hits 100%, this part of the system is busied out. There may be extra CPU cycles still left for other processes, but this service is running at capacity.</p> <p>This column does not reflect the true CPU utilization value; that data is still available in the <b>CPU Usage</b> column. This column is the <b>busiest</b> task in each group, where <b>busiest</b> is defined as either actually running or blocked attempting to acquire a lock.</p>

## 6.64 cpu-protection

### cpu-protection

#### Syntax

cpu-protection

#### Context

[\[Tree\]](#) (show>system>security cpu-protection)

#### Full Context

show system security cpu-protection

#### Description

Commands in this context display CPU protection information.

#### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

#### Output

The following output is an example of ETH CFM monitoring.

#### Output Example

```
show system security cpu-protection eth-cfm-monitoring
=====
SAP's where the protection policy Eth-CFM rate limit is exceeded
=====
SAP-Id                               Service-Id  Plcy
-----
1/1/1                                 3           100
-----
1 SAP('s) found
=====

SDP's where the protection policy Eth-CFM rate limit is exceeded
=====
SDP-Id          Service-Id  Plcy
-----
1:3             3           100
-----
1 SDP('s) found
=====

show system security cpu-protection eth-cfm-monitoring service-id 3 sap-id 1/1/1
=====
Flows exceeding the Eth-CFM monitoring rate limit
=====
Service-Id : 3
SAP-Id     : 1/1/1
Plcy       : 100
```

```
-----
```

Limit	MAC-Address First-Time	Level Last-Time	OpCode	Violation-Periods
0	8c:8c:8c:8c:8c:8c	1	18	
	03/21/2009 23:32:29	03/21/2009 23:34:39		4000000019
61234	8d:8d:8d:8d:8d:8d	2	19	
	03/21/2009 23:32:39	03/21/2009 23:34:59		4000000020
61234	Aggregated	3	20	
	03/21/2009 23:32:49	03/21/2009 23:35:19		4000000021
61234	8f:8f:8f:8f:8f:8f	4	21	
	03/21/2009 23:32:59	03/21/2009 23:35:39		4000000022
61234	90:90:90:90:90:90	5	22	
	03/21/2009 23:33:09	03/21/2009 23:35:59		4000000023
61234	91:91:91:91:91:91	6	23	
	03/21/2009 23:33:19	03/21/2009 23:36:19		4000000024
61234	92:92:92:92:92:92	7	24	
	03/21/2009 23:33:29	03/21/2009 23:36:39		4000000025
max	Aggregated	0	25	
	03/21/2009 23:33:39	03/21/2009 23:36:59		4000000026
0	94:94:94:94:94:94	1	26	
	03/21/2009 23:33:49	03/21/2009 23:37:19		4000000027

```
-----
```

9 flows(s) found

```
=====
```

show system security cpu-protection eth-cfm-monitoring service-id 3 sdp-id 1:3

```
=====
```

Flows exceeding the Eth-CFM monitoring rate limit

```
=====
```

Service-Id : 3  
 SDP-Id : 1:3  
 Plcy : 100

```
-----
```

Limit	MAC-Address First-Time	Level Last-Time	OpCode	Violation-Periods
0	8c:8c:8c:8c:8c:8c	1	18	
	03/21/2009 23:32:29	03/21/2009 23:34:39		3000000019
61234	8d:8d:8d:8d:8d:8d	2	19	
	03/21/2009 23:32:39	03/21/2009 23:34:59		3000000020
61234	Aggregated	3	20	
	03/21/2009 23:32:49	03/21/2009 23:35:19		3000000021
61234	8f:8f:8f:8f:8f:8f	4	21	
	03/21/2009 23:32:59	03/21/2009 23:35:39		3000000022
61234	90:90:90:90:90:90	5	22	
	03/21/2009 23:33:09	03/21/2009 23:35:59		3000000023
61234	91:91:91:91:91:91	6	23	
	03/21/2009 23:33:19	03/21/2009 23:36:19		3000000024
61234	92:92:92:92:92:92	7	24	
	03/21/2009 23:33:29	03/21/2009 23:36:39		3000000025
max	Aggregated	0	25	
	03/21/2009 23:33:39	03/21/2009 23:36:59		3000000026
0	94:94:94:94:94:94	1	26	
	03/21/2009 23:33:49	03/21/2009 23:37:19		3000000027

```
-----
```

9 flow(s) found

```
=====
```

show system security cpu-protection excessive-sources service-id 3 sdp-id 1:3

```
=====
```

Sources exceeding the per-source rate limit

```

=====
Service-Id : 3
SDP-Id    : 1:3
Plcy     : 100
Limit    : 65534
=====
MAC-Address      First-Time      Last-Time      Violation-Periods
-----
00:00:00:00:00:01 03/22/2009 00:41:59 03/22/2009 01:53:39 3000000043
00:00:00:00:00:02 03/22/2009 00:43:39 03/22/2009 01:56:59 3000000044
00:00:00:00:00:03 03/22/2009 00:45:19 03/22/2009 02:00:19 3000000045
00:00:00:00:00:04 03/22/2009 00:46:59 03/22/2009 02:03:39 3000000046
00:00:00:00:00:05 03/22/2009 00:48:39 03/22/2009 02:06:59 3000000047
-----
5 source(s) found
=====

show system security cpu-protection violators sdp
=====
SDP's where the protection policy overall rate limit is violated
=====
SDP-Id      Service-Id
Plcy Limit First-Time      Last-Time      Violation-Periods
-----
1:1          3
  100 61234 05/01/2010 01:43:53 06/27/2010 22:37:20 3000000007
1:2          3
  255 max  05/01/2010 01:43:55 06/27/2010 22:37:23 3000000008
1:3          3
  100 61234 05/01/2010 01:43:57 06/27/2010 22:37:26 3000000009
1:4          3
  255 max  05/01/2010 01:43:59 06/27/2010 22:37:29 3000000010
1:5          3
  100 61234 05/01/2010 01:44:01 06/27/2010 22:37:32 3000000011
-----
5 SDP('s) found
=====

show system security cpu-protection excessive-sources
=====
SAP's where the protection policy per-source rate limit is exceeded
=====
SAP-Id      Service-Id
Plcy Limit
-----
1/1/1          3
  100 65534
-----
1 SAP('s) found
=====
SDP's where the protection policy per-source rate limit is exceeded
=====
SDP-Id      Service-Id  Plcy  Limit
-----
1:3          3         100   65534
1:4          3         255   max
1:5          3         100   65534
-----
3 SDP('s) found
=====
    
```



```
show system security cpu-protection policy association
=====
Associations for CPU Protection policy 100
=====
Description : (Not Specified)
SAP associations
-----
Service Id : 3                               Type : VPLS
SAP 1/1/1                                     mac-monitoring
SAP 1/1/2                                     eth-cfm-monitoring aggr car
SAP 1/1/3                                     eth-cfm-monitoring
SAP 1/1/4
-----
Number of SAP's : 4
SDP associations
-----
Service Id : 3                               Type : VPLS
SDP 1:1                                     eth-cfm-monitoring aggr car
SDP 1:3                                     eth-cfm-monitoring aggr
SDP 1:5                                     mac-monitoring
SDP 17407:4123456789                       eth-cfm-monitoring car
-----
Number of SDP's : 4
Interface associations
-----
None
Managed SAP associations
-----
None
Video-Interface associations
-----
None
=====
Associations for CPU Protection policy 254
=====
Description : Default (Modifiable) CPU-Protection Policy assigned to Access
              Interfaces
SAP associations
-----
None
SDP associations
-----
None
Interface associations
-----
Router-Name : Base
              ies6If
Router-Name : vprn7
              vprn If
-----
Number of interfaces : 2
Managed SAP associations
-----
None
Video-Interface associations
-----
None
=====
Associations for CPU Protection policy 255
=====
Description : Default (Modifiable) CPU-Protection Policy assigned to Network
              Interfaces
SAP associations
```

```
-----  
None  
SDP associations  
-----  
Service Id   : 3                               Type    : VPLS  
  SDP 1:2  
  SDP 1:4          eth-cfm-monitoring  
Service Id   : 6                               Type    : IES  
  SDP 1:6  
Service Id   : 7                               Type    : VPRN  
  SDP 1:7  
Service Id   : 9                               Type    : Epipe  
  SDP 1:9  
Service Id   : 300                             Type    : VPLS  
  SDP 1:300  
-----  
Number of SDP's : 6  
Interface associations  
-----  
Router-Name : Base  
  system  
-----  
Number of interfaces : 1  
Managed SAP associations  
-----  
None  
Video-Interface associations  
-----  
None  
=====
```

show system security cpu-protection policy 100 association

```
=====
```

Associations for CPU Protection policy 100

```
=====
```

Description : (Not Specified)

SAP associations

```
-----  
Service Id   : 3                               Type    : VPLS  
  SAP 1/1/1          mac-monitoring  
  SAP 1/1/2          eth-cfm-monitoring aggr car  
  SAP 1/1/3          eth-cfm-monitoring  
  SAP 1/1/4  
-----
```

Number of SAP's : 4

SDP associations

```
-----  
Service Id   : 3                               Type    : VPLS  
  SDP 1:1          eth-cfm-monitoring aggr car  
  SDP 1:3          eth-cfm-monitoring aggr  
  SDP 1:5          mac-monitoring  
  SDP 17407:4123456789 eth-cfm-monitoring car  
-----
```

Number of SDP's : 4

Interface associations

```
-----  
None  
Managed SAP associations  
-----  
None  
Video-Interface associations  
-----
```

```

None
=====
A:bksim130#

show system security cpu-protection violators
=====
Ports where a rate limit is violated
=====
Port-Id
  Type Limit First-Time          Last-Time          Violation-Periods
-----
No ports found
=====
Interfaces where the protection policy overall rate limit is violated
=====
Interface-Name
  Plcy Limit First-Time          Last-Time          Router-Name
                        Violation-Periods
-----
No interfaces found
=====
SAP's where the protection policy overall rate limit is violated
=====
SAP-Id
  Plcy Limit First-Time          Last-Time          Service-Id
                        Violation-Periods
-----
1/1/1
  100 61234 05/01/2010 01:43:41 06/27/2010 22:37:02 3000000001
-----
1 SAP('s) found
=====
SDP's where the protection policy overall rate limit is violated
=====
SDP-Id
  Plcy Limit First-Time          Last-Time          Service-Id
                        Violation-Periods
-----
1:1
  100 61234 05/01/2010 01:43:41 06/27/2010 22:37:02 3000000001
1:2
  255 max 05/01/2010 01:43:43 06/27/2010 22:37:05 3000000002
1:3
  100 61234 05/01/2010 01:43:45 06/27/2010 22:37:08 3000000003
1:4
  255 max 05/01/2010 01:43:47 06/27/2010 22:37:11 3000000004
1:5
  100 61234 05/01/2010 01:43:49 06/27/2010 22:37:14 3000000005
-----
5 SDP('s) found
=====
Video clients where the protection policy per-source rate limit is violated
=====
Client IP Address
  Video-Interface
  Plcy Limit First-Time          Last-Time          Service-Id
                        Violation-Periods
-----
No clients found
=====
    
```

## cpu-protection

### Syntax

cpu-protection

### Context

[\[Tree\]](#) (clear cpu-protection)

### Full Context

clear cpu-protection

### Description

Commands in this context clear CPU protection data.

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## 6.65 cpu-scheduling

## cpu-scheduling

### Syntax

cpu-scheduling

### Context

[\[Tree\]](#) (show>card>virtual cpu-scheduling)

### Full Context

show card virtual cpu-scheduling

### Description

This command displays the CPU scheduling health on the card. The scheduling health is a measure of the hypervisor load and is expressed by the percentage of clock interrupts that arrive within an accepted time period compared to the last clock interrupt.

### Platforms

VSR

## cpu-scheduling

### Syntax

**cpu-scheduling**

### Context

[\[Tree\]](#) (clear>card>virtual cpu-scheduling)

### Full Context

clear card virtual cpu-scheduling

### Description

This command clears virtual CPU scheduling statistics on the card.

### Platforms

VSR

## 6.66 cpu-usage

## cpu-usage

### Syntax

**cpu-usage** *mda* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*] [**current**]

**cpu-usage** *mda* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*] [**current**] **esa-vm** *esa-id/vm-id*

**cpu-usage** *mda* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*] [**current**] [**show-oid**] **type** {**control-plane** | **data-plane**}

**cpu-usage** *mda* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*] [**current**] [**show-oid**] **type** {**control-plane** | **data-plane**} **esa-vm** *esa-id/vm-id*

### Context

[\[Tree\]](#) (show>isa>stats>tunnel-isa cpu-usage)

### Full Context

show isa statistics tunnel-isa cpu-usage

### Description

This command displays the CPU usage of the specified ISA. The information includes control plane usage and data plane usage.

The data plane usage collection depends on the configuration of the **config>isa>tunnel-grp>stats-collection>isa-dp-cpu-usage system** and collects usage every 5 minutes for the last 24 hours. The output also includes the current value.

## Parameters

### *count*

Displays information for the number of statistics intervals to be displayed (starting with the most recent).

**Values** 1 to 24

### *minutes*

Displays information about the specified period covered by the statistics to be displayed (starting with the most recent).

**Values** 1 to 1440

### *current*

Displays information about the current statistic value. The values of count and minutes are ignored by the system when this parameter is specified.

### *show-oid*

Displays information about the Object Identifier (OID) of the current statistical value.

### *mda*

Displays information about the specified ISA.

**Values** slot/mda

### *control-plane*

Displays information about the control plane.

### *data-plane*

Displays information about the data plane.

### *esa-vm*

Displays the ID of the configured ESA and ESA VM.

<b>Values</b>	esa-vm:	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show isa stats tunnel-isa cpu-usage** configuration.

### Output Example

```
show>isa>stats>tunnel-isa# cpu-usage 1/2
=====
STATISTICS FOR ISA 1/2
=====
INDEX          VALUE          START TIME          SAMPLING DURATION
-----
ISA CONTROL PLANE CPU USAGE PERCENTAGE (%)
16             0.05           2017/05/24 02:30:00 MIN 5
17             0.00           2017/05/24 02:25:00 MIN 5
18             0.03           2017/05/24 02:20:00 MIN 5
19             0.06           2017/05/24 02:15:00 MIN 5
20             0.05           2017/05/24 02:10:00 MIN 5
21             0.07           2017/05/24 02:05:00 MIN 5
22             0.06           2017/05/24 02:00:00 MIN 5
23             0.05           2017/05/24 01:55:00 MIN 5
24             0.00           2017/05/24 01:50:00 MIN 5
25             0.07           2017/05/24 01:45:00 MIN 5
26             0.01           2017/05/24 01:40:00 MIN 5
27             0.04           2017/05/24 01:35:00 MIN 5
28             0.01           2017/05/24 01:30:00 MIN 5
29             0.00           2017/05/24 01:25:00 MIN 5
30             0.01           2017/05/24 01:20:00 MIN 5
31             0.01           2017/05/24 01:15:00 MIN 5
32             0.01           2017/05/24 01:10:00 MIN 5
33             0.06           2017/05/24 01:05:00 MIN 5
34             0.01           2017/05/24 01:00:00 MIN 5
35             0.02           2017/05/24 00:55:00 MIN 5
36             0.03           2017/05/24 00:50:00 MIN 5
37             0.03           2017/05/24 00:45:00 MIN 5
38             0.01           2017/05/24 00:40:00 MIN 5
39             0.01           2017/05/24 00:35:00 MIN 5
40             0.02           2017/05/24 00:30:00 MIN 5
41             0.01           2017/05/24 00:25:00 MIN 5
42             0.03           2017/05/24 00:20:00 MIN 5
43             0.02           2017/05/24 00:15:00 MIN 5
44             0.06           2017/05/24 00:10:00 MIN 5
45             0.05           2017/05/24 00:05:00 MIN 5
46             0.00           2017/05/24 00:00:00 MIN 5
47             0.02           2017/05/23 23:55:00 MIN 5
48             0.04           2017/05/23 23:50:00 MIN 5
49             0.03           2017/05/23 23:45:00 MIN 5
50             0.06           2017/05/23 23:40:00 MIN 5
51             0.00           2017/05/23 23:35:00 MIN 5
52             0.05           2017/05/23 23:30:00 MIN 5
53             0.02           2017/05/23 23:25:00 MIN 5
54             0.03           2017/05/23 23:20:00 MIN 5
55             0.02           2017/05/23 23:15:00 MIN 5
56             0.06           2017/05/23 23:10:00 MIN 5
57             0.04           2017/05/23 23:05:00 MIN 5
58             0.00           2017/05/23 23:00:00 MIN 5
59             0.00           2017/05/23 22:55:00 MIN 5
60             0.04           2017/05/23 22:50:00 MIN 5
61             0.03           2017/05/23 22:45:00 MIN 5
62             0.03           2017/05/23 22:40:00 MIN 5
63             0.04           2017/05/23 22:35:00 MIN 5
64             0.05           2017/05/23 22:30:00 MIN 5
65             0.02           2017/05/23 22:25:00 MIN 5
66             0.05           2017/05/23 22:20:00 MIN 5
67             0.03           2017/05/23 22:15:00 MIN 5
68             0.01           2017/05/23 22:10:00 MIN 5
69             0.02           2017/05/23 22:05:00 MIN 5
70             0.01           2017/05/23 22:00:00 MIN 5
```

71	0.05	2017/05/23 21:55:00	MIN 5
72	0.02	2017/05/23 21:50:00	MIN 5
73	0.02	2017/05/23 21:45:00	MIN 5
74	0.00	2017/05/23 21:40:00	MIN 5
75	0.00	2017/05/23 21:35:00	MIN 5
76	0.01	2017/05/23 21:30:00	MIN 5
77	0.06	2017/05/23 21:25:00	MIN 5
78	0.01	2017/05/23 21:20:00	MIN 5
79	0.01	2017/05/23 21:15:00	MIN 5
80	0.00	2017/05/23 21:10:00	MIN 5
81	0.06	2017/05/23 21:05:00	MIN 5
82	0.06	2017/05/23 21:00:00	MIN 5
83	0.00	2017/05/23 20:55:00	MIN 5
84	0.02	2017/05/23 20:50:00	MIN 5
85	0.00	2017/05/23 20:45:00	MIN 5
86	0.00	2017/05/23 20:40:00	MIN 5
87	0.06	2017/05/23 20:35:00	MIN 5
88	0.01	2017/05/23 20:30:00	MIN 5
89	0.01	2017/05/23 20:25:00	MIN 5
90	0.02	2017/05/23 20:20:00	MIN 5
91	0.03	2017/05/23 20:15:00	MIN 5
92	0.04	2017/05/23 20:10:00	MIN 5
93	0.05	2017/05/23 20:05:00	MIN 5
94	0.05	2017/05/23 20:00:00	MIN 5
95	0.05	2017/05/23 19:55:00	MIN 5
96	0.05	2017/05/23 19:50:00	MIN 5
97	0.06	2017/05/23 19:45:00	MIN 5
98	0.06	2017/05/23 19:40:00	MIN 5
99	0.05	2017/05/23 19:35:00	MIN 5
100	0.05	2017/05/23 19:30:00	MIN 5
101	0.04	2017/05/23 19:25:00	MIN 5
102	0.04	2017/05/23 19:20:00	MIN 5
103	0.04	2017/05/23 19:15:00	MIN 5
104	0.05	2017/05/23 19:10:00	MIN 5
105	0.04	2017/05/23 19:05:00	MIN 5
106	0.03	2017/05/23 19:00:00	MIN 5
107	0.03	2017/05/23 18:55:00	MIN 5
108	0.01	2017/05/23 18:50:00	MIN 5
109	0.02	2017/05/23 18:45:00	MIN 5
110	0.02	2017/05/23 18:40:00	MIN 5
111	0.02	2017/05/23 18:35:00	MIN 5
112	0.01	2017/05/23 18:30:00	MIN 5
113	0.02	2017/05/23 18:25:00	MIN 5
114	0.02	2017/05/23 18:20:00	MIN 5
115	0.01	2017/05/23 18:15:00	MIN 5
116	0.02	2017/05/23 18:10:00	MIN 5
117	0.01	2017/05/23 18:05:00	MIN 5
118	0.02	2017/05/23 18:00:00	MIN 5
119	0.01	2017/05/23 17:55:00	MIN 5
120	0.08	2017/05/23 17:50:48	MIN 4 SEC 12
ISA DATA PLANE CPU USAGE PERCENTAGE (%)			
1 (CURRENT)	13.13	2017/05/24 03:45:00	SEC 25
2	13.24	2017/05/24 03:40:00	MIN 5
3	13.43	2017/05/24 03:35:00	MIN 5
4	13.30	2017/05/24 03:30:00	MIN 5
5	13.26	2017/05/24 03:25:00	MIN 5
6	13.16	2017/05/24 03:20:00	MIN 5
7	13.16	2017/05/24 03:15:00	MIN 5
8	13.22	2017/05/24 03:10:00	MIN 5
9	13.31	2017/05/24 03:05:00	MIN 5
10	13.95	2017/05/24 03:00:00	MIN 5
11	13.71	2017/05/24 02:55:00	MIN 5
12	14.00	2017/05/24 02:50:00	MIN 5
13	13.26	2017/05/24 02:45:00	MIN 5



14	13.11	2017/05/24 02:40:00	MIN 5
15	13.09	2017/05/24 02:35:00	MIN 5
16	13.22	2017/05/24 02:30:00	MIN 5
17	13.91	2017/05/24 02:25:00	MIN 5
18	13.53	2017/05/24 02:20:00	MIN 5
19	13.83	2017/05/24 02:15:00	MIN 5
20	13.05	2017/05/24 02:10:00	MIN 5
21	13.10	2017/05/24 02:05:00	MIN 5
22	13.09	2017/05/24 02:00:00	MIN 5
23	13.72	2017/05/24 01:55:00	MIN 5
24	13.65	2017/05/24 01:50:00	MIN 5
25	13.81	2017/05/24 01:45:00	MIN 5
26	13.31	2017/05/24 01:40:00	MIN 5
27	13.10	2017/05/24 01:35:00	MIN 5
28	13.10	2017/05/24 01:30:00	MIN 5
29	13.31	2017/05/24 01:25:00	MIN 5
30	13.92	2017/05/24 01:20:00	MIN 5
31	13.58	2017/05/24 01:15:00	MIN 5
32	13.64	2017/05/24 01:10:00	MIN 5
33	13.11	2017/05/24 01:05:00	MIN 5
34	13.18	2017/05/24 01:00:00	MIN 5
35	13.27	2017/05/24 00:55:00	MIN 5
36	13.90	2017/05/24 00:50:00	MIN 5
37	13.59	2017/05/24 00:45:00	MIN 5
38	13.79	2017/05/24 00:40:00	MIN 5
39	13.16	2017/05/24 00:35:00	MIN 5
40	13.24	2017/05/24 00:30:00	MIN 5
41	13.28	2017/05/24 00:25:00	MIN 5
42	14.02	2017/05/24 00:20:00	MIN 5
43	13.65	2017/05/24 00:15:00	MIN 5
44	13.66	2017/05/24 00:10:00	MIN 5
45	13.07	2017/05/24 00:05:00	MIN 5
46	13.12	2017/05/24 00:00:00	MIN 5
47	13.32	2017/05/23 23:55:00	MIN 5
48	13.80	2017/05/23 23:50:00	MIN 5
49	13.69	2017/05/23 23:45:00	MIN 5
50	13.37	2017/05/23 23:40:00	MIN 5
51	13.05	2017/05/23 23:35:00	MIN 5
52	13.07	2017/05/23 23:30:00	MIN 5
53	13.58	2017/05/23 23:25:00	MIN 5
54	13.55	2017/05/23 23:20:00	MIN 5
55	13.80	2017/05/23 23:15:00	MIN 5
56	13.18	2017/05/23 23:10:00	MIN 5
57	13.13	2017/05/23 23:05:00	MIN 5
58	13.12	2017/05/23 23:00:00	MIN 5
59	13.80	2017/05/23 22:55:00	MIN 5
60	13.55	2017/05/23 22:50:00	MIN 5
61	13.77	2017/05/23 22:45:00	MIN 5
62	13.08	2017/05/23 22:40:00	MIN 5
63	9.77	2017/05/23 22:35:00	MIN 5
64	0.02	2017/05/23 22:30:00	MIN 5
65	0.02	2017/05/23 22:25:00	MIN 5
66	0.01	2017/05/23 22:20:00	MIN 5
67	0.00	2017/05/23 22:15:00	MIN 5
68	7.08	2017/05/23 22:10:00	MIN 5
69	13.09	2017/05/23 22:05:00	MIN 5
70	13.58	2017/05/23 22:00:00	MIN 5
71	13.63	2017/05/23 21:55:00	MIN 5
72	6.34	2017/05/23 21:50:00	MIN 5
73	0.00	2017/05/23 21:45:00	MIN 5
74	0.00	2017/05/23 21:40:00	MIN 5
75	0.00	2017/05/23 21:35:00	MIN 5
76	0.00	2017/05/23 21:30:00	MIN 5
77	0.00	2017/05/23 21:25:00	MIN 5

```
78      0.00      2017/05/23 21:20:00 MIN 5
79      0.00      2017/05/23 21:15:00 MIN 5
80      0.00      2017/05/23 21:10:00 MIN 5
81      0.00      2017/05/23 21:05:00 MIN 5
82      0.00      2017/05/23 21:00:00 MIN 5
83      0.00      2017/05/23 20:55:00 MIN 5
84      0.00      2017/05/23 20:50:00 MIN 5
85      0.00      2017/05/23 20:45:00 MIN 5
86      0.00      2017/05/23 20:40:00 MIN 5
87      0.00      2017/05/23 20:35:00 MIN 5
88      0.00      2017/05/23 20:30:00 MIN 5
89      0.00      2017/05/23 20:25:00 MIN 5
90      0.00      2017/05/23 20:20:00 MIN 5
91      0.00      2017/05/23 20:15:00 MIN 5
92      0.00      2017/05/23 20:10:00 MIN 5
93      0.00      2017/05/23 20:05:00 MIN 5
94      0.00      2017/05/23 20:00:00 MIN 5
95      0.00      2017/05/23 19:55:00 MIN 5
96      0.00      2017/05/23 19:50:00 MIN 5
97      0.00      2017/05/23 19:45:00 MIN 5
98      0.00      2017/05/23 19:40:00 MIN 5
99      0.00      2017/05/23 19:35:00 MIN 5
100     0.00      2017/05/23 19:30:00 MIN 5
101     0.00      2017/05/23 19:25:00 MIN 5
102     0.00      2017/05/23 19:20:00 MIN 5
103     0.00      2017/05/23 19:15:00 MIN 5
104     0.00      2017/05/23 19:10:00 MIN 5
105     0.00      2017/05/23 19:05:00 MIN 5
106     0.00      2017/05/23 19:00:00 MIN 5
107     0.00      2017/05/23 18:55:00 MIN 5
108     0.00      2017/05/23 18:50:00 MIN 5
109     0.00      2017/05/23 18:45:00 MIN 5
110     0.00      2017/05/23 18:40:00 MIN 5
111     0.00      2017/05/23 18:35:00 MIN 5
112     0.00      2017/05/23 18:30:00 MIN 5
113     0.00      2017/05/23 18:25:00 MIN 5
114     0.00      2017/05/23 18:20:00 MIN 5
115     0.00      2017/05/23 18:15:00 MIN 5
116     0.00      2017/05/23 18:10:00 MIN 5
117     0.00      2017/05/23 18:05:00 MIN 5
118     0.00      2017/05/23 18:00:00 MIN 5
119     0.00      2017/05/23 17:55:00 MIN 5
120     0.00      2017/05/23 17:50:48 MIN 4 SEC 12
```

```
-----
NO. OF ENTRIES: 240
=====
```

## 6.67 create-sticky-lease

### create-sticky-lease

#### Syntax

```
create-sticky-lease host-name [mac ieee-address] [circuit-id circuit-id] [client-id client-id] [requested-ip-  
address ip-address] [circuit-id-hex circuit-id-hex-string] [client-id-hex client-id-hex-string]
```

## Context

[\[Tree\]](#) (tools>perform>router>dhcp>server>pool create-sticky-lease)

## Full Context

tools perform router dhcp local-dhcp-server pool create-sticky-lease

## Description

This command tries to create a lease-state in the specified local-dhcp-server pool with the supplied parameters. The hostname uniquely identifies this lease for subsequent operations. mac, circuit-id, and client-id should also have a unique combination of values according to the configured user-ident variables. If the requested-ip-address is provided the server tries to create a lease with this address. If this address is not available in the pool, the command fails.

## Parameters

### *host-name*

Specifies a string to identify the lease, up to 32 characters. If not specified, it can be internally generated based on MAC@ or another key.

### *ieee-address*

Specifies the MAC address in xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx format.

### *circuit-id*

Specifies the circuit-id string, up to 255 characters.

### *client-id*

Specifies the client-id string, up to 255 characters.

### *ip-address*

Specifies the IPv4 address in dotted notation a.b.c.d.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 6.68 credit-control

### credit-control

## Syntax

**credit-control** [**subscriber** *sub-ident-string*]

**credit-control out-of-credit** [**action** *action*] [**summary**]

**credit-control extended-failure-handling** [*state*] [**summary**]

## Context

[\[Tree\]](#) (show>service>active-subscribers credit-control)

## Full Context

```
show service active-subscribers credit-control
```

## Description

This command displays active subscriber credit control information. Without additional filters, the output lists information for all active subscribers.

The output of this command can be filtered:

- per subscriber by specifying the optional **subscriber** *sub-ident-string* parameter
- per all subscribers that are out of credit by specifying the **out-of-credit** parameter with the optional **action** *action* parameter
- per subscribers that have a Diameter Gy session with Extended Failure Handling (EFH) enabled by specifying the **extended-failure-handling** parameter with the optional *state* parameter.

## Parameters

### **sub-ident-string**

Displays credit control information for the specified subscriber, up to 32 characters.

### **out-of-credit [action action]**

Displays credit control information for subscribers that are out of credit and, optionally, have the specified out of credit action enabled.

**Values** continue, block-category, change-service-level

### **extended-failure-handling [state]**

Displays credit control information for subscribers with a Diameter Gy session with EFH enabled. The optional *state* parameter lists subscribers for which the Diameter Gy session EFH is active, inactive, or both (all).

**Values** active, inactive, all

### **summary**

Lists the number of matching entries for the specified filter.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of active subscriber's credit control information.

### Output Example

```
A:eng-BNG-2 # show service active-subscribers credit-control
=====
Active Subscribers
=====
-----
Subscriber user_1
          (no-prof)
-----
-----
```

```

(1) SLA Profile Instance sap:1/1/20:841 - sla:no-prof
-----
Category Map          : cat-map-01
Number of categories
static                : 1
gx-session            : 1
gx-pcc                : 0
Category Name         : category-01
Ingress Queues        : (Not Specified)
Egress Queues         : 1
Ingress Policers      : (Not Specified)
Egress Policers       : (Not Specified)
Idle Timeout          : 1000
-----
IP Address            MAC Address          Session          Origin          Svc          Fwd
-----
192.168.0.14          00:00:10:10:12:13  N/A              DHCP            1000         Y
-----
Number of active subscribers : 1
=====
    
```

The following table describes credit control output fields.

Table 90: Credit Control Field Descriptions

Label	Description
Credit Control Policy	The credit control policy name in use for this subscriber session
Category Map	The active category map in use for this subscriber session
Diameter Session Gy	The Diameter Gy session ID
CC Failure Handling	The current value for Credit Control Failure Handling (CCFH) as configured in the Diameter Gy application policy or as received in an Answer message from the Online Charging Server (OCS) in the CCFH AVP Values: terminate, continue, or retry-and-terminate
Extended Failure Handling (EFH) - State <sup>1</sup>	The EFH state: active — EFH is enabled and currently active inactive — EFH is enabled and currently inactive
EFH - Attempts <sup>1 2</sup>	The number of times interim credit is assigned to all rating groups followed by an attempt to establish a new Diameter Gy session with the Online Charging Server (OCS), or credit control server
EFH - Maximum Attempts <sup>1 2</sup>	The configured maximum attempts value in the Diameter application policy

Label	Description
	When an attempt to establish a new Diameter Gy session with the OCS continues to fail after the maximum attempts value is reached, then the user session is terminated (the subscriber hosts are deleted from the system).
EFH - Active Time <sup>1 2</sup>	The time since the EFH state became active for this subscriber session
EFH - Total Active Time <sup>1</sup>	The accumulated time of all occurrences that EFH was active during the lifetime of this subscriber session
EFH - Total Active Count <sup>1</sup>	The number of times that EFH was active during the lifetime of this subscriber session
Number of categories - static	The number of static categories in use for this subscriber session.
Number of categories - gx-session	The number of categories reserved for this subscriber session for Gx session level Usage Monitoring.
Number of categories - gx-pcc	The number of dynamic categories in use by this subscriber session for Gx PCC rule-based Usage Monitoring.
Category - Category Name	The name of the category as configured in the category map
Category - Ingress Queues	The ingress queues for which credit control is applied in this category as configured in the category map
Category - Egress Queues	The egress queues for which credit control is applied in this category as configured in the category map
Category - Ingress Policers	The ingress policers for which credit control is applied in this category as configured in the category map
Category - Egress Policers	The egress policers for which credit control is applied in this category as configured in the category map
Category - Credit Volume Used	The used total octets counter (ingress and egress combined) since the last usage reporting of this rating group
Category - Credit Volume Avail.	The remaining total granted octets available before a new credit negotiation is triggered for this rating group (category) or the out of credit action is triggered
Category - Credit Volume Thres.	The volume quota threshold in octets as received from the OCS.  When the Credit Volume Available octets fall below the Credit Volume Threshold, a new credit negotiation is

Label	Description
	triggered for this rating group (category). The Credit Volume Threshold value is set to Expired and Credit Negotiating is set to True.
Category - Credit Time Used	The number of seconds passed since the last reporting of this rating group
Category - Credit Time Avail.	The remaining number of seconds before a new credit negotiation is triggered for this rating group (category) or the out of credit action is triggered
Category - Credit Time Thres.	<p>The time quota threshold in seconds as received from the OCS</p> <p>When the Credit Time Available falls below the Credit Time Threshold, a new credit negotiation is triggered for this rating group (category). The Credit Time Threshold value is set to Expired and Credit Negotiating is set to true.</p>
Category - Credit Expired	<p>The credit expired value:</p> <p>False—Negotiated credit is still available</p> <p>True—All granted credit is exhausted; either new credit is being negotiated with the OCS or the out of credit action is activated.</p>
Category - Credit Negotiating	<p>The credit negotiating value:</p> <p>False—There is no credit being requested to the OCS</p> <p>True—New credit is being requested to the OCS</p>
Category - Out Of Credit Action	<p>The out of credit action value:</p> <p>None—Out-of-credit action is not active</p> <p>When the out-of-credit action is active, the value is set to one of: ChangeServiceLevel, BlockCategory, Continue, or DisconnectHost</p>
Category - Quota Holding Time	<p>The Idle timeout associated with the granted quota. When no traffic associated with the quota is observed for the time specified, a credit negotiation is triggered with the OCS.</p>
Category - Validity Time Used	The number of seconds passed since the Validity Time was installed
Category - Validity Time Avail.	The remaining number of seconds of the Validity Time before a new usage reporting is triggered for this rating group (category)

Label	Description
Category - EFH Unreported Credit - Current Volume <sup>1 2</sup>	The unreported volume credit for the current occurrence of EFH in an active state. This counter includes the unreported used volume credit for the initial Diameter Gy session that caused the active EFH state and the unreported volume interim credit for previous attempts. Used interim credit for the current attempt is shown in the Credit Volume Used counter.
Category - EFH Unreported Credit - Total Volume <sup>1</sup>	The accumulated total unreported volume credit for the previous occurrences of EFH in an active state. The total counter is updated when the EFH state toggles from active to inactive. When interim credit reporting is enabled, the counters are reset to zero when the actual usage reporting for this rating group (category) occurs. When interim credit reporting is disabled, the counters accumulate the total unreported volume credit during the lifetime of the subscriber session.
Category - EFH Unreported Credit - Current Time <sup>1 2</sup>	The unreported time credit for the current occurrence of EFH in an active state. This counter includes the unreported used time credit for the initial Diameter Gy session that caused the active EFH state and the unreported time interim credit for previous attempts. Used interim credit for the current attempt is shown in the Credit Time Used counter.
Category - EFH Unreported Credit - Total Time <sup>1</sup>	The accumulated total unreported time credit for the previous occurrences of EFH in an active state. The total counter is updated when the EFH state toggles from active to inactive. When interim credit reporting is enabled, the counters are reset to zero when the actual usage reporting for this rating group (category) occurs. When interim credit reporting is disabled, the counters accumulate the total unreported time credit during the lifetime of the subscriber session.
Category - HTTP Rdr URL Override	The URL returned by a Diameter OCS in a Credit Control Answer (CCA) message Final-Unit-Indication/Redirect-Server/Redirect-Server-Address AVP. This URL is used for Diameter Gy http-redirect out-of-credit actions when <b>allow-override</b> is configured.



**Note:**

1. These fields are only shown when EFH is enabled in the Diameter application policy. EFH is enabled using the **configure subscriber-mgmt diameter-application-policy gy extended-failure-handling no shutdown** command.
2. These fields are only shown when the EFH state is active.



## 6.69 credit-control-policy

### credit-control-policy

#### Syntax

```
credit-control-policy [policy-name]  
credit-control-policy policy-name subscribers
```

#### Context

[\[Tree\]](#) (show>subscr-mgmt credit-control-policy)

#### Full Context

```
show subscriber-mgmt credit-control-policy
```

#### Description

This command displays credit control policy information.

#### Parameters

##### policy-name

Specifies the credit control policy name, up to 32 characters.

##### subscribers

Displays the subscribers associated with the credit control policy.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 6.70 credit-reset

### credit-reset

#### Syntax

```
credit-reset sap sap-id subscriber sub-ident-string sla-profile sla-profile-name {category category-name | all-categories} [spi-sharing-type spi-sharing-type] [spi-sharing-id spi-sharing-id]  
credit-reset sap sap-id ip ip-address {category category-name | all-categories} [mac mac-address]  
credit-reset svc service-id ip ip-address {category category-name | all-categories} [mac mac-address]
```

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt credit-reset)

## Full Context

tools perform subscriber-mgmt credit-reset

## Description

This command resets the credit for an SLA-profile instance.

## Parameters

### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

### *sub-ident-string*

Resets the credit for the specified subscriber identification, up to 32 characters.

### *sla-profile-name*

Resets the credit for the specified SLA profile, up to 32 characters.

### *category-name*

Resets the credit for the specified category, up to 32 characters.

### *spi-sharing-type*

Resets the credit for sessions with the specified SPI sharing type.

**Values** per-group, per-session-ipoe, per-session-ppp

### *spi-sharing-id*

Resets the credit for sessions with the specified SPI sharing type and sharing identifier. The SPI sharing identifier is:

- an identifier when the sharing type is per-group
- an internal PPP or IPoE identifier when the sharing type is a per-PPP or per-IPoE session

**Values** 0 to 4294967295

### *ip-address*

Resets the credit for the specified IP address.

### *mac-address*

Resets the credit for the specified MAC IP address.

### *sub-profile-string*

Resets the credit for the specified subscriber profile, up to 32 characters.

### *service-id*

Resets the credit for the specified service ID.

**Values** service-id: 1 2147483647 svc-name: up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 6.71 cron

cron

### Syntax

cron

### Context

[\[Tree\]](#) (show>system cron)

### Full Context

show system cron

### Description

Commands in this context display CRON information.

### Platforms

All

## 6.72 crp

crp

### Syntax

crp [*family* | *ip-address*]

### Context

[\[Tree\]](#) (show>router>pim crp)

### Full Context

show router pim crp

### Description

This command displays PIM candidate RP (CRP) information received at the elected Bootstrap router (BSR).

### Parameters

*family*

Displays CRP information for the address family.

**Values** ipv4, ipv6

***ip-address***

Displays the IP address of the candidate RP.

**Platforms**

All

**Output**

The following output is an example of a PIM CRP configuration.

**Output Example**

```
A:WAS# show router pim crp
=====
PIM Candidate RPs
=====
RP Address      Group Address    Priority    Holdtime  Expiry Time
-----
239.22.187.236  224.0.0.0/4     192        150       0d 00:02:19
239.22.187.239  224.0.0.0/4     192        150       0d 00:02:19
239.22.187.240  224.0.0.0/4     192        150       0d 00:02:09
-----
Candidate RPs : 3
=====
A:WAS#

A:WAS# show router pim crp 239.22.187.236
=====
PIM Candidate RPs
=====
RP Address      Group Address    Priority    Holdtime  Expiry Time
-----
239.22.187.236  224.0.0.0/4     192        150       0d 00:01:43
-----
Candidate RPs : 1
=====
A:WAS#
```

Table 91: PIM CRP Fields provides PIM CRP field descriptions.

Table 91: PIM CRP Fields

Label	Description
RP Address	The Candidate RP address
Group Address	The range of multicast group addresses for which the CRP is the Candidate RP
Priority	The Candidate RP's priority for becoming a rendezvous point (RP). This value is used to elect RP for a group range. A value of 0 is considered as the highest priority.

Label	Description
Holdtime	The hold time of the candidate RP. It is used by the Bootstrap router to time out the RP entries if it does not listen to another CRP advertisement within the holdtime period.
Expiry	The minimum time remaining before the CRP will be declared down. If the local router is not the BSR, this value is 0.
Candidate RPs	The number of CRP entries.

## 6.73 cspf

### cspf

#### Syntax

**cspf** *to ip-addr* [*from ip-addr*] [*bandwidth bandwidth*] [*include-bitmap bitmap*] [*exclude-bitmap bitmap*] [*hop-limit limit*] [*exclude-address excl-addr*] [*use-te-metric*] [*strict-srlg*] [*srlg-group*] [*exclude-node excl-node-id*] [*excl-node-id*] [*skip-interface interface-name*] [*ds-class-type class-type*] [*cspf-reqtype req-type*] [*least-fill-min-thd thd*] [*setup-priority val*] [*hold-priority val*]

#### Context

**[Tree]** (tools>perform>router>mpls cspf)

#### Full Context

tools perform router mpls cspf

#### Description

This command computes a CSPF path with specified user constraints.

#### Parameters

##### **to ip-addr**

Specifies the destination IP address.

**Values** a.b.c.d

##### **from ip-addr**

Specifies the originating IP address.

**Values** a.b.c.d

##### **bandwidth bandwidth**

Specifies the amount of bandwidth in Mb/s to be reserved.

**Values** 1 to 6400000

**include-bitmap** *bitmap*

Specifies to include a bit-map that specifies a list of admin groups that should be included during setup. Accepted in decimal, hex, or binary.

**Values** 1 to 4294967295

**exclude-bitmap** *bitmap*

Specifies to exclude a bit-map that specifies a list of admin groups that should be included during setup. Accepted in decimal, hex, or binary.

**Values** 1 to 4294967295

**hop-limit** *limit*

Specifies the maximum number of hops for the path.

**Values** 2 to 255

**exclude-address** *ip-addr*

Specifies IP addresses, up to eight, that should be excluded in the path computation.

**Values** a.b.c.d

**use-te-metric**

Specifies the use of the link traffic engineering metric to optimize the path. By default, the link IGP metric is used.

**strict-srlg**

Specifies the computation of a path which is strictly disjoint from links which are members of the entered SRLG

**srlg-group** *grp-id*

Specifies up to eight Shared Risk Loss Groups (SRLGs) that path computation should avoid, or must avoid if the **strict-srlg** option is enabled. An SRLG group represents a set of interfaces which could be subject to the same failures or defects and thus share the same risk of failing.

**Values** 0 to 4294967295

**exclude-node** *excl-node-id*

Specifies a list of up to eight addresses, that should be excluded during the path computation.

**Values** a.b.c.d

**skip-interface** *interface-name*

Specifies an interface name of up to 32 characters, that should be skipped during the path computation.

**ds-class-type** *class-type*

Specifies the class type (CT) to associate with the computed path.

**Values** 0 to 7

**cspf-reqtype *req-type***

Specifies the if all ECMP paths or a single path, selected randomly or using the **least-fill** parameter, should be returned.

**Values** all, random, least-fill

**least-fill-min-thd *thd***

Specifies the use of the least-fill path selection method in the computation of the path.

**Values** 1 to 100

**setup-priority *val***

Specifies the setup priority value to use for the path.

**Values** 0 to 7

**hold-priority *val***

Specifies the hold priority value to use for the path.

**Values** 0 to 7

**Platforms**

All

## 6.74 custom-hash

### custom-hash

**Syntax**

custom-hash

**Context**

[\[Tree\]](#) (show>system>security>hash-control custom-hash)

**Full Context**

show system security hash-control custom-hash

**Description**

This command displays custom hash information.

**Platforms**

All

## 6.75 custom-protocol

### custom-protocol

#### Syntax

**custom-protocol**

#### Context

[\[Tree\]](#) (show>app-assure>group>policy custom-protocol)

#### Full Context

show application-assurance group policy custom-protocol

#### Description

This command displays application-assurance policy custom protocol information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 6.76 customer

### customer

#### Syntax

**customer** [*customer-id* [**site** *customer-site-name* [**associated subs**]]]

#### Context

[\[Tree\]](#) (show>service customer)

#### Full Context

show service customer

#### Description

This command displays service customer information.

#### Parameters

***customer-id***

Displays only information for the specified customer ID.



**Values** 1 to 2147483647

**Default** Displays all customer IDs.

**site customer-site-name**

Specifies the customer site which is an anchor point for an ingress and egress virtual scheduler hierarchy.

**associated subs**

Displays information for the associated subscribers.

**Platforms**

All

**Output**

The following output is an example of customer information, and [Table 92: Show Customer Field Descriptions](#) describes the output fields.

**Output Example**

```
*A:ALA-12# show service customer
=====
Customers
=====
Customer-ID : 1
Contact      : Manager
Description  : Default customer
Phone       : (123) 555-1212

Customer-ID : 2
Contact      : Tech Support
Description  : Nokia
Phone       : (234) 555-1212

Customer-ID : 3
Contact      : Fred
Description  : Nokia
Phone       : (345) 555-1212

Customer-ID : 6
Contact      : Ethel
Description  : Epipe Customer
Phone       : (456) 555-1212

Customer-ID : 7
Contact      : Lucy
Description  : ABC Customer
Phone       : (567) 555-1212

Customer-ID : 8
Contact      : Customer Service
Description  : IES Customer
Phone       : (678) 555-1212

Customer-ID : 274
Contact      : Test Engineer on Duty
Description  : ABC Company
Phone       : 650 123-4567
```

```

Customer-ID : 94043
Contact      : Test Engineer on Duty
Description  : TEST Customer
Phone       : (789) 555-1212

-----
Total Customers : 8
-----
*A:ALA-12#

*A:ALA-12# show service customer 274
=====
Customer 274
=====
Customer-ID : 274
Contact      : Test Engineer on Duty
Description  : ABC Company
Phone       : 650 123-4567
-----
Multi Service Site
-----
Site        : west
Description : (Not Specified)
=====
*A:ALA-12#

*A:ALA-12# show service customer 274 site west
=====
Customer 274
=====
Customer-ID : 274
Contact      : Test Engineer on Duty
Description  : ABC Company
Phone       : 650 123-4567
-----
Multi Service Site
-----
Site        : west
Description : (Not Specified)
Assignment  : Card 5
I. Sched Pol: SLA1
E. Sched Pol: (Not Specified)
-----
Service Association
-----
No Service Association Found.
=====
*A:ALA-12#
    
```

Table 92: Show Customer Field Descriptions

Label	Description
Customer-ID	The ID that uniquely identifies a customer.
Contact	The name of the primary contact person.
Description	Generic information about the customer.

Label	Description
Phone	The phone/pager number to reach the primary contact person.
Total Customers	The total number of customers configured.
Multi-service site	
Site	Multi-service site name. A multi-service customer site is a group of SAPs with common origination and termination points.
Description	Information about a specific customer's multi-service site.
Assignment	The port ID, MDA, or card number, where the SAP's that are members of this multi- service site are defined.
I. Sched Pol	The ingress QoS scheduler policy assigned to this multi-service site.
E. Sched Pol	The egress QoS scheduler policy assigned to this multi-service site.
Service Association	
Service-ID	The ID that uniquely identifies a service.
SAP	The SAP assigned to the service.

## customer

### Syntax

**customer** *customer-id* **site** *customer-site-name* [{**ingress** | **egress**}] [**arbiter** {*name* | **root**}] [{**detail** | **depth**}]

### Context

[\[Tree\]](#) (show>qos>policer-hierarchy customer)

### Full Context

show qos policer-hierarchy customer

### Description

This command displays information about the policer hierarchy per customer.

### Parameters

#### **customer-id**

Specifies the customer ID that identifies the customer to the service.

#### **customer-site-name**

Specifies the unique customer site name, up to 32 characters.

**ingress**

Displays ingress queue group information.

**egress**

Displays egress queue group information.

**name**

Displays information about the name of the QoS arbiter.

**root**

Displays information about the arbiter root.

**detail**

Displays detailed information.

**depth**

Displays the bucket depth, parenting, rate, and traffic information related to a policer.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

**customer**

**Syntax**

**customer** *customer-id* **site** *customer-site-name* [**scheduler** *scheduler-name*] [{**ingress** | **egress**}] [**detail**]

**Context**

[\[Tree\]](#) (show>qos>scheduler-hierarchy customer)

**Full Context**

show qos scheduler-hierarchy customer

**Description**

This command displays the scheduler hierarchy per customer multiservice site.

**Parameters**

**customer-id**

Specifies the ID number associated with a particular customer.

**Values** 1 to 2147483647

**customer-site-name**

Specifies the unique name customer site name.

**scheduler-name**

Specifies the unique scheduler name created in the context of the scheduler policy.

**ingress**

Displays ingress SAP customer scheduler stats.

**egress**

Displays egress SAP customer scheduler stats.

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of customer scheduler hierarchy information, and [Table 93: Show QoS Scheduler-Hierarchy Customer Output Fields](#) describes the customer scheduler hierarchy fields.

**Output Example**

```
*A:PE# show qos scheduler-hierarchy customer 1 site "s1"
=====
Scheduler Hierarchy - Customer 1 MSS s1
=====
Root (Ing)
| slot(1)
|--(S) : s1
|   |
|   |--(S) : Tier0Ingress:1->1/1/1->1
|   |   |
|   |   |--(Q) : 1->1/1/1->1 1-1
|   |   |--(Q) : 1->1/1/1->1 2-1
|   |   |--(Q) : 1->1/1/1->1 5-1
|   |
|
Root (Egr)
| slot(1)
|--(S) : s1
|   |
|   |--(Q) : 1->1/1/1->1
|   |
|
=====
*A:PE#

show qos scheduler-hierarchy customer 1 site "mss"
=====
Scheduler Hierarchy - Customer 1 MSS mss
=====
Root (Ing)
|
No Active Members Found on slot 3
Root (Egr)
| slot(3)
|--(Q) : 2->pw-2:100->8 (Port pxc-1.b)
|
|--(Q) : 2->pw-2:100->7 (Port pxc-1.b)
|
|--(Q) : 2->pw-2:100->6 (Port pxc-1.b)
```

```

--(Q) : 2->pw-2:100->5 (Port pxc-1.b)
--(Q) : 1->pw-1:100->8 (Port pxc-1.b)
--(Q) : 1->pw-1:100->7 (Port pxc-1.b)
--(Q) : 1->pw-1:100->6 (Port pxc-1.b)
--(Q) : 1->pw-1:100->5 (Port pxc-1.b)
    
```

Table 93: Show QoS Scheduler-Hierarchy Customer Output Fields

Label	Description
Legend	<p>Admin CIR/PIR: Specifies the configured value of CIR/PIR.</p> <p>Assigned CIR/PIR: Specifies the PIR/CIR rate given to a member by that parent level.</p> <p>Offered CIR/PIR: Specifies the offered load on that member.</p> <p>Consumed CIR/PIR: Specifies the amount of scheduler bandwidth used by this member.</p>
Lvl/Wt	<p>Specifies the priority level of the scheduler when compared to other child schedulers and queues vying for bandwidth on the parent schedulers during the above-CIR distribution phase of bandwidth allocation.</p> <p>Weight defines the relative weight of this scheduler in comparison to other child schedulers and queues at the same level.</p>
Cir Lvl/Wt	<p>Specifies the level of hierarchy when compared to other schedulers and queues when vying for bandwidth on the parent scheduler. Weight defines the relative weight of this queue as compared to other child schedulers and queues while vying for bandwidth on the parent scheduler.</p>
PIR	Specifies the PIR rate.
CIR	Specifies the CIR rate.
Parent	Specifies the parent scheduler that governs the available bandwidth given the queue aside from the queue's PIR setting.
Service-Id	The ID that uniquely identifies the policy.
Customer-Id	The ID that uniquely identifies the customer.
SAP	Specifies the Service Access Point (SAP) within the service where the policy is applied.
Multi Service Site	Specifies the multiservice site name.

Label	Description
Orphan Queues	Specifies the number of queues in an orphaned state.
Hierarchy	Displays the scheduler policy tree structure.
Tier0	Specifies the weight of the queue at its parent internal (Tier0) scheduler. This is a normalized value based on the port speed, or hash weight when used within a LAG.

## customer

### Syntax

**customer** *customer-id* **site** *customer-site-name* [**scheduler** *scheduler-name*] [{**ingress** | **egress**}]

### Context

[\[Tree\]](#) (show>qos>scheduler-stats customer)

### Full Context

show qos scheduler-stats customer

### Description

This command displays scheduler statistics customer information.

### Parameters

#### **customer-id**

Specifies the ID number associated with a particular customer.

**Values** 1 to 2147483647

#### **customer-site-name**

The unique customer site name.

#### **scheduler-name**

The unique scheduler name created in the context of the scheduler policy.

#### **ingress**

The keyword to display ingress SAP customer scheduler stats.

#### **egress**

The keyword to display egress SAP customer scheduler stats.

### Platforms

All

## Output

The following output is an example of SAP scheduler-stats customer information, and [Table 94: Show QoS Scheduler-Stats Customer Output Fields](#) describes the SAP scheduler-stats customer fields.

### Output Example

```
A:ALA-12# show qos scheduler-stats customer 274 site west scheduler NetworkControl
ingress
=====
Scheduler Stats
=====
Scheduler                Forwarded Packets      Forwarded Octets
-----
NetworkControl           0                      0
=====
A:ALA-12#
```

Table 94: Show QoS Scheduler-Stats Customer Output Fields

Label	Description
Scheduler	Displays the scheduler policy name.
Forwarded Packets	Displays the number of packets forwarded.
Forwarded Octets	Displays the number of octets forwarded.

## customer

### Syntax

**customer** *customer-id* **site** *customer-site-name* [**egress**] [**detail**]

### Context

[\[Tree\]](#) (show>qos>agg-rate customer)

### Full Context

show qos agg-rate customer

### Description

This command displays the H-QoS aggregate rate limit per customer multiservice site.

### Parameters

**customer** *customer-id*

Specifies the ID number associated with a particular customer.

**Values** 1 to 2147483647

**site** *customer-site-name*

Specifies the unique customer site name.



## egress

Displays egress SAP customer scheduler stats.

## detail

Displays detailed information.

## Platforms

All

## Output

The following output is an example of QoS customer aggregation rate output, and [Table 95: Show QoS Aggregation Rate Customer Output Fields](#) describes the QoS customer aggregation rate fields.

## Output Example

```
*A:PE1# show qos agg-rate customer 1 site "site1" egress
```

```
=====
Aggregate Rate Information - Customer 1 MSS site1
=====
```

```
Root (Egr)
| slot(1)
|   AdminRate           : 10000
|   OperRate            : 0
|   Limit Unused Bandwidth : disabled
|   OnTheWireRates      : false
|   LastMileOnTheWireRates : false
|
```

```
=====
*A:PE#
```

```
show qos agg-rate customer 1 site "mss"
```

```
=====
Aggregate Rate Information - Customer 1 MSS mss
=====
```

```
Root (Egr)
| slot(3)
|   AdminRate           : 50000
|   OperRate            : 50000
|   Limit Unused Bandwidth : disabled
|   OnTheWireRates      : false
|   LastMileOnTheWireRates : false
|
|--(Q) : 2->pw-2:100->8 (Port pxc-1.b)
|--(Q) : 2->pw-2:100->7 (Port pxc-1.b)
|--(Q) : 2->pw-2:100->6 (Port pxc-1.b)
|--(Q) : 2->pw-2:100->5 (Port pxc-1.b)
|--(Q) : 1->pw-1:100->8 (Port pxc-1.b)
|--(Q) : 1->pw-1:100->7 (Port pxc-1.b)
|--(Q) : 1->pw-1:100->6 (Port pxc-1.b)
|--(Q) : 1->pw-1:100->5 (Port pxc-1.b)
```

Table 95: Show QoS Aggregation Rate Customer Output Fields

Label	Description
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.
Limit Unused Bandwidth	Indicates whether the <b>limit-unused-bandwidth</b> command is enabled to protect against exceeding the aggregated bandwidth.
OnTheWireRates	Indicates whether the displayed rates are on-the-wire rates.
LastMileOnTheWireRates	Indicates whether the displayed rates are on-the-wire rates for the last mile only.

## customer

### Syntax

**customer** *customer-id* **site** *customer-site-name* [**arbiter** {**root** | *name*}] [**ingress** | **egress**] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>qos>arbiter-stats customer)

### Full Context

monitor qos arbiter-stats customer

### Description

This command monitors arbiter statistics for a customer site.

### Parameters

#### **customer-id**

Specifies the ID number to be associated with the customer, expressed as an integer.

**Values** 1 to 2147483647

#### **customer-site-name**

Specifies the customer site which is an anchor point for ingress and egress arbiter hierarchy.

#### **name**

Specifies the name of the policer control policy arbiter. This parameter is mandatory if the SAP resides on a LAG in adapt-qos link or port-fair mode.

**Values** An existing arbiter-name in the form of a string up to 32 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**root**

Specifies the root arbiter.

**ingress**

Displays arbiter-name statistics applied on the site ingress.

**egress**

Displays arbiter-name statistics applied on the site egress.

**seconds**

Configures the interval for each display in seconds.

**Values** 11 to 60

**Default** 11 seconds

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

**customer**

**Syntax**

**customer** *customer-id* **site** *customer-site-name* [**scheduler** *scheduler-name*] [**ingress** | **egress**] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**Context**

[\[Tree\]](#) (monitor>qos>scheduler-stats customer)

**Full Context**

monitor qos scheduler-stats customer

## Description

This command monitors scheduler statistics per customer multi-service-site. The first screen displays the current statistics related to the specified customer ID and customer site name. The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta. Monitor commands are similar to **show** commands but only statistical information displays. These commands display selected statistics per the configured number of times at the interval specified.

## Parameters

### *customer-id*

Specifies the ID number to be associated with the customer, expressed as an integer.

**Values** 1 to 2147483647

### *customer-site-name*

Specifies the customer site, which is an anchor point for ingress and egress virtual scheduler hierarchy.

### *scheduler-name*

Specifies an existing *scheduler-name*. Scheduler names are configured in the **config>qos>scheduler-policy>tier level** context. This parameter is mandatory if the customer resides on a LAG in adapt-qos link or port-fair mode.

**Values** An existing *scheduler-name* is in the form of a string, up to 32 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### **ingress**

Displays the customer's multi-service-site ingress scheduler policy.

### **egress**

Displays the customer's multi-service-site egress scheduler policy.

### *seconds*

Configures the interval for each display in seconds.

**Values** 11 to 60

**Default** 11 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

**customer**

**Syntax**

**customer** *customer-id* **site** *customer-site-name* [**arbiter** {*name* | *root*}] [**ingress** | **egress**]

**Context**

**[Tree]** (clear>qos>arbiter-stats customer)

**Full Context**

clear qos arbiter-stats customer

**Description**

This command clears the arbiter statistics per customer.

**Parameters**

***customer-id***

Specifies the ID number of the associated customer.

**Values** 1 to 2147483647

***customer-site-name***

Specifies the customer site name, up to 32 characters.

***name***

Specifies the arbiter name, up to 32 characters.

***root***

Specifies the arbiter root, up to 32 characters.

**ingress**

Clears the arbiter name statistics applied on the site ingress.

**egress**

Clears the arbiter name statistics applied on the site egress.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## customer

### Syntax

**customer** *customer-id* **site** *customer-site-name* [**scheduler** *scheduler-name*] [**ingress** | **egress**]

### Context

[\[Tree\]](#) (clear>qos>scheduler-stats customer)

### Full Context

clear qos scheduler-stats customer

### Description

This command clears the scheduler statistics per customer multi-service site.

### Parameters

#### **customer-id**

Specifies the ID number of the associated customer.

**Values** 1 to 2147483647

#### **customer-site-name**

Specifies the customer site name, up to 32 characters.

#### **scheduler-name**

Specifies the scheduler name, up to 32 characters.

#### **ingress**

Clears the customer's multi-service site ingress scheduler policy.

#### **egress**

Clears customer's multi-service site egress scheduler policy.

### Platforms

All

## customer

### Syntax

**customer** *customer-id* **site** *customer-site-name* [**arbiter** *name* | *roof*] [**ingress** | **egress**]

### Context

[\[Tree\]](#) (show>qos>arbiter-stats customer)

## Full Context

```
show qos arbiter-stats customer
```

## Description

This command displays the arbiter statistics per customer multi-service site.

## Parameters

### *customer-id*

Specifies the ID number associated with a particular customer.

**Values** 1 to 2147483647

### *customer-site-name*

Specifies the customer site name, up to 32 characters.

### *name*

Specifies the arbiter name, up to 32 characters.

### *root*

Specifies the arbiter root, up to 32 characters.

### *egress*

Displays egress queue group information.

### *ingress*

Displays ingress queue group information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## 7 d Commands

### 7.1 dampening

#### dampening

##### Syntax

dampening

##### Context

[\[Tree\]](#) (clear>port>eth dampening)

##### Full Context

clear port ethernet dampening

##### Description

This command clears Exponential Port Dampening (EPD) accumulated penalties on the port.

##### Platforms

All

### 7.2 damping

#### damping

##### Syntax

damping [*ip-prefix* [*ip-prefix-length*]] [ damp-type] [detail] [ ipv4]

damping [*ip-prefix* [*ip-prefix-length*]] [ damp-type] [detail] { ipv6 | label-ipv4 | label-ipv6 | mcast-ipv4 | mcast-ipv6 | mvpn-ipv4 | vpn-ipv4 | vpn-ipv6 }

##### Context

[\[Tree\]](#) (show>router>bgp damping)

##### Full Context

show router bgp damping



## Description

This command displays BGP routes with have been dampened due to route flapping. This command can be entered with or without a route parameter.

When the keyword **detail** is included, more detailed information displays.

When only the command is entered (without any parameters included except **detail**), then all dampened routes are listed.

When a parameter is specified, then the matching route or routes are listed.

When a **decayed**, **history**, or **suppressed** keyword is specified, only those types of dampened routes are listed.

## Parameters

### *ip-prefix[ip-prefix-length]*

Displays damping information for the specified IP prefix length.

**Values**    ipv4-prefix: a.b.c.d (host bits must be 0)  
              ipv4-prefix-le: 0 to 32  
              ipv6-prefix:  
              • x:x:x:x:x:x:x (eight 16-bit pieces)  
              • x:x:x:x:x:d.d.d.d  
              • x: [0 to FFFF] H  
              • d: [0 to 255] D  
              ipv6-prefix-le: 0 to 128

### **damp-type**

Displays damping type for the specified IP address.

### **decayed**

Displays damping entries that are decayed but are not suppressed.

### **history**

Displays damping entries that are withdrawn but have history.

### **suppressed**

Displays damping entries suppressed because of route damping.

### **detail**

Displays detailed information.

### **ipv4**

Displays damped routes for the IPv4 family.

### **ipv6**

Displays damped routes for the IPv6 family.

### **label-ipv4**

Displays damped routes for the label IPv4 family.

### **label-ipv6**

Displays damped routes for the label IPv6 family.

**mcast-ipv4**

Displays damped routes for the MCAST IPv4 family.

**mcast-ipv6**

Displays damped routes for the MCAST IPv6 family.

**mvpn-ipv4**

Displays damped routes for the MVPN IPv4 family.

**vpn-ipv4**

Displays damped routes for the VPN IPv4 family.

**vpn-ipv6**

Displays damped routes for the VPN IPv6 family.

**Platforms**

All

**Output**

The following output is an example of BGP damping information, and [Table 96: Show Damping Field Descriptions](#) describes the output fields.

**Output Example**

```
*A:ALA-12# show router 3 bgp damping
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes
=====
Flag Network          From           Reuse          AS-Path
-----
ud*i 10.149.7.0/24      10.0.28.1     00h00m00s     60203 65001 19855 3356
                               1239 22406
si   10.155.6.0/23      10.0.28.1     00h43m41s     60203 65001 19855 3356
                               2914 7459
si   10.155.8.0/22      10.0.28.1     00h38m31s     60203 65001 19855 3356
                               2914 7459
si   10.155.12.0/22     10.0.28.1     00h35m41s     60203 65001 19855 3356
                               2914 7459
si   10.155.22.0/23     10.0.28.1     00h35m41s     60203 65001 19855 3356
                               2914 7459
si   10.155.24.0/22     10.0.28.1     00h35m41s     60203 65001 19855 3356
                               2914 7459
si   10.155.28.0/22     10.0.28.1     00h34m31s     60203 65001 19855 3356
                               2914 7459
si   10.155.40.0/21     10.0.28.1     00h28m24s     60203 65001 19855 3356
                               7911 7459
si   10.155.48.0/20     10.0.28.1     00h28m24s     60203 65001 19855 3356
                               7911 7459
ud*i 10.8.140.0/24     10.0.28.1     00h00m00s     60203 65001 19855 3356
                               4637 17447
ud*i 10.8.141.0/24     10.0.28.1     00h00m00s     60203 65001 19855 3356
                               4637 17447
ud*i 10.9.0.0/18      10.0.28.1     00h00m00s     60203 65001 19855 3356
```

```

                                     3561 9658 6163
. . .
ud*i 10.213.184.0/23 10.0.28.1 00h00m00s 60203 65001 19855 3356
                                     6774 6774 9154
-----
*A:ALA-12#

*A:ALA-12# show router 3 bgp damping detail
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * -
valid
Origin codes : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes
=====
Network : 10.149.7.0/24
-----
Network      : 10.149.7.0/24      Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 10.32.27.203
Local Pref   : none
Age          : 00h22m09s         Last update  : 02d00h58m
FOM Present  : 738               FOM Last upd. : 2039
Number of Flaps : 2              Flags       : ud*i
Path         : 60203 65001 19855 3356 1239 22406
Applied Policy : default-damping-profile
-----
Network : 10.142.48.0/20
-----
Network      : 10.142.48.0/20    Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 10.32.27.203
Local Pref   : none
Age          : 00h00m38s         Last update  : 02d01h20m
FOM Present  : 2011             FOM Last upd. : 2023
Number of Flaps : 2              Flags       : ud*i
Path         : 60203 65001 19855 3356 3561 5551 1889
Applied Policy : default-damping-profile
-----
Network : 10.200.128.0/19
-----
Network      : 10.200.128.0/19   Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 10.32.27.203
Local Pref   : none
Age          : 00h00m38s         Last update  : 02d01h20m
FOM Present  : 2011             FOM Last upd. : 2023
Number of Flaps : 2              Flags       : ud*i
Path         : 60203 65001 19855 1299 702 1889
Applied Policy : default-damping-profile
-----
Network : 10.203.192.0/18
-----
Network      : 10.203.192.0/18   Peer      : 10.0.28.1
NextHop      : 10.0.28.1         Reuse time : 00h00m00s
Peer AS      : 60203             Peer Router-Id : 10.32.27.203
Local Pref   : none
Age          : 00h00m07s         Last update  : 02d01h20m
FOM Present  : 1018             FOM Last upd. : 1024
  
```

```

Number of Flaps : 1          Flags          : ud*i
Path            : 60203 65001 19855 1299 702 1889
Applied Policy  : default-damping-profile
-----
*A:ALA-12#

*A:ALA-12# show router 3 bgp damping 10.203.192.0/18 detail
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes 10.203.192.0/18
=====
Network : 10.203.192.0/18
-----
Network          : 10.203.192.0/18      Peer           : 10.0.28.1
NextHop          : 10.0.28.1           Reuse time     : 00h00m00s
Peer AS          : 60203               Peer Router-Id : 10.32.27.203
Local Pref       : none
Age              : 00h00m42s           Last update    : 02d01h20m
FOM Present      : 2003                FOM Last upd.  : 2025
Number of Flaps  : 2                   Flags          : ud*i
Path             : 60203 65001 19855 3356 702 1889
Applied Policy   : default-damping-profile
-----
Paths : 1
=====
*A:ALA-12#
*A:ALA-12# show router 3 bgp damping suppressed detail
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, - best
=====
BGP Damped Routes (Suppressed)
=====
Network : 10.142.48.0/20
-----
Network          : 10.142.48.0/20      Peer           : 10.0.28.1
NextHop          : 10.0.28.1           Reuse time     : 00h29m22s
Peer AS          : 60203               Peer Router-Id : 10.32.27.203
Local Pref       : none
Age              : 00h01m28s           Last update    : 02d01h20m
FOM Present      : 2936                FOM Last upd.  : 3001
Number of Flaps  : 3                   Flags          : si
Path             : 60203 65001 19855 3356 702 1889
Applied Policy   : default-damping-profile
-----
Network : 10.200.128.0/19
-----
Network          : 10.200.128.0/19     Peer           : 10.0.28.1
NextHop          : 10.0.28.1           Reuse time     : 00h29m22s
Peer AS          : 60203               Peer Router-Id : 10.32.27.203
Local Pref       : none
Age              : 00h01m28s           Last update    : 02d01h20m
FOM Present      : 2936                FOM Last upd.  : 3001
Number of Flaps  : 3                   Flags          : si
Path             : 60203 65001 19855 3356 702 1889
    
```

```

Applied Policy : default-damping-profile
-----
Network : 10.203.240.0/20
-----
Network      : 10.203.240.0/20      Peer      : 10.0.28.1
NextHop     : 10.0.28.1           Reuse time : 00h29m22s
Peer AS    : 60203                Peer Router-Id : 10.32.27.203
Local Pref  : none
Age        : 00h01m28s           Last update  : 02d01h20m
FOM Present : 2936                FOM Last upd. : 3001
Number of Flaps : 3                Flags       : si
Path       : 60203 65001 19855 3356 702 1889
Applied Policy : default-damping-profile
-----
Network : 10.206.0.0/17
-----
Network      : 10.206.0.0/17      Peer      : 10.0.28.1
NextHop     : 10.0.28.1           Reuse time : 00h29m22s
Peer AS    : 60203                Peer Router-Id : 10.32.27.203
Local Pref  : none
Age        : 00h01m28s           Last update  : 02d01h20m
FOM Present : 2936                FOM Last upd. : 3001
Number of Flaps : 3                Flags       : si
Path       : 60203 65001 19855 3356 702 1889
Applied Policy : default-damping-profile
-----
*A:ALA-12#
    
```

Table 96: Show Damping Field Descriptions

Label	Description
BGP Router ID	The local BGP router ID.
AS	The configured autonomous system number.
Local AS	The configured or inherited local AS for the specified peer group. If not configured, then it is the same value as the AS.
Network	Route IP prefix and mask length for the route.
Flag(s)	Legend: Status codes: u- used, s-suppressed, h-history, d-decayed, *-valid. If a * is not present, then the status is invalid. Origin codes: i-IGP, e-EGP, ?-incomplete, >-best
Network	The IP prefix and mask length for the route.
From	The originator ID path attribute value.
Reuse time	The time when a suppressed route can be used again.
AS Path	The BGP AS path for the route.
Peer	The router ID of the advertising router.

Label	Description
NextHop	BGP nexthop for the route.
Peer AS	The autonomous system number of the advertising router.
Peer Router-Id	The router ID of the advertising router.
Local Pref	BGP local preference path attribute for the route.
Age	The time elapsed since the service was enabled.
Last update	The time when BGP was updated last in second/minute/hour (SS:MM:HH) format.
FOM Present	The current Figure of Merit (FOM) value.
Number of Flaps	The number of flaps in the neighbor connection.
Reuse time	The time when the route can be reused.
Path	The BGP AS path for the route.
Applied Policy	The applied route policy name.

## damping

### Syntax

**damping** [{*ip-prefix/ip-prefix-length*] [**neighbor** *ip-address*]} | **group** *name*]

### Context

[\[Tree\]](#) (clear>router>bgp damping)

### Full Context

clear router bgp damping

### Description

This command clears or resets the route damping information for received routes.

### Parameters

#### *ip-prefix/ip-prefix-length*

Clears damping information for entries that match the IP prefix and prefix length.

- Values**
- ipv4-prefix:
    - a.b.c.d (host bits must be 0)
  - ipv4-prefix-length: [0 to 32]
  - ipv6-prefix:

- x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x: [0 to FFFF]H
  - d: [0 to 255]D
- ipv6-prefix-length: [0 to 128]

### **neighbor ip-address**

Clears damping information for entries received from the BGP neighbor.

- Values**
- ipv4-address:
- a.b.c.d
- ipv6-prefix:
- x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x: [0 to FFFF]H
  - d: [0 to 255]D
- interface: up to 32 characters, mandatory for link local addresses

### **group name**

Clears damping information for entries received from any BGP neighbors in the peer group.

- Values** up to 32 characters

### **Platforms**

All

## **7.3 data-trigger**

### **data-trigger**

#### **Syntax**

**data-trigger sap sap-id**

#### **Context**

**[Tree]** (clear>service>dynsvc data-trigger)

#### **Full Context**

clear service dynamic-services data-trigger

## Description

This command deletes all dynamic services associated with a dynamic services data trigger.



### Note:

This command is not available in the MD-CLI.

## Parameters

***sap-id***

Specifies the dynamic services data trigger SAP to delete.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 7.4 data-triggers

### data-triggers

## Syntax

**data-triggers** [**sap** *sap-id*] [**summary**]

## Context

[\[Tree\]](#) (show>service>dynsvc data-triggers)

## Full Context

show service dynamic-services data-triggers

## Description

This command displays the active dynamic services data trigger details.



### Note:

This command is not available in the MD-CLI.

## Parameters

***sap-id***

Specifies the dynamic services SAP for which the details are shown.

**summary**

Limits the output to one line per data trigger SAP.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## Output

The following output is an example of data trigger information.

### Output Example

```
# show service dynamic-services data-triggers
=====
Dynamic Services Data-triggers
=====
SAP                : 1/1/4:1214.101
-----
Acct session-ID    : 144DFF0000009156A24138
MAC                : 00:51:00:dd:01:01
IP                 :
State              : sapCreated
-----
No. of Data-triggers: 1
=====
```

[Table 97: Data Trigger Field Descriptions](#) describes data trigger fields.

*Table 97: Data Trigger Field Descriptions*

Output field	Description
Acct session-ID	The RADIUS accounting session ID for this dynamic services data trigger. This accounting session ID is used as an accounting multi-session ID in RADIUS accounting for the associated dynamic services. It can also be used as a key in CoA or Disconnect Messages to set up or terminate associated dynamic services.
MAC	The MAC address learned to set up this dynamic service data trigger. The MAC address is included in the Access-Request message for RADIUS authentication.
IP	The IPv4 or IPv6 address learned to set up this dynamic service data trigger. If the data trigger packet was not an IP packet, then this field is empty. When available, the IP address is included in the RADIUS authentication and accounting messages.
State	The current state of the dynamic service data trigger: Pending—(initial state) data trigger received and authentication started Accepted—(transient state) authentication succeeded; dynsvc script started but not yet completed sapCreated—(final state) corresponding dynamic services sap created

## 7.5 database

### database

#### Syntax

**database**

#### Context

[\[Tree\]](#) (show>service>id>spb database)

#### Full Context

show service id spb database

#### Description

This command displays SPB database information.

#### Platforms

All

#### Output

The following output is an example of service SPB database information.

#### Output Example

```
*A:Dut-A# show service id 100001 spb database
=====
ISIS Database
=====
LSP ID                               Sequence  Checksum Lifetime Attributes
-----
Displaying Level 1 database
-----
Dut-A.00-00                           0xc      0xbaba   1103     L1
Dut-B.00-00                           0x13     0xe780   1117     L1
Dut-C.00-00                           0x13     0x85a    1117     L1
Dut-D.00-00                           0xe      0x174a   1119     L1
Level (1) LSP Count : 4
=====
```

### database

#### Syntax

**database** [group *grp-ip-address*] [source *src-ip-address*] [family]

**database evpn-mpls** [group *grp-ip-address*] [ source *src-ip-address*] [family]

```
database sap sap-id [group grp-ip-address] [source src-ip-address] [family]  
database sdp sap-id:vc-id [group grp-ip-address] [source src-ip-address] [family]  
database vxlan vtep ip-address vni vni-id [group grp-ip-address] [source src-ip-address] [family]
```

## Context

[\[Tree\]](#) (clear>service>id>pim-snooping database)

## Full Context

clear service id pim-snooping database

## Description

This command clears PIM snooping source group database information.

## Parameters

### *sap-id*

Clears PIM snooping SAP information

### *sdp-id*

Clears PIM snooping entries associated with the specified SDP. For a spoke-SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

### *grp-ip-address*

Clears PIM snooping information matching the specified group address

### *src-ip-address*

Clears PIM snooping information matching one particular source within the multicast group

### *family*

Displays either IPv4 or IPv6 information

**Values** ipv4 or ipv6

### *evpn-mpls*

Clears PIM snooping statistics for EVPN-MPLS destinations

## Platforms

All

## database

## Syntax

```
database [ip-address [l mask] [longer]] [peer ip-address] [detail [qos]]
```

## Context

[\[Tree\]](#) (show>router>rip database)

## Full Context

show router rip database

## Description

Displays all routes in the RIP database.

## Parameters

### *ip-address /mask*

Specifies the IP address.

**Values** ip-address: a.b.c.d.  
 mask: 1 to 32

### *longer*

Specifies the longer prefix match entries should also be displayed.

### *peer ip-address*

Specifies the peer IP address.

**Values** a.b.c.d

### *detail*

Displays detailed information.

### *qos*

Specifies the QoS.

## Platforms

All

## Output

The following output is an example of RIP route database information, and [Table 98: Show RIP Database Field Descriptions](#) describes the output fields.

### Output Example

```
*A:ALA-1# show rip database
=====
RIP Route Database
=====
Destination      Peer           NextHop        Metric  Tag      TTL  Valid
-----
10.0.0.10/32     10.1.7.15     0.0.0.0        2       0x0000  163  No
10.0.0.10/32     10.1.8.14     0.0.0.0        2       0x0000  179  No
10.0.0.14/32     10.1.8.14     0.0.0.0        1       0x0000  179  Yes
10.0.6.0/24      10.1.7.15     0.0.0.0        11      0x2002  163  No
10.0.6.0/24      10.1.8.14     0.0.0.0        11      0x2002  179  No
10.0.7.0/24      10.1.7.15     0.0.0.0        11      0x2002  163  No
10.0.7.0/24      10.1.8.14     0.0.0.0        11      0x2002  179  No
10.1.5.0/24      10.1.7.15     0.0.0.0        2       0x0000  151  Yes
10.1.5.0/24      10.1.8.14     0.0.0.0        1       0x0000  167  No
10.100.17.16/31  10.1.7.15     0.0.0.0        2       0x0000  151  No
10.100.17.16/31  10.1.8.14     0.0.0.0        2       0x0000  167  No
-----
```

```
No. of Routes: 11
=====
*A:ALA-12#
```

Table 98: Show RIP Database Field Descriptions

Label	Description
Destination	The RIP destination for the route.
Peer	The router ID of the peer router.
NextHop	The IP address of the next hop.
Metric	The hop count to rate the value of different hops.
Tag	The value to distinguish between internal routes (learned by RIP) and external routes (learned from other protocols).
TTL	Displays the number of seconds the specific route will remain in the routing table. When an entry reaches 0, it is removed from the routing table.
Valid	No — The route is not valid. Yes — The route is valid.

## database

### Syntax

**database**

### Context

[\[Tree\]](#) (clear>router>rip database)

### Full Context

clear router rip database

### Description

This command flushes all routes in the RIP database.

### Platforms

All

## database

### Syntax

**database** [**sub-domain** *sub-domain*] [**template** *template-name*]

### Context

[\[Tree\]](#) (show>router>bier database)

### Full Context

show router bier database

### Description

This command shows the BIER database and assigned labels for <SD, BSL, SI>.

### Parameters

#### *sub-domain*

Displays detailed information about the sub-domain.

**Values** 0 to 255

#### *template-name*

Displays template name, up to 32 characters.

### Platforms

All

### Output

The following output is an example of a BIER database. [Table 99: Bier Database Fields](#) provides BIER database field descriptions.

### Output Example

```
*A:Dut-A# show router bier database
=====
BIER Database
=====
Template           MT           Sub-domain      BSL
BFR-ID            Start       End             Total
BFR-Prefix
-----
temp1              ipv4-unicast 0                256
1                 1048464     1048479         16
10.20.1.1
temp1              ipv4-unicast 1                256
255              1048447     1048462         16
10.20.1.1
temp1              ipv4-unicast 2                256
2966             1048430     1048445         16
```

```

10.20.1.1
temp1          ipv4-unicast  3          256
1             1048413      1048428    16
10.20.1.1

temp1          ipv4-unicast  4          256
255           1048396      1048411    16
10.20.1.1

=====
BIER Database entries : 5
=====
*A:Dut-A#
  
```

Table 99: Bier Database Fields

Label	Description
Template	The template name
MT	The IGP topology associated with the sub-domain
Sub-domain	The sub-domain ID
BSL	The BitStringLength used in the sub-domain
BFR-ID	The BFR ID which identifies the router in the BitString
Start	The start label allocated for this sub-domain
End	The end label allocated for this sub-domain
Total	The total number of labels allocated for this sub-domain
BFR-Prefix	The routable IP address of a BFR, used by BIER to identify a BFR

## database

### Syntax

**database** [group *grp-ip-address*] [source *src-ip-address*]

**database interface** {*ip-int-name* | *ip-address*} [group *grp-ip-address*] [source *src-ip-address*]

**database host** *ip-address* [group *grp-ip-address*] [source *src-ip-address*]

**database host all** [group *grp-ip-address*] [source *src-ip-address*]

**database group-interface** *interface-name* [fwd-service *service-id*] [group *grp-ip-address*] [source *src-ip-address*]

**database group-interface all**

## Context

[\[Tree\]](#) (clear>router>igmp database)

## Full Context

clear router igmp database

## Description

This command clears IGMP or PIM database statistics on a specified interface or IP address.

## Parameters

### **group** *grp-ip-address*

Clears the multicast group address (IPv4/IPv6) or zero in the specified address group.

### **source** *src-ip-address*

Clears the IGMP database from the specified source IP address.

### **interface** *ip-int-name*

Clears the IGMP database on the specified interface.

### **interface** *ip-address*

Clears the IGMP database on the specified IP address.

### **host** *ip-address*

Clears the IGMP database on the specified host.

### **host** all

Clears the IGMP database on all hosts.

### **group-interface** *interface-name*

Clears the IGMP database on the specified group interface.

### **group-interface** all

Clears the IGMP database on all group interfaces.

## Platforms

All

## database

## Syntax

**database** [group *ipv6-address* [source *ipv6-address*]]

**database interface** {*ip-int-name* | *ipv6-address*} [ **group** *ipv6-address* [source *ipv6-address*]]

**database ipsec-interface** *ip-int-name* [group *ipv6-address* [source *ipv6-address*]]

**database host** *ipv6-address* [group *ipv6-address* [ source *ipv6-address*]]

**database host all** [group *ipv6-address* [source *ipv6-address*]]

**database group-interface** *interface-name* [ **fwd-service** *service-id*] [group *grp-ipv6-address* [source *ipv6-address*]]



## database group-interface all

### Context

[\[Tree\]](#) (clear>router>mld database)

### Full Context

clear router mld database

### Description

This command clears MLD database parameters.

### Parameters

#### host *ipv6-address*

Clears the MLD database on the specified host.

#### host all

Clears the MLD database on all hosts.

#### interface *ip-int-name*

Clears database information for the specified MLD interface name.

#### interface *ipv6-address*

Clears database information for the specified MLD interface IPv6 address.

#### ipsec-interface *ip-int-name*

Clears database information for the specified dynamic name for the MLD-enabled child\_SA.

#### group *ipv6-address*

Clears database information for the specified MLD group IPv6 address.

#### source *ipv6-address*

Clears database information for the specified MLD source IPv6 address.

#### *service-id*

Clears database information for the specified service ID.

**Values** service-id: 1 to 2148278386  
svc-name: up to 64 characters.

### Platforms

All

## database

### Syntax

**database** [**interface** *ip-int-name* | *mt-int-name* | *int-ip-address*] [**group** *grp-ip-address* [**source** *ip-address*]]  
[*family*]

## Context

[\[Tree\]](#) (clear>router>pim database)

## Full Context

clear router pim database

## Description

This command clears IGMP or PIM database statistics on a specified interface or IP address.

## Parameters

### *ip-int-name*

Clears the IGMP or PIM database on the specified interface.

### *mt-int-name*

Clears the default core group address of the Multicast Distribution Tree (MDT) for the VPRN instance. The Multicast Tunnel (MT) interface for a VPRN is created when this object is set to a valid group address.

**Syntax:** *vprn-id-mt-grp-ip-address*

### *int-ip-address*

Clears the IGMP or PIM database on the specified IP address.

### *group-ip-address*

Clears the multicast group address (ipv4, ipv6) or zero in the specified address group.

### *ip-address*

Clears the IGMP or PIM database from the specified source IP address.

### *family*

Clears database family information.

**Values** ipv4, ipv6

### *mpls-if-name*

Clears the MPLS interface name.

**Syntax:** *mpls-if-index*

## Platforms

All

## database

## Syntax

**database**

## Context

[\[Tree\]](#) (show>router>p2mp-sr-tree database)

## Full Context

show router p2mp-sr-tree database

## Description

Commands in this context display P2MP SR tree database information.

## Platforms

All

## database

## Syntax

**database** [*family*] [*ip-prefix/ip-prefix-length*] [**up to** *prefix-length*] [**origin-as** *as-number*]

**database** [*family*] [*ip-prefix/ip-prefix-length*] {**longer**}

**database** {**summary**}

**database** [*family*] [{**static**}

## Context

[\[Tree\]](#) (show>router>origin-validation database)

## Full Context

show router origin-validation database

## Description

This command displays database information.

## Parameters

### *family*

Specifies the type of routing information to be displayed.

**Values** ipv4 — Displays IPv4 entries.

ipv6 — Displays IPv6 entries.

### *ip-prefix/ip-prefix-length*

Displays routes only matching the specified IP address and length, up to 64 characters.

### *prefix-length*

Displays routes matching up to the specified length.

**Values** 1 to 128

### *as-number*

Specifies the origin AS number.

**Values** 0 to 4294967295

**longer**

Displays routes matching the *ip-prefix-ip-prefix-length* and routes with longer masks.

**summary**

Displays database summary information.

**static**

Displays static routes.

**Platforms**

All

**Output**

The following output is an example of database information.

**Output Example**

```
A:Dut-C# show router origin-validation database
=====
Static and Dynamic VRP Database Entries
=====
Prefix Range [Flags]                               Origin AS
  Session IP [Flags]
-----
10.0.0.0/16-24 [Static-V]                           65001
-
10.16.0.0/12-12 [Dynamic]                           65002
  10.168.1.1 [B]
-----
No. of VRP Database Entries: 2
-----
Flags: B = Base instance session
      M = Management instance session
      Static-V = Static-Valid; Static-I = Static-Invalid
=====
```

```
A:Dut-C# show router origin-validation database summary
=====
Static and Dynamic VRP Database Summary
=====
Type                               IPv4 Entries   IPv6 Entries
-----
10.168.1.1 [B]                      1              0
RPKI Server #1
Static                                1              0
=====
```

**database**

**Syntax**

**database** [*system-id* | *lsp-id*] [**detail**] [ **level** *level*]

## Context

[\[Tree\]](#) (show>router>isis database)

## Full Context

show router isis database

## Description

This command displays the entries in the IS-IS link state database.

## Parameters

### *system-id*

Only the LSPs related to the specified *system-id* are listed. If no *system-id* or *lsp-id* are specified, all database entries are listed.

### *lsp-id*

Only the specified LSP (hostname) is listed. If no *system-id* or *lsp-id* are specified, all database entries are listed.

### *level*

Specifies the interface level (1, 2, or 1 and 2).

### *detail*

All output is displayed in the detailed format.

## Platforms

All

## Output

The following output is an example of the IS-IS link state database information, and [Table 100: IS-IS Link State Database Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-B# show router isis 0 database
=====
Rtr Base ISIS Instance 0 Database
=====
LSP ID                               Sequence  Checksum Lifetime Attributes
-----
Displaying Level 1 database
-----
Dut-B.00-00                          0x495    0x614e   711    L1L2
Dut-D.00-00                          0x13b    0x1917   831    L1
Level (1) LSP Count : 2
Displaying Level 2 database
-----
Dut-A.00-00                          0x4a6    0x214f   804    L1L2
Dut-B.00-00                          0x4b7    0xe654   898    L1L2
Dut-C.00-00                          0x4b2    0xa4f1  1166    L1L2
Level (2) LSP Count : 3
=====
*A:Dut-B#
*A:Dut-B#
*A:Dut-B# show router isis 0 database detail
```

```

=====
Rtr Base ISIS Instance 0 Database (detail)
=====
Displaying Level 1 database
-----
LSP ID      : Dut-B.00-00                      Level      : L1
Sequence    : 0x495                            Checksum   : 0x614e   Lifetime   : 706
Version     : 1                                Pkt Type  : 18       Pkt Ver    : 1
Attributes  : L1L2                            Max Area  : 3         Alloc Len  : 1492
SYS ID      : 4900.0000.0002                  SysID Len : 6         Used Len   : 179
TLVs       :
  Area Addresses:
    Area Address : (3) 49.0001
  Supp Protocols:
    Protocols    : IPv4
  IS-Hostname   : Dut-B
  Router ID     :
    Router ID    : 10.20.1.2
  Router Cap    : 10.20.1.2, D:0, S:0
  TE Node Cap   : B E M P
  SR Cap        : IPv4 MPLS-IPv6
                 SRGB Base:20000, Range:10001
  SR Alg        : metric based SPF, 128
  Node MSD Cap  : BMI : 12 ERLD : 15
  FAD Sub-Tlv  :
    Flex-Algorithm : 128
    Metric-Type    : delay
    Calculation-Type : 0
    Priority        : 100
    Flags: M
  I/F Addresses :
    I/F Address   : 10.20.1.2
    I/F Address   : 10.10.10.13
  TE IS Nbrs    :
    Nbr           : Dut-D.00
    Default Metric : 10
    Sub TLV Len   : 30
    IF Addr       : 10.10.10.13
    Nbr IP        : 10.10.10.14
    TE APP LINK ATTR :
      SABML-flag:Non-Legacy SABM-flags: X
      Delay       : 100
    Adj-SID: Flags:v4VL Weight:0 Label:524285
  TE IP Reach   :
    Default Metric : 0
    Control Info:  S, prefLen 32
    Prefix        : 10.20.1.2
    Sub TLV       :
      Prefix-SID Index:2, Algo:0, Flags:NnP
      Prefix-SID Index:12, Algo:128, Flags:NnP
    Default Metric : 10
    Control Info:   , prefLen 30
    Prefix        : 10.10.10.12
-----
LSP ID      : Dut-D.00-00                      Level      : L1
Sequence    : 0x13b                            Checksum   : 0x1917   Lifetime   : 827
Version     : 1                                Pkt Type  : 18       Pkt Ver    : 1
Attributes  : L1                               Max Area  : 3         Alloc Len  : 179
SYS ID      : 4900.0000.0004                  SysID Len : 6         Used Len   : 179
TLVs       :
  Area Addresses:
    Area Address : (3) 49.0001
  Supp Protocols:
    Protocols    : IPv4
    
```

```
IS-Hostname : Dut-D
Router ID :
  Router ID : 10.20.1.4
  Router Cap : 10.20.1.4, D:0, S:0
  TE Node Cap : B E M P
  SR Cap: IPv4 MPLS-IPv6
  SRGB Base:20000, Range:10001
SR Alg: metric based SPF, 128
  Node MSD Cap: BMI : 12 ERLD : 15
  FAD Sub-Tlv:
    Flex-Algorithm : 128
    Metric-Type : delay
    Calculation-Type : 0
    Priority : 50
    Flags: M
I/F Addresses :
  I/F Address : 10.20.1.4
  I/F Address : 10.10.10.14
TE IS Nbrs :
  Nbr : Dut-B.00
  Default Metric : 10
  Sub TLV Len : 30
  IF Addr : 10.10.10.14
  Nbr IP : 10.10.10.13
  TE APP LINK ATTR :
    SABML-flag:Non-Legacy SABM-flags: X
    Delay : 100
  Adj-SID: Flags:v4VL Weight:0 Label:524287
TE IP Reach :
  Default Metric : 0
  Control Info: S, prefLen 32
  Prefix : 10.20.1.4
  Sub TLV :
    Prefix-SID Index:4, Algo:0, Flags:NnP
    Prefix-SID Index:14, Algo:128, Flags:NnP
  Default Metric : 10
  Control Info: , prefLen 30
  Prefix : 10.10.10.12
Level (1) LSP Count : 2
Displaying Level 2 database
-----
LSP ID : Dut-A.00-00
Sequence : 0x4a6
Version : 1
Attributes: L1L2
SYS ID : 4900.0000.0001
TLVs :
  Area Addresses:
    Area Address : (3) 49.0001
  Supp Protocols:
    Protocols : IPv4
IS-Hostname : Dut-A
Router ID :
  Router ID : 10.20.1.1
  Router Cap : 10.20.1.1, D:0, S:0
  TE Node Cap : B E M P
  SR Cap: IPv4 MPLS-IPv6
  SRGB Base:20000, Range:10001
  SR Alg: metric based SPF, 128
  Node MSD Cap: BMI : 12 ERLD : 15
I/F Addresses :
  I/F Address : 10.20.1.1
  I/F Address : 10.10.10.1
  I/F Address : 10.10.10.5
Checksum : 0x214f
Pkt Type : 20
Max Area : 3
SysID Len : 6
Level : L2
Lifetime : 798
Pkt Ver : 1
Alloc Len : 220
Used Len : 220
```

```

TE IS Nbrs :
  Nbr : Dut-C.00
  Default Metric : 10
  Sub TLV Len : 30
  IF Addr : 10.10.10.5
  Nbr IP : 10.10.10.6
  TE APP LINK ATTR :
    SABML-flag:Non-Legacy SABM-flags: X
    Delay : 100
  Adj-SID: Flags:v4VL Weight:0 Label:524286
TE IS Nbrs :
  Nbr : Dut-B.00
  Default Metric : 10
  Sub TLV Len : 24
  IF Addr : 10.10.10.1
  Nbr IP : 10.10.10.2
  TE APP LINK ATTR :
    SABML-flag:Non-Legacy SABM-flags: X
  Adj-SID: Flags:v4VL Weight:0 Label:524285
TE IP Reach :
  Default Metric : 10
  Control Info: , prefLen 30
  Prefix : 10.10.10.0
  Default Metric : 0
  Control Info: S, prefLen 32
  Prefix : 10.20.1.1
  Sub TLV :
    Prefix-SID Index:1, Algo:0, Flags:NnP
    Prefix-SID Index:11, Algo:128, Flags:NnP
  Default Metric : 10
  Control Info: , prefLen 30
  Prefix : 10.10.10.4
-----
LSP ID : Dut-B.00-00
Sequence : 0x4b7
Version : 1
Attributes: L1L2
SYS ID : 4900.0000.0002
TLVs :
  Area Addresses:
    Area Address : (3) 49.0001
  Supp Protocols:
    Protocols : IPv4
  IS-Hostname : Dut-B
  Router ID :
    Router ID : 10.20.1.2
  Router Cap : 10.20.1.2, D:0, S:0
  TE Node Cap : B E M P
  SR Cap: IPv4 MPLS-IPv6
    SRGB Base:20000, Range:10001
  SR Alg: metric based SPF, 128
  Node MSD Cap: BMI : 12 ERLD : 15
  FAD Sub-Tlv:
    Flex-Algorithm : 128
    Metric-Type : delay
    Calculation-Type : 0
    Priority : 100
    Flags: M
  I/F Addresses :
    I/F Address : 10.20.1.2
    I/F Address : 10.10.10.2
    I/F Address : 10.10.10.9
  TE IS Nbrs :
    Nbr : Dut-C.00
    
```



```

Default Metric : 10
Sub TLV Len   : 30
IF Addr      : 10.10.10.9
Nbr IP       : 10.10.10.10
TE APP LINK ATTR :
  SABML-flag:Non-Legacy SABM-flags: X
  Delay      : 100
Adj-SID: Flags:v4VL Weight:0 Label:524286
TE IS Nbrs   :
  Nbr        : Dut-A.00
  Default Metric : 10
  Sub TLV Len   : 24
  IF Addr      : 10.10.10.2
  Nbr IP       : 10.10.10.1
  TE APP LINK ATTR :
    SABML-flag:Non-Legacy SABM-flags: X
    Adj-SID: Flags:v4VL Weight:0 Label:524284
TE IP Reach  :
  Default Metric : 10
  Control Info:   , prefLen 30
  Prefix        : 10.10.10.0
  Default Metric : 0
  Control Info:  S, prefLen 32
  Prefix        : 10.20.1.2
  Sub TLV      :
    Prefix-SID Index:2, Algo:0, Flags:NnP
    Prefix-SID Index:12, Algo:128, Flags:NnP
  Default Metric : 10
  Control Info:   , prefLen 30
  Prefix        : 10.10.10.8
  Default Metric : 10
  Control Info:   , prefLen 30
  Prefix        : 10.10.10.12
  Default Metric : 10
  Control Info:  S, prefLen 32
  Prefix        : 10.20.1.4
  Sub TLV      :
    Prefix-SID Index:4, Algo:0, Flags:RNnP
    Prefix-SID Index:14, Algo:128, Flags:RNnP
    Prefix-Metric-FlexAlgo Algo:128, Metric:100
-----
LSP ID   : Dut-C.00-00
Sequence : 0x4b2
Version  : 1
Attributes: L1L2
SYS ID   : 4900.0000.0003
TLVs    :
  Area Addresses:
    Area Address : (3) 49.0001
  Supp Protocols:
    Protocols    : IPv4
  IS-Hostname   : Dut-C
  Router ID     :
    Router ID    : 10.20.1.3
  Router Cap    : 10.20.1.3, D:0, S:0
  TE Node Cap   : B E M P
  SR Cap        : IPv4 MPLS-IPv6
    SRGB Base:20000, Range:10001
  SR Alg        : metric based SPF, 128
  Node MSD Cap  : BMI : 12 ERLD : 15
  I/F Addresses :
    I/F Address  : 10.20.1.3
    I/F Address  : 10.10.10.6
    I/F Address  : 10.10.10.10
Checksum  : 0xa4f1
Level    : L2
Lifetime  : 1158
Pkt Type  : 20
Pkt Ver   : 1
Max Area  : 3
Alloc Len : 226
SysID Len : 6
Used Len  : 226
    
```

```

TE IS Nbrs :
  Nbr : Dut-A.00
Default Metric : 10
  Sub TLV Len : 30
  IF Addr : 10.10.10.6
  Nbr IP : 10.10.10.5
  TE APP LINK ATTR :
    SABML-flag:Non-Legacy SABM-flags: X
    Delay : 100
  Adj-SID: Flags:v4VL Weight:0 Label:524287
TE IS Nbrs :
  Nbr : Dut-B.00
Default Metric : 10
  Sub TLV Len : 30
  IF Addr : 10.10.10.10
  Nbr IP : 10.10.10.9
  TE APP LINK ATTR :
    SABML-flag:Non-Legacy SABM-flags: X
    Delay : 100
  Adj-SID: Flags:v4VL Weight:0 Label:524286
TE IP Reach :
  Default Metric : 0
  Control Info: S, prefLen 32
  Prefix : 10.20.1.3
  Sub TLV :
    Prefix-SID Index:3, Algo:0, Flags:NnP
    Prefix-SID Index:13, Algo:128, Flags:NnP
  Default Metric : 10
  Control Info: , prefLen 30
  Prefix : 10.10.10.4
  Default Metric : 10
  Control Info: , prefLen 30
  Prefix : 10.10.10.8
Level (2) LSP Count : 3
-----
Control Info : D = Prefix Leaked Down
              S = Sub-TLVs Present
Attribute Flags : N = Node Flag
                 R = Re-advertisement Flag
                 X = External Prefix Flag
                 E = Entropy Label Capability (ELC) Flag
Adj-SID Flags : v4/v6 = IPv4 or IPv6 Address-Family
                B = Backup Flag
                V = Adj-SID carries a value
                L = value/index has local significance
                S = Set of Adjacencies
                P = Persistently allocated
Prefix-SID Flags : R = Re-advertisement Flag
                  N = Node-SID Flag
                  nP = no penultimate hop POP
                  E = Explicit-Null Flag
                  V = Prefix-SID carries a value
                  L = value/index has local significance
Lbl-Binding Flags: v4/v6 = IPv4 or IPv6 Address-Family
                  M = Mirror Context Flag
                  S = SID/Label Binding flooding
                  D = Prefix Leaked Down
                  A = Attached Flag
SABM-flags Flags: R = RSVP-TE
                  S = SR-TE
                  F = LFA
                  X = FLEX-ALGO
FAD-flags Flags: M = Prefix Metric
=====
    
```

\*A: Dut - B#

Table 100: IS-IS Link State Database Output Fields

Label	Description
Flex-Algorithm	The flexible algorithm number
Priority	Displays the FAD priority; It is the tiebreaker when multiple FADs are received
Metric Type	The metric used by the winning FAD igp — the IGP metric is used te-metric — the TE metric is used delay — the delay metric is used
Calculation Type	Displays the calculation type; for SPF a zero value is only defined
Prefix SID Flags	Displays the prefix SID flags
Fad Flags	Displays the FAD Flags; the M-flag is used for inter-area; when set, the metric must be used for inter-area traffic to avoid loops and blackhole traffic on ABR/ASBR

## database

### Syntax

**database** [*system-id*]

### Context

[\[Tree\]](#) (clear>router>isis database)

### Full Context

clear router isis database

### Description

This command removes the entries from the IS-IS link-state database which contains information about PDUs.

### Parameters

***system-id***

When the system ID is entered, only the specified entries are removed from the IS-IS link-state database.

## Platforms

All

## database

### Syntax

```
database [type {router | network | summary | asbr-summary | external | nssa | all}] [area area-id] [adv-router router-id] [link-state-id] [detail] [filtered]
```

```
database [type {router | network | inter-area-pfx | inter-area-rtr | external | nssa | intra-area-pfx | rtr-info | all}] [area area-id] [adv-router router-id] [link-state-id] [detail] [filtered]
```

### Context

[\[Tree\]](#) (show>router>ospf3 database)

[\[Tree\]](#) (show>router>ospf database)

### Full Context

```
show router ospf3 database
```

```
show router ospf database
```

### Description

This command displays information about the OSPF link state database (LSDB).

When no command line options are specified, the command displays brief output for all database entries.

### Parameters

#### **type keyword**

Specifies to filter the OSPF LSDB information based on the type specified by *keyword*.

#### **router**

Displays only router (Type 1) LSAs in the LSDB.

#### **network**

Displays only network (Type 2) LSAs in the LSDB.

#### **summary**

Displays only summary (Type 3) LSAs in the LSDB.

#### **asbr-summary**

Displays only ASBR summary (Type 4) LSAs in the LSDB.

#### **external**

Displays only AS external (Type 5) LSAs in the LSDB. External LSAs are maintained globally and not per area. If the display of external links is requested, the area parameter, if present, is ignored.

#### **nssa**

Displays only NSSA area-specific AS external (Type 7) LSAs in the LSDB.

**inter-area-pfx**

Displays inter-area prefix LSAs.

**inter-area-rtr**

Displays inter-area router LSAs.

**intra-area-pfx**

Displays intra-area prefix LSAs.

**rtr-info**

Displays router info LSAs.

**all**

Displays all LSAs in the LSDB. The all keyword is intended to be used with either the **area area-id** or the **adv-router router-id [link-state-id]** parameters.

**area area-id**

Displays LSDB information associated with the specified OSPF *area-id*.

**Values** ip-address — a.b.c.d  
 area — 0 to 4294967295

**adv-router router-id [link-state-id]**

Displays LSDB information associated with the specified advertising router. To further narrow the number of items displayed, the *link-state-id* can optionally be specified.

**detail**

Displays detailed information on the LSDB entries.

**filtered**

Displays LSDB entries that were filtered by an area import or export policy.

**Platforms**

All

**Output**

OSPF Database Output

[Table 101: OSPF Database Output Fields](#) describes the standard and detailed command output fields for an OSPF database.

*Table 101: OSPF Database Output Fields*

Label	Description
Area Id	The OSPF area identifier.
Type LSA Type	Router — LSA type of router (OSPF) Network — LSA type of network (OSPF) Summary — LSA type of summary (OSPF) ASBR Summary — LSA type of ASBR summary (OSPF) Nssa-ext — LSA area-specific, NSSA external (OSPF)

Label	Description
	Area opaque — LSA type of area opaque (OSPF) router — LSA type of router (OSPF3) Network — LSA type of network (OSPF3) IE Pfx — LSA type of inter-area prefix (OSPF3) Newline IE Rtr LSA type of inter-area router (OSPF3) IA Pfx — LSA type of intra-area prefix (OSPF3)
Link State Id	The link state Id is an LSA type specific field containing either a number to distinguish several LSAs from the same router, an interface ID, or a router-id; it identifies the piece of the routing domain being described by the advertisement.
Adv Rtr Id Adv Router Id	The router identifier of the router advertising the LSA.
Age	The age of the link state advertisement in seconds.
Sequence Sequence No	The signed 32-bit integer sequence number.
Cksum Checksum	The 32-bit unsigned sum of the link-state advertisements' LS checksums.
No. of LSAs	The number of LSAs displayed.
Options	EA — External Attribute LSA Support DC — Demand Circuit Support R — If clear, a node can participate in OSPF topology distribution without being used to forward transit traffic. N — Type 7 LSA Support MC — Multicast Support E — External Routes Support V6 — V6 works in conjunction with R. If V6 is clear, a node can participate in OSPF topology distribution without being used to forward IPv6 datagrams. If R is set and V6 is clear, IPv6 datagrams are not forwarded but diagrams belonging to another protocol family may be forwarded.
Prefix Options	P — Propagate NSSA LSA. MC — Multicast support. LA — Local address capability. If set, the prefix is an IPv6 interface address of the advertising router. NU — No unicast capability. If set, the prefix is excluded from IPv6 unicast calculations.

Label	Description
Flags	None — No flags set V — The router is an endpoint for one or more fully adjacent Virtual Links having the described area as the transit area E — The router is an AS Boundary Router B — The router is an Area Border Router
Link Count	The number of links advertised in the LSA.
Link Type ( <i>n</i> )	The link type of the <i>n</i> th link in the LSA.
Network ( <i>n</i> )	The network address of the <i>n</i> th link in the LSA.
Mask ( <i>n</i> )	The mask of the <i>n</i> th link in the LSA.
No of TOS ( <i>n</i> )	The ToS of the <i>n</i> th link in the LSA.
Metric-0 ( <i>n</i> )	The cost metric of the <i>n</i> th link in the LSA.
Not Flooded ( <i>n</i> )	Filtered on Import The <i>n</i> th LSA was filtered by an area import policy. Filtered on Export The <i>n</i> th LSA was filtered by an area export policy. <b>Note:</b> this line does not appear if there is no filtering and the LSA was flooded.

### Output Example

```
A:ALA-A# show router ospf 1 database
=====
Rtr Base OSPFv2 Instance 1 Link State Database (type : All)
=====
Area Id      Type      Link State Id  Adv Rtr Id    Age  Sequence      Cksum
-----
0.0.0.0      Router    180.0.0.2      180.0.0.2     1800 0x800000b6    0xf54
0.0.0.0      Router    180.0.0.5      180.0.0.5     1902 0x8000009d    0xcb7c
0.0.0.0      Router    180.0.0.8      180.0.0.8     1815 0x8000009a    0x529b
0.0.0.0      Router    180.0.0.9      180.0.0.9     1156 0x80000085    0xd00f
0.0.0.0      Router    180.0.0.10     180.0.0.10    533  0x8000009d    0x3f1f
0.0.0.0      Router    180.0.0.11     180.0.0.11    137  0x80000086    0xc58f
0.0.0.0      Router    180.0.0.12     180.0.0.12    918  0x8000009d    0x4cf3
0.0.0.0      Router    180.0.0.13     180.0.0.13    1401 0x800000a2    0x879c
0.0.0.0      Network   180.0.53.28    180.0.0.28    149  0x80000083    0xe5cd
0.0.0.0      Network   180.0.54.28    180.0.0.28    1259 0x80000083    0xdad7
0.0.0.0      Summary   180.0.0.15     180.0.0.10    378  0x80000084    0xeba1
0.0.0.0      Summary   180.0.0.15     180.0.0.12    73   0x80000084    0xdfab
0.0.0.0      Summary   180.0.0.18     180.0.0.10    1177 0x80000083    0xcfbf
0.0.0.1      Summary   180.100.25.4   180.0.0.12    208  0x80000091    0x3049
0.0.0.1      AS Summ   180.0.0.8      180.0.0.10    824  0x80000084    0x3d07
0.0.0.1      AS Summ   180.0.0.8      180.0.0.12    1183 0x80000095    0x4bdf
0.0.0.1      AS Summ   180.0.0.9      180.0.0.10    244  0x80000082    0x73cb
n/a         AS Ext    7.1.0.0        180.0.0.23    1312 0x80000083    0x45e7
n/a         AS Ext    7.2.0.0        180.0.0.23    997  0x80000082    0x45e6
n/a         AS Ext    10.20.0.0     180.0.0.23    238  0x80000081    0x2d81
```

```

...
-----
No. of LSAs: 339
=====

A:ALA-A# show router ospf 1 database detail
=====
Rtr Base OSPFv2 Instance 1 Link State Database (type : All) (detail)
-----
Router LSA for Area 0.0.0.0
-----
Area Id          : 0.0.0.0          Adv Router Id    : 10.10.10.10
Link State Id    : 10.10.10.10 (168430090)
LSA Type         : Router
Sequence No     : 0x80000002       Checksum         : 0xd81
Age              : 594             Length          : 36
Options         : E
Flags           : None             Link Count      : 1
Link Type (1)   : Stub Network
Network (1)     : 192.168.0.0      Mask (1)        : 255.255.255.0
No of TOS (1)  : 0                Metric-0 (1)   : 10
-----
AS Ext LSA for Network 180.0.0.14
-----
Area Id          : N/A             Adv Router Id    : 180.0.0.10
Link State Id    : 180.0.0.14     LSA Type        : AS Ext
Sequence No     : 0x80000083       Checksum         : 0xa659
Age              : 2033            Length          : 36
Options         : E
Network Mask    : 255.255.255.255  Fwding Address  : 180.1.6.15
Metric Type     : Type 2           Metric-0        : 4
Ext Route Tag   : 0
-----

A:ALA-A# show router ospf database filtered
=====
Rtr Base OSPFv2 Instance 0 Link State Database (filtered)
=====
Type  Area Id      Link State Id  Adv Rtr Id  Filter
Router 0.0.0.0     10.0.0.2      10.0.0.2
-----
Router 0.0.0.0     10.0.0.2      10.0.0.2
Summary 0.0.0.0    1.2.3.0       10.0.0.2
Summary 0.0.0.0    10.0.0.1      10.0.0.2      Export 0.0.0.1
AS Summ 0.0.0.0    10.0.0.1      10.0.0.2
Router 0.0.0.1     10.0.0.1      10.0.0.1
Router 0.0.0.1     10.0.0.2      10.0.0.2
Network 0.0.0.1    1.1.2.2       10.0.0.2
Summary 0.0.0.1    1.2.3.0       10.0.0.2      Import 0.0.0.1
Summary 0.0.0.1    1.2.4.0       10.0.0.2      Import 0.0.0.1
Summary 0.0.0.1    1.4.6.0       10.0.0.2      Import 0.0.0.1
Summary 0.0.0.1    1.5.6.0       10.0.0.2      Import 0.0.0.1
Summary 0.0.0.2    1.5.6.0       10.0.0.2
Summary 0.0.0.2    10.0.0.1      10.0.0.2      Export 0.0.0.1
Summary 0.0.0.2    10.0.6.0      10.0.0.2
-----
No. of LSAs: 14
No. of Export Filtered LSAs: 2
No. of Import Filtered LSAs: 4
=====
A:ALA-A#
    
```

```
*A:Dut-C>config>router>ospf3# show router ospf3 0 database detail adv-router 10.20.1.3
```



```

=====
Rtr Base OSPFv3 Instance 0 Link State Database (type: All) (detail)
=====
-----
Router LSA for Area 0.0.0.1
-----
Area Id          : 0.0.0.1          Adv Router Id   : 10.20.1.3
Link State Id    : 0.0.0.0 (0)
LSA Type         : Router
Sequence No      : 0x80000002       Checksum        : 0x8749
Age              : 343              Length          : 56
Options          : ----R--EV6
Flags            : ASBR
Link Type (1)    : P2P Link         Link Count      : 2
I/F Index (1)    : 2                Nbr Rtr ID (1) : 10.20.1.1
Metric (1)       : 100              Nbr I/F Index (1): 3
Link Type (2)    : P2P Link         Nbr Rtr ID (2) : 10.20.1.6
I/F Index (2)    : 3                Nbr I/F Index (2): 4
Metric (2)       : 100
-----
IA Pfx LSA for Area 0.0.0.1
-----
Area Id          : 0.0.0.1          Adv Router Id   : 10.20.1.3
Link State Id    : 0.0.0.0 (0)
LSA Type         : IA Pfx
Sequence No      : 0x80000004       Checksum        : 0x285a
Age              : 303              Length          : 192
Ref Ls Type      : 2001             Ref Ls Id       : 0
Ref Adv Rtr      : 10.20.1.3       No of Pfxs      : 8
Prefix (1)       : 3ffe::a14:103/128
Pfx Options (1)  : LA               Metric (1)      : 0
Prefix (2)       : 3ffe::3300:d00/120
Pfx Options (2)  :                  Metric (2)      : 100
Prefix (3)       : 3ffe::100:d00/120
Pfx Options (3)  :                  Metric (3)      : 100
Prefix (4)       : 3ffe::3300:2400/120
Pfx Options (4)  :                  Metric (4)      : 100
Prefix (5)       : 3ffe::100:2400/120
Pfx Options (5)  :                  Metric (5)      : 100
Prefix (6)       : 3ffe::100:900/120
Pfx Options (6)  :                  Metric (6)      : 200
Prefix (7)       : 3ffe::3300:2103/128
Pfx Options (7)  : LA               Metric (7)      : 0
Prefix (8)       : 3ffe::100:2103/128
Pfx Options (8)  : LA               Metric (8)      : 0
-----
Rtr Inf LSA for Area 0.0.0.1
-----
Area Id          : 0.0.0.1          Adv Router Id   : 10.20.1.3
Link State Id    : 0.0.0.0 (0)
LSA Type         : Rtr Inf
Sequence No      : 0x80000002       Checksum        : 0x783a
Age              : 343              Length          : 68
TLV dump:
  Capabilities (1) Len 4 :
    0x28000000
  SR algorithm (8) Len 2 :
    0x2      0x0
  SR label range (9) Len 12 :
    Range-size=1000
    Sub-TLV SID/label(7) len 3 :
      label=40000
  SR Readable label depth capability: 15
  non-OSPF Func Capabilities (32768) Len 4 :
    
```

```

0x80000000
-----
E-Router LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.3
Link State Id : 0.0.0.0 (0)
LSA Type      : E-Router
Sequence No   : 0x80000004       Checksum       : 0x44a8
Age           : 303              Length        : 88
Options       : ----R--EV6
Flags         : ASBR             Link Count     : 2
Link Type (1) : P2P Link         Nbr Rtr ID (1) : 10.20.1.1
I/F Index (1) : 2                Nbr I/F Index (1) : 3
Metric (1)    : 100
Adj SID (1)   : 524287          Flags (1)      : BVL--
                                           Weight (1)     : 0
Link Type (2) : P2P Link         Nbr Rtr ID (2) : 10.20.1.6
I/F Index (2) : 3                Nbr I/F Index (2) : 4
Metric (2)    : 100
Adj SID (2)   : 524286          Flags (2)      : BVL--
                                           Weight (2)     : 0
-----
E-IA Pfx LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.3
Link State Id : 0.0.0.0 (0)
LSA Type      : E-IA Pfx
Sequence No   : 0x80000004       Checksum       : 0xb319
Age           : 304              Length        : 140
Ref Ls Type   : a021             Ref Ls Id     : 0
Ref Adv Rtr   : 10.20.1.3       No of Pfxs    : 3
Prefix (1)    : 3ffe::a14:103/128
Pfx Options (1) : N LA           Metric (1)    : 0
Prefix SID (1) : 6               Flags (1)     : NP-----
                                           Algorithm (1) : 0
Prefix (2)    : 3ffe::3300:2103/128
Pfx Options (2) : N LA           Metric (2)    : 0
Prefix (3)    : 3ffe::100:2103/128
Pfx Options (3) : N LA           Metric (3)    : 0
Prefix SID (3) : 0               Flags (3)     : NP-----
                                           Algorithm (3) : 0
-----
AS Ext LSA (0.0.0.2 (2))
-----
Area Id       : N/A              Adv Router Id  : 10.20.1.3
Link State Id : 0.0.0.2 (2)
LSA Type      : AS Ext
Sequence No   : 0x80000001       Checksum       : 0x4775
Age           : 348              Length        : 44
Options       : E
Pfx Options   :                  E2-Metric     : 1
Dest Prefix   : 3ffe::6700:1/128
=====
*A:Dut-C>config>router>ospf3# show router ospf3 0 database detail adv-router 10.20.1.6
=====
Rtr Base OSPFv3 Instance 0 Link State Database (type: All) (detail)
=====
-----
Router LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.0 (0)

```

```

LSA Type      : Router
Sequence No   : 0x80000002      Checksum      : 0x2aa3
Age           : 328             Length        : 56
Options       : ----R--EV6
Flags         : ABR ASBR       Link Count    : 2
Link Type (1) : P2P Link       Nbr Rtr ID (1) : 10.20.1.2
I/F Index (1) : 2              Nbr I/F Index (1) : 4
Metric (1)    : 100
Link Type (2) : P2P Link       Nbr Rtr ID (2) : 10.20.1.3
I/F Index (2) : 4              Nbr I/F Index (2) : 3
Metric (2)    : 100
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1      Adv Router Id : 10.20.1.6
Link State Id : 0.0.0.1 (1)
LSA Type      : IE Pfx
Sequence No   : 0x80000001      Checksum      : 0x45df
Age           : 335             Length        : 44
Pfx Options   :
Dest Prefix   : 3ffe::a14:106/128
Metric        : 0
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1      Adv Router Id : 10.20.1.6
Link State Id : 0.0.0.3 (3)
LSA Type      : IE Pfx
Sequence No   : 0x80000001      Checksum      : 0xb9b
Age           : 328             Length        : 44
Pfx Options   :
Dest Prefix   : 3ffe::100:3705/128
Metric        : 100
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1      Adv Router Id : 10.20.1.6
Link State Id : 0.0.0.4 (4)
LSA Type      : IE Pfx
Sequence No   : 0x80000001      Checksum      : 0x83ef
Age           : 328             Length        : 44
Pfx Options   :
Dest Prefix   : 3ffe::3300:3705/128
Metric        : 100
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1      Adv Router Id : 10.20.1.6
Link State Id : 0.0.0.5 (5)
LSA Type      : IE Pfx
Sequence No   : 0x80000001      Checksum      : 0x5d60
Age           : 328             Length        : 44
Pfx Options   :
Dest Prefix   : 3ffe::a14:105/128
Metric        : 100
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1      Adv Router Id : 10.20.1.6
Link State Id : 0.0.0.6 (6)
LSA Type      : IE Pfx
Sequence No   : 0x80000001      Checksum      : 0x1932
Age           : 328             Length        : 44
Pfx Options   :
Dest Prefix   : 3ffe::100:2c04/128
Metric        : 200
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.8 (8)
LSA Type      : IE Pfx
Sequence No   : 0x80000001       Checksum       : 0x878f
Age           : 328              Length         : 44
Pfx Options   :                  Metric          : 200
Dest Prefix   : 3ffe::3300:2c04/128
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.9 (9)
LSA Type      : IE Pfx
Sequence No   : 0x80000001       Checksum       : 0x75e0
Age           : 328              Length         : 44
Pfx Options   :                  Metric          : 200
Dest Prefix   : 3ffe::a14:104/128
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.10 (10)
LSA Type      : IE Pfx
Sequence No   : 0x80000001       Checksum       : 0xdcde
Age           : 328              Length         : 44
Pfx Options   :                  Metric          : 100
Dest Prefix   : 3ffe::a14:102/128
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.12 (12)
LSA Type      : IE Pfx
Sequence No   : 0x80000001       Checksum       : 0xc86a
Age           : 328              Length         : 44
Pfx Options   :                  Metric          : 200
Dest Prefix   : 3ffe::3300:1800/120
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.13 (13)
LSA Type      : IE Pfx
Sequence No   : 0x80000001       Checksum       : 0x3c28
Age           : 328              Length         : 44
Pfx Options   :                  Metric          : 200
Dest Prefix   : 3ffe::100:1800/120
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.14 (14)
LSA Type      : IE Pfx
Sequence No   : 0x80000001       Checksum       : 0x8c07
Age           : 328              Length         : 44
Pfx Options   :                  Metric          : 100
Dest Prefix   : 3ffe::3300:1a00/120
    
```

-----  
 IE Pfx LSA for Area 0.0.0.1  
 -----

```

Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 0.0.0.15 (15)
LSA Type      : IE Pfx
Sequence No   : 0x80000001       Checksum       : 0xffc4
    
```

```

Age           : 328                Length           : 44
Pfx Options   :                   Metric             : 100
Dest Prefix   : 3ffe::100:1a00/120
-----
IE Pfx LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1            Adv Router Id    : 10.20.1.6
Link State Id : 0.0.0.16 (16)
LSA Type      : IE Pfx
Sequence No   : 0x80000001         Checksum         : 0xaf6a
Age           : 328                Length           : 44
Pfx Options   :                   Metric             : 200
Dest Prefix   : 3ffe::3300:2d00/120
-----
IE Pfx LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1            Adv Router Id    : 10.20.1.6
Link State Id : 0.0.0.17 (17)
LSA Type      : IE Pfx
Sequence No   : 0x80000001         Checksum         : 0x2328
Age           : 328                Length           : 44
Pfx Options   :                   Metric             : 200
Dest Prefix   : 3ffe::100:2d00/120
-----
IE Pfx LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1            Adv Router Id    : 10.20.1.6
Link State Id : 0.0.0.18 (18)
LSA Type      : IE Pfx
Sequence No   : 0x80000001         Checksum         : 0x551c
Age           : 328                Length           : 44
Pfx Options   :                   Metric             : 100
Dest Prefix   : 3ffe::3300:3800/120
-----
IE Pfx LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1            Adv Router Id    : 10.20.1.6
Link State Id : 0.0.0.19 (19)
LSA Type      : IE Pfx
Sequence No   : 0x80000001         Checksum         : 0xc8d9
Age           : 328                Length           : 44
Pfx Options   :                   Metric             : 100
Dest Prefix   : 3ffe::100:3800/120
-----
IE Rtr LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1            Adv Router Id    : 10.20.1.6
Link State Id : 10.20.1.2 (169083138)
LSA Type      : IE Rtr
Sequence No   : 0x80000001         Checksum         : 0xcf8b
Age           : 328                Length           : 32
Options       : ----R--EV6         Metric           : 100
ASB Rtr Id    : 10.20.1.2
-----
IE Rtr LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1            Adv Router Id    : 10.20.1.6
Link State Id : 10.20.1.4 (169083140)
LSA Type      : IE Rtr
Sequence No   : 0x80000001         Checksum         : 0xc32f
Age           : 328                Length           : 32
Options       : ----R--EV6         Metric           : 200
ASB Rtr Id    : 10.20.1.4
-----
    
```

```

IE Rtr LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1           Adv Router Id   : 10.20.1.6
Link State Id : 10.20.1.5 (169083141)
LSA Type      : IE Rtr
Sequence No   : 0x80000001       Checksum        : 0xdb79
Age           : 328              Length          : 32
Options       : ---R--EV6       Metric          : 100
ASB Rtr Id    : 10.20.1.5
-----

IA Pfx LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1           Adv Router Id   : 10.20.1.6
Link State Id : 0.0.0.0 (0)
LSA Type      : IA Pfx
Sequence No   : 0x80000003       Checksum        : 0xb8c1
Age           : 293              Length          : 112
Ref Ls Type   : 2001             Ref Ls Id       : 0
Ref Adv Rtr   : 10.20.1.6       No of Pfxs     : 4
Prefix (1)    : 3ffe::3300:2400/120
Pfx Options (1) :
Prefix (2)    : 3ffe::100:2400/120
Pfx Options (2) :
Prefix (3)    : 3ffe::3300:4206/128
Pfx Options (3) : LA           Metric (3)      : 0
Prefix (4)    : 3ffe::100:4206/128
Pfx Options (4) : LA           Metric (4)      : 0
-----

Rtr Inf LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1           Adv Router Id   : 10.20.1.6
Link State Id : 0.0.0.0 (0)
LSA Type      : Rtr Inf
Sequence No   : 0x80000002       Checksum        : 0x4abf
Age           : 329              Length          : 68
TLV dump:
  Capabilities (1) Len 4 :
    0x28000000
  SR algorithm (8) Len 2 :
    0x2      0x0
  SR label range (9) Len 12 :
    Range-size=1000
    Sub-TLV SID/label(7) len 3 :
      label=70000
  SR Readable label depth capability: 15
  non-OSPF Func Capabilities (32768) Len 4 :
    0x80000000
-----

E-Router LSA for Area 0.0.0.1
-----
Area Id       : 0.0.0.1           Adv Router Id   : 10.20.1.6
Link State Id : 0.0.0.0 (0)
LSA Type      : E-Router
Sequence No   : 0x80000003       Checksum        : 0xdf0f
Age           : 293              Length          : 88
Options       : ---R--EV6
Flags         : ABR ASBR        Link Count      : 2
Link Type (1) : P2P Link        Nbr Rtr ID (1) : 10.20.1.2
I/F Index (1) : 2              Nbr I/F Index (1) : 4
Metric (1)    : 100
Adj SID (1)   : 524285         Flags (1)       : BVL--
Link Type (2) : P2P Link        Weight (1)      : 0
I/F Index (2) : 4              Nbr Rtr ID (2) : 10.20.1.3
Nbr I/F Index (2) : 3
    
```

```

Metric (2)      : 100
Adj SID (2)    : 524284
Flags (2)      : BVL--
Weight (2)     : 0
-----
E-IE Pfx LSA for Area 0.0.0.1
-----
Area Id        : 0.0.0.1
Link State Id  : 0.0.0.2 (2)
LSA Type       : E-IE Pfx
Sequence No    : 0x80000001
Age            : 334
Pfx Options    : N LA
Dest Prefix    : 3ffe::a14:106/128
Prefix SID     : 9
Adv Router Id  : 10.20.1.6
Checksum       : 0xf5de
Length        : 60
Metric         : 0
Flags          : NP-----
Algorithm      : 0
-----
E-IE Pfx LSA for Area 0.0.0.1
-----
Area Id        : 0.0.0.1
Link State Id  : 0.0.0.7 (7)
LSA Type       : E-IE Pfx
Sequence No    : 0x80000001
Age            : 328
Pfx Options    : N
Dest Prefix    : 3ffe::100:2c04/128
Prefix SID     : 1
Adv Router Id  : 10.20.1.6
Checksum       : 0xb351
Length        : 60
Metric         : 200
Flags          : NP-----
Algorithm      : 0
-----
E-IE Pfx LSA for Area 0.0.0.1
-----
Area Id        : 0.0.0.1
Link State Id  : 0.0.0.11 (11)
LSA Type       : E-IE Pfx
Sequence No    : 0x80000001
Age            : 328
Pfx Options    : N
Dest Prefix    : 3ffe::a14:102/128
Prefix SID     : 11
Adv Router Id  : 10.20.1.6
Checksum       : 0x4b20
Length        : 60
Metric         : 100
Flags          : NP-----
Algorithm      : 0
-----
E-IE Pfx LSA for Area 0.0.0.1
-----
Area Id        : 0.0.0.1
Link State Id  : 0.0.0.20 (20)
LSA Type       : E-IE Pfx
Sequence No    : 0x80000001
Age            : 328
Pfx Options    : N
Dest Prefix    : 3ffe::100:3705/128
Prefix SID     : 2
Adv Router Id  : 10.20.1.6
Checksum       : 0xcd81
Length        : 60
Metric         : 100
Flags          : NP-----
Algorithm      : 0
-----
E-IE Pfx LSA for Area 0.0.0.1
-----
Area Id        : 0.0.0.1
Link State Id  : 0.0.0.21 (21)
LSA Type       : E-IE Pfx
Sequence No    : 0x80000001
Age            : 328
Pfx Options    : N
Dest Prefix    : 3ffe::a14:105/128
Prefix SID     : 8
Adv Router Id  : 10.20.1.6
Checksum       : 0xc29e
Length        : 60
Metric         : 100
Flags          : NP-----
Algorithm      : 0
-----
  
```

```

E-IE Pfx LSA for Area 0.0.0.1
-----
Area Id           : 0.0.0.1           Adv Router Id    : 10.20.1.6
Link State Id     : 0.0.0.22 (22)
LSA Type          : E-IE Pfx
Sequence No      : 0x80000001        Checksum         : 0x5ca1
Age               : 328                Length          : 60
Pfx Options       : N                 Metric           : 200
Dest Prefix       : 3ffe::a14:104/128
Prefix SID        : 7                 Flags            : NP-----
                                           Algorithm       : 0
-----
E-IA Pfx LSA for Area 0.0.0.1
-----
Area Id           : 0.0.0.1           Adv Router Id    : 10.20.1.6
Link State Id     : 0.0.0.0 (0)
LSA Type          : E-IA Pfx
Sequence No      : 0x80000002        Checksum         : 0x54d0
Age               : 293                Length          : 100
Ref Ls Type       : a021              Ref Ls Id        : 0
Ref Adv Rtr       : 10.20.1.6        No of Pfxs       : 2
Prefix (1)        : 3ffe::3300:4206/128
Pfx Options (1)   : N LA              Metric (1)       : 0
Prefix (2)        : 3ffe::100:4206/128
Pfx Options (2)   : N LA              Metric (2)       : 0
Prefix SID (2)    : 3                 Flags (2)        : NP-----
                                           Algorithm (2)    : 0
=====
    
```

## database

### Syntax

**database** [**purge**]

### Context

[\[Tree\]](#) (clear>router>ospf3 database)

[\[Tree\]](#) (clear>router>ospf database)

### Full Context

clear router ospf3 database

clear router ospf database

### Description

This command clears all LSAs received from other nodes, sets all adjacencies other than two-way to one-way, and refreshes all self-originated LSAs.

### Parameters

#### purge

Clears all self-originated LSAs and re-originates all self-originated LSAs.



## Platforms

All

## database

### Syntax

**database** [*peer ipv6-address*] [ **detail**]

**database** [*peer ipv6-address*] **detail** [**qos**]

**database** *ipv6-address* [*prefix-length*] [ **longer**] [*peer ipv6-address*] [**detail**]

**database** *ipv6-address* [*prefix-length*] [ **longer**] [*peer ipv6-address*] **detail** [**qos**]

### Context

[\[Tree\]](#) (show>router>ripng database)

### Full Context

show router ripng database

### Description

This command displays the routes in the RIPng database.

### Parameters

#### *ipv6-address*

Specifies the RIPng IPv6 address.

#### Values

ipv6-address: x:x:x:x:x:x [-interface]

x:x:x:x:x:d.d.d.d [-interface]

x: [0..FFFF]H

d: [0..255]D

interface — link local addresses up to 32 characters

#### *prefix-length*

The IP prefix in dotted decimal notation for the range used by the ABR to advertise that summarizes the area into another area.

#### Values

ipv6-prefix:

- x:x:x:x:x:x (eight 16-bit pieces)

- x:x:x:x:x:d.d.d.d

- x: [0 to FFFF]H

- d: [0 to 255]D

prefix-length: 0 to 128

**detail**

Displays detailed information.

**qos**

Displays QoS information.

**longer**

Displays more detailed information.

**Platforms**

All

**Output**

The following outputs are examples of router RIPng database information.

**Output Example**

```
*A:Dut-C>config>router>if# show router ripng database
=====
RIP-NG Route Database
=====
Destination                               Interface
Peer                                       Metric TTL Valid
-----
3ffe::10:10:3:0/120                       one
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:3:0/120                       two
    fe80::6629:ffff:fe00:0                 1     3   Yes
3ffe::10:10:3:0/120                       three
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:3:0/120                       four
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:12:0/120                      one
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:12:0/120                      two
    fe80::6629:ffff:fe00:0                 1     3   Yes
3ffe::10:10:12:0/120                      three
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:12:0/120                      four
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:103:0/120                     one
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:103:0/120                     two
    fe80::6629:ffff:fe00:0                 1     3   Yes
3ffe::10:10:103:0/120                     three
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:103:0/120                     four
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:112:0/120                    one
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:112:0/120                    two
    fe80::6629:ffff:fe00:0                 1     3   Yes
3ffe::10:10:112:0/120                    three
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:10:112:0/120                    four
    fe80::6629:ffff:fe00:0                 1     4   Yes
3ffe::10:20:1:2/128                       one
    fe80::6629:ffff:fe00:0                 1     4   Yes
```

```

3ffe::10:20:1:2/128          two
  fe80::6629:ffff:fe00:0    1      4  Yes
3ffe::10:20:1:2/128          three
  fe80::6629:ffff:fe00:0    1      4  Yes
3ffe::10:20:1:2/128          four
  fe80::6629:ffff:fe00:0    1      3  Yes
-----
No. of Routes: 20
=====
show router ripng database [peer <ipv6-address>]

*A:Dut-C>config>router>if# show router ripng database peer fe80::6629:ffff:fe00:0
=====
RIP-NG Route Database
=====
Destination                    Interface
Peer                            Metric TTL Valid
-----
3ffe::10:10:3:0/120            one
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:3:0/120            two
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:3:0/120            three
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:3:0/120            four
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:12:0/120           one
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:12:0/120           two
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:12:0/120           three
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:12:0/120           four
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:103:0/120          one
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:103:0/120          two
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:103:0/120          three
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:103:0/120          four
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:112:0/120          one
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:112:0/120          two
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:112:0/120          three
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:10:112:0/120          four
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:20:1:2/128            one
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:20:1:2/128            two
  fe80::6629:ffff:fe00:0      1      3  Yes
3ffe::10:20:1:2/128            three
  fe80::6629:ffff:fe00:0      1      4  Yes
3ffe::10:20:1:2/128            four
  fe80::6629:ffff:fe00:0      1      4  Yes
-----
No. of Routes: 20
=====
show router ripng database [peer <ipv6-address>] detail

*A:DutC>config>router>if# show router ripng database peer fe80::6629:ffff:fe00:0 detail
  
```

```

=====
RIP-NG Route Database (Detail)
=====
Destination : 3ffe::10:10:3:0/120      Metric      : 1
Interface   : one                       TTL         : 4
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:3:0/120      Metric      : 1
Interface   : two                       TTL         : 3
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:3:0/120      Metric      : 1
Interface   : three                     TTL         : 3
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:3:0/120      Metric      : 1
Interface   : four                       TTL         : 3
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:12:0/120     Metric      : 1
Interface   : one                       TTL         : 4
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:12:0/120     Metric      : 1
Interface   : two                       TTL         : 3
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:12:0/120     Metric      : 1
Interface   : three                     TTL         : 3
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:12:0/120     Metric      : 1
Interface   : four                       TTL         : 4
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:103:0/120    Metric      : 1
Interface   : one                       TTL         : 4
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:103:0/120    Metric      : 1
Interface   : two                       TTL         : 4
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:103:0/120    Metric      : 1
Interface   : three                     TTL         : 4
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:103:0/120    Metric      : 1
Interface   : four                       TTL         : 4
Next Hop    : ::                       Tag         : 0
Peer        : fe80::6629:ffff:fe00:0    Valid      : Yes

Destination : 3ffe::10:10:112:0/120    Metric      : 1

```

```

Interface   : one           TTL           : 4
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes

Destination : 3ffe::10:10:112:0/120 Metric        : 1
Interface   : two           TTL           : 4
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes

Destination : 3ffe::10:10:112:0/120 Metric        : 1
Interface   : three        TTL           : 4
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes

Destination : 3ffe::10:10:112:0/120 Metric        : 1
Interface   : four         TTL           : 4
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes

Destination : 3ffe::10:20:1:2/128 Metric         : 1
Interface   : one           TTL           : 4
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes

Destination : 3ffe::10:20:1:2/128 Metric         : 1
Interface   : two           TTL           : 3
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes

Destination : 3ffe::10:20:1:2/128 Metric         : 1
Interface   : three        TTL           : 4
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes

Destination : 3ffe::10:20:1:2/128 Metric         : 1
Interface   : four         TTL           : 4
Next Hop   : ::             Tag           : 0
Peer       : fe80::6629:ffff:fe00:0 Valid         : Yes
    
```

```

=====
show router ripng database <ipv6-address[/prefix-length]>
*A:Dut-C>config>router>if# show router ripng database 3ffe::10:20:1:2/128
=====
RIP-NG Route Database
=====
Destination                               Interface
Peer                                       Metric TTL Valid
-----
3ffe::10:20:1:2/128                       one
  fe80::6629:ffff:fe00:0                   1     4  Yes
3ffe::10:20:1:2/128                       two
  fe80::6629:ffff:fe00:0                   1     4  Yes
3ffe::10:20:1:2/128                       three
  fe80::6629:ffff:fe00:0                   1     4  Yes
3ffe::10:20:1:2/128                       four
  fe80::6629:ffff:fe00:0                   1     3  Yes
-----
No. of Routes: 4
=====
    
```

## database

### Syntax

**database**

### Context

[\[Tree\]](#) (clear>router>ripng database)

### Full Context

clear router ripng database

### Description

This command flushes all routes in the RIPng database.

### Platforms

All

## database

### Syntax

**database** [bsl [256..1024]] **subdomain-id** [ 0..255]

### Context

[\[Tree\]](#) (clear>router>bier database)

### Full Context

clear router bier database

### Description

This command clears the BIER database.

### Platforms

All

## database

### Syntax

**database** [*system-id*]

## Context

[\[Tree\]](#) (clear>service>id>spb database)

## Full Context

clear service id spb database

## Description

This command clears and resets the Shortest Path Bridging (SPB) database.

## Parameters

### *system-id*

Specifies the system ID. When the system ID is entered, only the specified entries are removed from the IS-IS adjacency database.

**Values** 6-octet system identifier (xxxx.xxxx.xxxx)

## Platforms

All

## 7.6 datapath

### datapath

## Syntax

**datapath** *port-id* [**mac** *mac-chip-number*] [**fp** *fp-number*] [**detail**]

## Context

[\[Tree\]](#) (show datapath)

## Full Context

show datapath

## Description

This command displays the datapath mapping for the specified card, MDA, FP, MAC, connector, and port combinations. Fully qualified port identifiers are displayed for ports when the **detail** or **port** parameters are specified.

This command is supported on FP4-based hardware only.

## Parameters

### *port-id*

Specifies the port ID.

**slot**

Specifies the slot number of the card in the chassis to display. The maximum slot number is platform dependent. See the *Installation Guides* for more information.

**Values** 1 to 10

**mda**

Specifies the MDA number in the slot to display. This is an integer value relative to the card.

**Values** 1 to 2

**xiom**

Specifies the XIOM number in the slot to display.

**Values** x1

**connector**

Specifies the connector number to display. This is an integer value relative to the MDA.

**Values** c1 to c54

**port**

Specifies the connector port number to display. The full port identifier is displayed. This is an integer value relative to the connector.

**Values** 1 to 10

**fp-number**

Specifies the FP number to display. This is an integer value relative to the card.

**Values** 1 to 8

**mac-chip-number**

Specifies the MAC number to display. This is an integer value relative to the MDA.

**Values** 1 to 12

**detail**

Displays the full port identifiers for all ports with configured connectors.

**Platforms**

All

**Output**

The following output is an example of the **show datapath** command.

**Output Example:**

```
*A:PE# show datapath 1/2/c1/1
```

```
=====
Card      MDA      FP      MAC Chip Num  Connector  Ports
```



```

-----
1      2      1      1      c1      1/2/c1/1
=====
*A:PE# show datapath 1/2 fp 1

=====
Card      MDA      FP      MAC Chip Num  Connector  Ports
-----
1      2      1      1      c1
1      2      1      1      c2
1      2      1      1      c3
1      2      1      1      c4
1      2      1      1      c5
1      2      1      1      c6
=====

*A:PE# show datapath 1/2 mac 1 detail

=====
Card      MDA      FP      MAC Chip Num  Connector  Ports
-----
1      2      1      1      c1      1/2/c1/1
1      2      1      1      c2      1/2/c2/1
1      2      1      1      c3      1/2/c3/1
1      2      1      1      c4      1/2/c4/1
1      2      1      1      c5      1/2/c5/1
1      2      1      1      c6      1/2/c6/1
=====

*A:PE#

A:Dut-F# show datapath 1

=====
Card      [XIOM/]MDA  FP      MAC Chip Num  Connector  Port
-----
1      x1/1      1      1      c1
1      x1/1      1      1      c2
1      x1/1      1      1      c3
1      x1/1      1      1      c4
1      x1/1      1      1      c5
1      x1/1      1      1      c6
1      x1/1      1      2      c7
1      x1/1      1      2      c8
1      x1/1      1      2      c9
1      x1/1      1      2      c10
1      x1/1      1      2      c11
    
```

## 7.7 datastore-locks

### datastore-locks

#### Syntax

**datastore-locks [detail]**

## Context

[\[Tree\]](#) (show>system>management-interface datastore-locks)

## Full Context

show system management-interface datastore-locks

## Description

This command displays datastore locks information.

## Parameters

### detail

Displays session-specific information.

## Platforms

All

## Output

The following output is an example of detail datastore locks information for all datastores. [Table 102: Datastore-locks Output Fields](#) describes the output fields.

### Output Example

```
[ ]
A:admin@node-1# show system management-interface datastore-locks detail
=====
Session ID  Region                Datastore              Lock State
Username    Session Mode          Session Type           Idle Time
-----
6           configure             Candidate              Unlocked
admin      Global                MD-CLI (1)            0d 00:00:09
-----
Number of sessions: 1
'#' indicates the current active session
'(n)' indicates the number of internal sessions
=====
```

Table 102: Datastore-locks Output Fields

Label	Description
Session ID	The session ID.
Region	The region or scope that the datastore belongs to.
Datastore	Datastores that can be locked. For example: Running and Candidate.
Lock State	Locked — Indicates the session is in a locked state. Unlocked — Indicates the session is in an unlocked state.

Label	Description
Username	The name of the user.
Session Mode	Global — A shared session. Exclusive — An exclusive session.
Idle Time	The idle time of the session.
Session Type	NETCONF — Indicates a NETCONF session is running. MD-CLI — Indicates an MD-CLI session is running. gRPC — Indicates a gRPC session is running. SNMP — Indicates an SNMP session is running. Classic CLI — Indicates a classic CLI session is running. System — Indicates a system (EHS or CRON) session is running.
From	The originating IP address.

## 7.8 debounce

### debounce

#### Syntax

**debounce peer *ip-address* ring *sync-tag***

#### Context

[\[Tree\]](#) (clear>redundancy>multi-chassis>mcr debounce)

#### Full Context

clear redundancy multi-chassis mc-ring debounce

#### Description

This command clears multi-chassis ring operational state debounce history.

#### Parameters

##### *ip-address*

Clears debounce history for the specified IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)

- x:x:x:x:x:d.d.d.d
- x – [0 to FFFF] H
- d – [0 to 255] D

### ***sync-tag***

Clears debounce history for the specified sync tag.

### **Platforms**

All

## **7.9 debug**

### **debug**

#### **Syntax**

**debug** [*application*]

#### **Context**

[\[Tree\]](#) (show debug)

#### **Full Context**

show debug

#### **Description**

This command displays set debug points.



#### **Note:**

This command is not available in the MD-CLI. Use the MD-CLI **admin show configuration debug** command or the **info** command in the debug configuration region.

#### **Parameters**

***application***

Display which debug points have been set.

**Values** aaa, anysec, application-assurance, atm, bgp, bier, call-trace, certificate, cisco-hdlc, diameter, dynamic-services, eth-cfm, ethernet, filter, frame-relay, gtp, igmp, ip, ipsec, isis, l2tp, lag, ldp, local-dhcp-server, mcast-management, mirror, mld, mpls, msdp, mtrace, mtrace2, nat, oam, open-flow, ospf, ospf3, pcep, pcp, pim, ppp, python, radius, radius-proxy, rip, ripng, rpki, rsvp, service, snmp, srrp, subscriber-mgmt, system, upnp, vrrp, wlan-gw, wpp

## Platforms

All

## Output

The following shows an example of debug output.

### Output Example

```
*A:EsrC# show debug
debug
  mirror-source 100
    subscriber "user1" ingress
    subscriber "user2" fc be h2 h1 nc egress
    subscriber "user3" ingress egress
    subscriber "user4" sap 1/1/2:1 fc af ef nc ingress
    subscriber "user5" sap 1/1/2:1 egress
    subscriber "user6" sap 1/1/2:1 fc be l2 af h2 ef nc ingress egress
    subscriber "user7" sap 1/1/2:1 ip 1.1.0.7 fc l1 h2 ingress
    subscriber "user8" sap 1/1/2:1 ip 1.1.0.8 fc af l1 h2 ef nc egress
    subscriber "user9" sap 1/1/2:1 ip 1.1.0.9 ingress egress
    subscriber "user10" sap 1/1/
2:1 mac 00:00:01:00:00:01 fc be l2 l1 h1 nc ingress
    subscriber "user11" sap 1/1/
2:1 mac 00:00:01:00:00:02 fc be l1 h2 ef h1 egress
    subscriber "user12" sap 1/1/
2:1 mac 00:00:01:00:00:03 fc be ef ingress egress
    subscriber "user13" sap 1/1/
2:1 ip 1.1.0.13 mac 00:00:01:00:00:01 fc be ef h1 ingress
    subscriber "user14" sap 1/1/2:1 ip 1.1.0.14 mac 00:00:01:00:00:02 egress
    subscriber "user15" sap 1/1/
2:1 ip 1.1.0.15 mac 00:00:01:00:00:03 fc af l1 ef nc ingress egress
    subscriber "user16" sla-profile "sla1" ingress
    subscriber "user17" sla-profile "sla2" egress
    subscriber "user18" sla-profile "sla3" fc be af h2 ingress egress
  no shutdown
  exit
exit
*A:EsrC#

*A:alul# show debug
debug
  mirror-source 101
    port 1/1/1 ingress
    no shutdown
  exit
  mirror-source 102
    port 1/1/3 egress
    no shutdown
  exit
exit
*A:alul#
```

## 7.10 debug-packet

### debug-packet

#### Syntax

**debug-packet** [clear]

#### Context

[\[Tree\]](#) (tools>dump>eth-cfm debug-packet)

#### Full Context

tools dump eth-cfm debug-packet

#### Description

This command displays and optionally clears the counters representing the number of CFM PDUs that matched the debug criteria but were not passed to the debug logger. This situation is caused by a full message queue.

#### Parameters

**clear**

Clears the current counters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of CFM-PDU information.

#### Output Example

```
tools dump eth-cfm debug-packet
=====
ETH-CFM Debug Logging Message Queue Statistics
=====
Rx Debug Exceptions      : 0
Tx Debug Exceptions      : 0
=====
```

## 7.11 declined-addresses

### declined-addresses

#### Syntax

**declined-addresses** *ip-address[/mask]* [**detail**]

**declined-addresses pool** *pool-name*

#### Context

[\[Tree\]](#) (show>router>dhcp>server declined-addresses)

#### Full Context

show router dhcp local-dhcp-server declined-addresses

#### Description

This command display information about declined addresses.

#### Parameters

##### *pool-name*

Specifies a DHCP pool name on the router.

##### *ip-address*

Specifies the IP address of the DNS server. This address must be unique within the subnet and specified in dotted decimal notation. Allowed values are IP addresses in the range 1.0.0.0 – 223.255.255.255 (with support of /31 subnets).

##### **detail**

Displays detailed information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of declined address information

#### Output Example

```
*A:ALA-48>show>router>dhcp>server# declined-addresses pool test
=====
Declined addresses for server test Base
=====
Pool          Subnet          IP Address
PPPoE User Name      Time           MAC Address    Type
Option 82 Circuit ID
-----
No Matching Entries
=====
```

```
*A:ALA-48>show>router>dhcp>server#
```

[Table 103: Declined Address Pool Field Descriptions](#) describes declined address pool output fields.

*Table 103: Declined Address Pool Field Descriptions*

Field	Description
Pool	The name of the IP address pool
Subnet	The subnet address
IP Address	The declined IP address
Time	The creation time of this entry
MAC Address	The declined MAC address
Type	The type of declined address
PPPoE User Name	The name of the PPPoE user name
Option 82 Circuit ID	The declined circuit ID from the Option 82

## declined-addresses

### Syntax

**declined-addresses** *ip-address[/mask]*

**declined-addresses** **pool** *pool-name*

### Context

[\[Tree\]](#) (clear>router>dhcp>server declined-addresses)

### Full Context

clear router dhcp local-dhcp-server declined-addresses

### Description

This command clears declined DHCP addresses.

### Parameters

***pool-name***

Clears information about the declined pool name.

***ip-address[/mask]***

Clears information about the declined IP address and mask.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## 7.12 default-domain

### default-domain

#### Syntax

**default-domain** [**bridge-identifier** {*bridge-id* | *bridge-name*}] [**vlan** *vlan-id*] [**system-settings**]

#### Context

[\[Tree\]](#) (show>eth-cfm default-domain)

#### Full Context

show eth-cfm default-domain

#### Description

This command displays per-MIP index (**bridge-identifier** and **vlan**) configuration as entered under the **default-domain** entries.

#### Parameters

*bridge-id*

Specifies the bridge identifier related to the MIP. This is equivalent to the *service-id*.

**Values** 1 to 2147483647

*bridge-name*

Specifies the name of the bridge related to the MIP, up to 64 characters.

*vlan-id*

Specifies the VLAN ID matching the primary VLAN, or "none" if **primary-vlan-enable** is not configured.

**Values** 1 to 4094, none

**system-settings**

Keyword to display the system settings.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of default domain information, and [Table 104: Output fields: ETH-CFM default domain](#) describes the output fields.

#### Output Example

```
show eth-cfm default-domain
=====
```

```

Default Domain Information
=====
System Settings
MHF Creation : none           Level           : 0
Id Permission : none         MIP Ltr Priority : 7
=====
BridgeName:BridgeId          VLAN Level Creation IdPerm  LtrPr
-----
7:7                          none defer defer    defer  defer
string-100:1000000          10  4   default chassis 7
string-100:1000000          20  5   default defer    defer
west-toronto-corridor-circuit-[1234567.74.001.11111]:1000001
                             none 3   explicit defer    defer
west-toronto-corridor-circuit-[1234567.74.001.11111]:1000001
                             600 defer defer    defer  defer
west-toronto-corridor-circuit-[1234567.74.001.11111]:1000001
                             601 defer defer    defer  defer
=====
    
```

Table 104: Output fields: ETH-CFM default domain

Label	Description
BridgeName:BridgeID	The name and ID of the association service BridgeName:BridgeID combinations that exceed the allowed column length causes the associated output to be produced on a separate line.
VLAN	The numerical value of the primary VLAN associated with the MIP, or the value <b>none</b>
Level	The configured level value, or <b>defer</b> to the value specified under the system settings for the MIP
Creation	The configured MHF creation mode, or <b>defer</b> to the value specified under the system settings for the MIP
IdPerm	The configured identifier that is carried in supporting ETH-CFM PDUs, or <b>defer</b> to the value specified under the system settings
LtrPr	The configured MIP LTR priority, or <b>defer</b> to the value specified under the system settings for the MIP

## 7.13 delay-template

### delay-template

#### Syntax

**delay-template** *template-name*

## Context

[\[Tree\]](#) (show>oam-pm>streaming delay-template)

## Full Context

show oam-pm streaming delay-template

## Description

This command displays the configuration data for one or all OAM performance monitoring delay templates.

## Parameters

### *template-name*

Displays the results for a specific delay template, up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of OAM-PM streaming **delay-template** summary information. [Table 105: Show delay-template Output Fields](#) describes the delay template fields.

## Output Example

```
show oam-pm streaming delay-template
-----
Streaming Delay Templates
-----
Name                                     Admin   Tests
-----
stream-1                                 Up      7
-----
No. of Streaming Delay Templates: 1
-----

show oam-pm streaming delay-template "stream-1"
-----
Tpl Name   : stream-1
Description : stream delay stats base 1
-----
Admin State      : Up
FD Average       : round-trip
IFDV Average     : round-trip
Sample Window    : 10 seconds
Window Integrity : 80%
Active Test Refs : 6
Total Test Refs  : 7
-----
```

Table 105: Show delay-template Output Fields

Label	Description
Name	Name of the delay template

Label	Description
Admin	State of the delay template
Tests	Number of tests referencing the delay template
Tmpl Name	Name of the delay template
Description	Description of the delay template (truncated beyond width)
Admin State	Up — The delay template is administratively enabled Down — The delay template is administratively disabled
FD Average	forward — The average frame delay metric for forward direction backward — The average frame delay metric for backward direction round-trip — The average frame delay metric for round-trip direction
IFDV Average	forward — The average inter-frame delay variation metric for forward direction backward — The average inter-frame delay variation metric for backward direction round-trip — The average inter-frame delay variation metric for round-trip direction
Sample Window	Length of the sample window
Window Integrity	Percentage required to ensure integrity of the reporting
Active Test Refs	Number of tests actively referencing the delay template
Total Test Refs	Number of total tests referencing the delay template

## 7.14 delay-template-using

### delay-template-using

#### Syntax

**delay-template-using** [**delay-template** *template-name*]

#### Context

[\[Tree\]](#) (show>oam-pm>streaming delay-template-using)

#### Full Context

show oam-pm streaming delay-template-using

## Description

This command displays the list of sessions configured against one or all OAM performance monitoring delay templates.

## Parameters

### *template-name*

Displays the results for a specific delay template up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of OAM-PM streaming **delay-template-using** summary information.

### Output Example

```
show oam-pm streaming delay-template-using
=====
OAM Performance Monitoring Tests Per Delay Template
=====
Template Name                               Admin
  Session Name                               Test Type   State
-----
stream-1                                     Up
  eth-circuit-service-epipe1                DMM         Inact
  ip-lpb111-SR-TE-LSP                       TWL         Act
  ip-circuit-service-vprn2                   TWL         Act
  ip-rtr-telemetry-streaming                 TWL         Act
  mpls-dm-rsvp-PE-2-PE-1                     DM          Act
  mpls-dm-static-PE-2-PE-1                   DM          Act
  mpls-dm-rsvp-PE-2-PE-1-hop1                DM          Act
=====
```

```
show oam-pm streaming delay-template-using delay-template "stream-1"
=====
OAM Performance Monitoring Tests Per Delay Template
=====
Template Name                               Admin
  Session Name                               Test Type   State
-----
stream-1                                     Up
  eth-circuit-service-epipe1                DMM         Inact
  ip-lpb111-SR-TE-LSP                       TWL         Act
  ip-circuit-service-vprn2                   TWL         Act
  ip-rtr-telemetry-streaming                 TWL         Act
  mpls-dm-rsvp-PE-2-PE-1                     DM          Act
  mpls-dm-static-PE-2-PE-1                   DM          Act
  mpls-dm-rsvp-PE-2-PE-1-hop1                DM          Act
=====
```

## 7.15 dest-tracking

### dest-tracking

#### Syntax

**dest-tracking ip [detail]**

**dest-tracking ipv6 [detail]**

**dest-tracking sap [detail]**

**dest-tracking sdp [detail]**

#### Context

[\[Tree\]](#) (tools>dump>filter>resources dest-tracking)

#### Full Context

tools dump filter resources dest-tracking

#### Description

This command displays information about resources pertaining to tracked targets.

#### Parameters

**ip**

Displays information about IPv4 targets.

**ipv6**

Displays information about IPv6 targets.

**sap**

Displays information about SAP targets.

**sdp**

Displays information about SDP targets.

**detail**

Displays detailed information.

#### Platforms

All

#### Output

The following output is an example of filter resource SAP destination tracking information.

#### Output Example

```
A:node-2>tools>dump>filter>resources# dest-tracking sap
```

```

Unique SAPs with tracked forwarding states
=====
Used   : 1
Free   : 4095
Total  : 4096
=====
    
```

The following output is an example of filter resource SAP destination tracking detailed information.

### Output Example

```

A:node-2>tools>dump>filter>resources>dest-tracking# sap detail
=====
Unique SAPs with tracked forwarding states
=====
Num  Destination                               Ref. count
-----
   1  sap 1/2/2                                 1
=====
Unique SAPs with tracked forwarding states
=====
Used   : 1
Free   : 4095
Total  : 4096
=====
    
```

## 7.16 detail

### detail

#### Syntax

**detail** [*session ip-addr [label-space]*] [*family*]

#### Context

[\[Tree\]](#) (show>router>ldp>bindings>active detail)

#### Full Context

show router ldp bindings active detail

#### Description

This command displays details of LDP bindings.

#### Parameters

##### *family*

Displays either IPv4 or IPv6 LDP information.

##### **session ip-addr[label-space]**

Specifies the IP address and label space identifier.

**Values** <ip-addr[label-spa\*> : ipv4-address:label-space ipv6-address[label-space] label-space - [0 to 65535]

## Platforms

All

## detail

## Syntax

**detail**

## Context

[\[Tree\]](#) (show>router>pcep>pcc detail)

## Full Context

show router pcep pcc detail

## Description

This command displays PCEP detail information.

## Platforms

All

## Output

PCEP Detail Output

[Table 106: PCEP Detail Output Fields](#) describes PCEP detail and status output fields.

## Output Example

```
*A:Dut-C>config>router>mpls# show router pcep pcc detail
=====
Path Computation Element Protocol (PCEP) Path Computation Client (PCC) Info
=====
Admin Status           : Up           Oper Status           : Up
Unknown Msg Limit     : 10 msg/min
Keepalive Interval    : 30 seconds   DeadTimer Interval   : 120 seconds
Capabilities List      : stateful-delegate stateful-pce segment-rt-path rsvp-
                        path pce-initiated-lsp
Address                : 10.20.1.3
Report Path Constraints: True
Redelegation Interval : 90 seconds
State Interval        : 180 seconds   State Timer Action    : remove
Max SR-TE PCE Init Lsps: 8191
Open Wait Timer       : 60 seconds   Keep Wait Timer       : 60 seconds
Sync Timer            : 60 seconds   Request Timer         : 120 seconds
Connection Timer      : 60 seconds   Allow Negotiations    : False
Max Sessions          : 1           Max Unknown Req       : 1000
=====
```



Table 106: PCEP Detail Output Fields

Label	Description
Admin Status	Down — PCEP is administratively disabled. Up — PCEP is administratively enabled.
Oper Status	Down — PCEP is operationally down. Up — PCEP is operationally up.
Unknown Msg Limit	Specifies the unknown messages, per minute, limit.
Keepalive Interval	Specifies the keepalive interval.
DeadTimer Interval	Specifies the number of matching entries.
Capabilities List	Specifies the capabilities listing.
Address	Specifies the IP address.
Report Path Constraints	True — Path constraints will be reported. False — Path constraints will not be reported.
Redelegation Interval	Specifies the redelegation timer interval.
State Interval	Specifies the state timer interval.
State Timer Action	Remove — Specifies the state timer action is remove. None — Specifies the state timer action is none.
Max SR-TE PCE Init Lsps	Specifies the maximum number of PCE initiated SR-TE LSPs that can be created by the router.
Open Wait Timer	Specifies the open wait timer value.
Keep Wait Timer	Specifies the keep wait timer value.
Sync Timer	Specifies the sync timer value.
Request Timer	Specifies the request timer value.
Connection Timer	Specifies the connection timer value.
Allow Negotiations	True — Allow negotiations will occur. False — Allow negotiations will not occur.
Max Sessions	Specifies the maximum sessions value.

Label	Description
Max Unknown Req	Specifies the maximum unknown requests value.

## detail

### Syntax

**detail** [*partition*]

### Context

[\[Tree\]](#) (show>app-assure>group>http-enrich detail)

### Full Context

show application-assurance group http-enrich detail

### Description

This command displays detailed HTTP Enrichment information.

### Parameters

***partition***

Specifies the partition within the group.

**Values** 1 to 65535

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## detail

### Syntax

**detail**

### Context

[\[Tree\]](#) (show>router>bgp>routes detail)

### Full Context

show router bgp routes detail

### Description

This command displays detailed information about the BGP routes, including information about the original path attribute values.

**detail** is a parameter of the **show router bgp routes** command. Depending on the parameters that are used to issue the command, the output can display a narrower or wider set of routes, including routes belonging to other address families. See the **show router bgp routes** command description for syntax variants, parameter descriptions and values, and output examples.

## Platforms

All

## 7.17 detected-protocols

### detected-protocols

#### Syntax

```
detected-protocols {all | sap sap-id | spoke-sdp sdp-id[:vc-id]}
```

#### Context

[\[Tree\]](#) (clear>service>id>stp detected-protocols)

#### Full Context

```
clear service id stp detected-protocols
```

#### Description

RSTP automatically falls back to STP mode when it receives an STP BPDU. The **clear detected-protocols** command forces the system to revert to the default RSTP mode on the SAP or spoke SDP.

#### Parameters

**all**

Clears all detected protocol information.

**sap-id**

Clears the specified lease state SAP information.

**sdp-id**

The SDP ID to be cleared.

**Values** 1 to 17407

**vc-id**

The virtual circuit ID on the SDP ID to be cleared.

**Values** 1 to 4294967295

## Platforms

All

## 7.18 deterministic

### deterministic

#### Syntax

**deterministic**

#### Context

[\[Tree\]](#) (tools>perform>nat deterministic)

#### Full Context

tools perform nat deterministic

#### Description

Commands in this context perform actions of deterministic NAT.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 7.19 device

### device

#### Syntax

**device** [*ieee-address*]

#### Context

[\[Tree\]](#) (show>system>bluetooth device)

#### Full Context

show system bluetooth device

#### Description

This command displays information for Bluetooth devices registered with the system.

#### Parameters

***ieee-address***

Specifies the MAC address, up to 30 characters.

## Platforms

7750 SR-1, 7750 SR-s, 7950 XRS-20e

## Output

Use the following command to display Bluetooth device information.

```
show system bluetooth device
```

The following output is an example of Bluetooth device information, and [Table 107: Output fields: Bluetooth device](#) describes the output fields.

### Output Example

```
=====
System-wide Bluetooth Configuration
=====
Passkey           : 123456           Advertising Timeout: 30
Power State       : off           Pairing Button      : Disabled
=====

Bluetooth Devices
=====
Device MAC        : 12:34:12:34:12:34
Description       : (Not Specified)

-----
Number of Devices : 1
=====
```

Table 107: Output fields: Bluetooth device

Label	Description
Passkey	The Bluetooth passkey in use by the system
Advertising Timeout	The amount of time, in seconds, that the Bluetooth module advertises it is ready to pair.
Power State	The operating mode for Bluetooth
Pairing Button	Displays whether the pairing button is enabled for use
Device MAC	The MAC address of the Bluetooth device registered for connection to the module
Description	The description of the registered Bluetooth device

## 7.20 dhcp

dhcp

### Syntax

dhcp

### Context

[\[Tree\]](#) (show>service>id dhcp)

[\[Tree\]](#) (show>router dhcp)

### Full Context

show service id dhcp

show router dhcp

### Description

Commands in this context display DHCP information.

### Platforms

All

dhcp

### Syntax

dhcp

### Context

[\[Tree\]](#) (clear>router dhcp)

[\[Tree\]](#) (clear>service>id dhcp)

### Full Context

clear router dhcp

clear service id dhcp

### Description

Commands in this context clear and reset DHCP entities.

### Platforms

All

## dhcp

### Syntax

dhcp

### Context

[\[Tree\]](#) (tools>perform>router dhcp)

### Full Context

tools perform router dhcp

### Description

Commands in this context configure tools DHCP parameters.

### Platforms

All

## dhcp

### Syntax

dhcp [*filter-id*]

### Context

[\[Tree\]](#) (show>filter dhcp)

### Full Context

show filter dhcp

### Description

This command displays DHCP filter information.

### Parameters

*filter-id*

Displays detailed information for the specified filter ID and its filter entries.

**Values** 1 to 65535

### Platforms

All

### Output

The following output is an example of the command information when no filter ID is specified.

## Output Example

```
*B:TechPubs>config# show filter dhcp
=====
DHCP Filters
=====
Filter-Id   Applied Description
-----
10          No      test-dhcp-filter
-----
Num filter entries: 1
=====
*B:TechPubs>config#

*B:TechPubs>config# show filter dhcp 10
=====
DHCP Filter
=====
Filter-Id   : 10                Applied      : No
Entries     : 0
Description : test-dhcp-filter
-----
Filter Match Criteria
-----
No Match Criteria Found
=====
*B:TechPubs>config#
```

## 7.21 dhcp-client

### dhcp-client

#### Syntax

**dhcp-client interface *ip-int-name* statistics**

#### Context

[\[Tree\]](#) (clear>router>autoconfigure dhcp-client)

#### Full Context

clear router autoconfigure dhcp-client

#### Description

This command clears DHCP client information.

#### Parameters

***ip-int-name***

Clears DHCP client information on the specified interface, up to 32 characters.



## Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## dhcp-client

### Syntax

**dhcp-client interface** *ip-int-name* **routes**  
**dhcp-client interface** *ip-int-name* **statistics**  
**dhcp-client interface** *ip-int-name*

### Context

[\[Tree\]](#) (show>router>autoconfigure dhcp-client)

### Full Context

show router autoconfigure dhcp-client

### Description

This command displays DHCP client information.

### Parameters

#### *ip-int-name*

Specifies the IP interface name, up to 32 characters.

#### **statistics**

Displays DHCP client statistics.

#### **routes**

Displays routes received by the DHCP protocol.

## Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## 7.22 dhcp-rx-stats

## dhcp-rx-stats

### Syntax

**dhcp-rx-stats** [clear]

### Context

[\[Tree\]](#) (tools>dump dhcp-rx-stats)

## Full Context

```
tools dump dhcp-rx-stats
```

## Description

This command displays the DHCP received packet statistics.

## Parameters

**clear**

Clears DHCP RX statistics.

## Platforms

All

## Output

The following output is an example of DHCP RX statistics information.

### Output Example

```
*A:# tools dump dhcp-rx-stats
=====
DHCP Received Packet Statistics
=====
```

Type	Received	Forwarded	Dropped	Dropped(ESM)
IPv4 DISCOVER	72	72	0	0
OFFER	2	2	0	0
REQUEST	4	4	0	0
DECLINE	0	0	0	0
ACK	1	1	0	0
NAK	0	0	0	0
RELEASE	0	0	0	0
INFORM	0	0	0	0
FORCERENEW	0	0	0	0
LEASEQUERY	0	0	0	0
LEASEUNASSIGNED	0	0	0	0
LEASEUNKNOWN	0	0	0	0
LEASEACTIVE	0	0	0	0
RENEW	2	2	0	0
IPv6 SOLICIT	0	0	0	0
ADVERTISE	0	0	0	0
REQUEST	0	0	0	0
CONFIRM	0	0	0	0
RENEW	0	0	0	0
REBIND	0	0	0	0
REPLY	0	0	0	0
RELEASE	0	0	0	0
DECLINE	0	0	0	0
RECONFIGURE	0	0	0	0
INFO_REQUEST	0	0	0	0
RELAY_FORW	0	0	0	0
RELAY_REPLY	0	0	0	0
LEASEQUERY	0	0	0	0
LEASEQUERY_REPLY	0	0	0	0
Total	81	81	0	0

```
Maximum queue length      : 0  
Maximum outst pbufs total : 1  
Maximum outst pbufs to client : 1  
=====
```

## 7.23 dhcp6

### dhcp6

#### Syntax

dhcp6

#### Context

[\[Tree\]](#) (show>system dhcp6)

[\[Tree\]](#) (show>service>id dhcp6)

[\[Tree\]](#) (show>router dhcp6)

#### Full Context

show system dhcp6

show service id dhcp6

show router dhcp6

#### Description

Commands in this context display DHCP6 related information.

#### Platforms

All

### dhcp6

#### Syntax

dhcp6

#### Context

[\[Tree\]](#) (clear>service>id dhcp6)

[\[Tree\]](#) (clear>router dhcp6)

#### Full Context

clear service id dhcp6

clear router dhcp6

## Description

Commands in this context clear DHCPv6 parameters.

## Platforms

All

```
dhcp6
```

## Syntax

```
dhcp6
```

## Context

[\[Tree\]](#) (tools>perform>router dhcp6)

## Full Context

```
tools perform router dhcp6
```

## Description

Commands in this context configure tools DHCP6 parameters.

## Platforms

All

```
dhcp6
```

## Syntax

```
dhcp6 [filter-id]
```

## Context

[\[Tree\]](#) (show>filter dhcp6)

## Full Context

```
show filter dhcp6
```

## Description

This command displays DHCP6 filter information.

## Parameters

*filter-id*

Displays detailed information for the specified filter ID and its filter entries.

**Values** 1 to 65535

## Platforms

All

## 7.24 dhcp6-client

### dhcp6-client

#### Syntax

**dhcp6-client interface** *ip-int-name* **statistics**

#### Context

[\[Tree\]](#) (clear>router>autoconfigure dhcp6-client)

#### Full Context

clear router autoconfigure dhcp6-client

#### Description

This command clears DHCPv6 client information.

#### Parameters

*ip-int-name*

Clears DHCPv6 client information on the specified interface, up to 32 characters.

#### Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

### dhcp6-client

#### Syntax

**dhcp6-client interface** *ip-int-name*  
**dhcp6-client interface** *ip-int-name* **statistics**

#### Context

[\[Tree\]](#) (show>router>autoconfigure dhcp6-client)

#### Full Context

show router autoconfigure dhcp6-client

#### Description

This command displays DHCPv6 client information.

## Parameters

### *ip-int-name*

Specifies the IP interface name, up to 32 characters.

### **statistics**

Displays DHCPv6 client statistics.

## Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## 7.25 diameter

### diameter

## Syntax

diameter

## Context

[\[Tree\]](#) (show>service>active-subscribers>hierarchy diameter)

## Full Context

show service active-subscribers hierarchy diameter

## Description

This command provides information about the active Diameter Gx and Diameter Gy session IDs.



**Note:** The diameter NASREQ application is stateless in SR OS and therefore a NASREQ session ID is not included in the output.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the active Diameter Gx and Gy session IDs and [Table 108: Active subscriber hierarchy diameter field descriptions](#) describes the output fields.

```
show service active-subscribers hierarchy diameter
```

## Output Example

```
=====
Active Subscribers Hierarchy (diameter information)
=====
-- ipoe-1
   (sub-profile-1)
```

```

|
+-- sap:[1/x1/1/c1/4:2211.2005] - sla:sla-profile-1
   |
   | Gy-diam-session-id:bng-gy.realm-2.com;1668427651;23
   |
   +-- IPOE-Session - mac:00:bb:02:00:00:05
      |
      | Gx-diam-session-id:bng-nasreq-gx.realm-1.com;1668427651;22
      |
      | -- 10.2.1.13
      |
      +-- 2001:db8:b002:100::1/128
         |
         +-- 2001:db8:b002:101::/64
    -----
Number of active subscribers : 1
Flags: (N) = the host or the managed route is in non-forwarding state
=====
    
```

Table 108: Active subscriber hierarchy diameter field descriptions

Field	Description
Gy-diam-session-id	The active Diameter Gy session ID for this SLA Profile Instance. N/A when no session is active.
Gx-diam-session-id	The active Diameter Gx session ID for this subscriber host or session. N/A when no session is active.

## 7.26 diameter-application-policy

### diameter-application-policy

#### Syntax

diameter-application-policy *[name]*

#### Context

[\[Tree\]](#) (show>subscr-mgmt diameter-application-policy)

#### Full Context

show subscriber-mgmt diameter-application-policy

#### Description

This command displays Diameter application policy information.

#### Parameters

*name*

Specifies the application policy, up to 32 characters, for which orphaned Gx sessions are displayed.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management Diameter application policy information

### Output Example

```
# show subscriber-mgmt diameter-application-policy
=====
DIAMETER application policies
=====
Name                               Description
-----
diameter-gx-policy-1               Diameter Gx policy
diameter-gy-policy-1               Diameter Gy policy
diameter-nasreq-policy-1           Diameter NASREQ policy
-----
No. of policies: 3
=====

# show subscriber-mgmt diameter-application-policy "diameter-nasreq-policy-1"
=====
DIAMETER application policy "diameter-nasreq-policy-1"
=====
Description                         : Diameter NASREQ policy
Session failover                     : enabled
Failover handling                    : continue
Application                           : nasreq
Tx timer (s)                         : 10
Last management change                : 02/28/2015 14:53:49
-----
NASREQ
-----
Include AVP                          : nas-port-id
                                       nas-port-type
NAS-Port-Id prefix type               : none
NAS-Port-Id suffix type               : user-string
NAS-Port-Id suffix                    : @bng1
NAS-Port-Type type                    : standard

User name format                      : mac
User name operation                   : no-operation
MAC address format                    : aa:
Last management change                : 02/28/2015 14:53:49
=====
Interfaces using diameter-auth-policy "diameter-nasreq-policy-1"
-----
Interface-name                       Service-id Type
-----
group-int-1-1                        1000      IES
-----
No. of interfaces: 1
-----
VPLS SAP's with diameter-auth-policy "diameter-nasreq-policy-1"
-----
Service    SAP
-----
10         1/1/4:*. *
-----
No. of SAP's: 1
```



```

-----
*A:Dut-C# show subscriber-mgmt diameter-application-policy "diamappol_gx"
=====
DIAMETER application policy "diamappol_gx"
=====
Description                : (Not Specified)
Session failover           : enabled
Failover handling          : retry-and-terminate
Peer policy                 : diampeerpol_gx
Application                 : gx
Tx timer (s)               : 10
Last management change     : 05/08/2015 05:55:59
-----
Gx
-----
Include AVP                 : an-gw-address
Calling-Station-Id type    : mac
NAS-Port bits spec         : 0
NAS-Port-Id prefix type   : user-string
NAS-Port-Id prefix        : Testing
NAS-Port-Id suffix type   : circuit-id
NAS-Port-Type value       : 0
User-Equipment-Info       : mac

Subscription-Id-Data origin : subscriber-id
Subscription-Id-Data type  : e164
MAC address format         : aa:
Report IP address event    : enabled
CCR-t replay interval      : 60
Last management change     : 05/08/2015 06:54:27
    
```

**Table 109: Diameter Application Policy Field Descriptions** describes diameter application policy output fields.

*Table 109: Diameter Application Policy Field Descriptions*

Field	Description
Description	The user provided description of this policy
Session failover	Failover is enabled or disabled
Failover Handling	Handling is retry-and-terminate or terminate
Peer policy	The diameter application peer policy name
Application	The policy's application, gx, gy, or nasreq
Tx timer (s)	The maximum wait time (seconds) while a client is pending
Last management change	The time of the most recent management-initiated change to this policy
Include AVP	The attribute-value-pairs for Gx messages

Field	Description
Calling-Station-Id type	The string that is put in the RADIUS Calling-Station-Id attribute if included in RADIUS authentication request messages
NAS-Port bits spec	The number that is put in the RADIUS NAS-Port attribute if included in RADIUS authentication request messages
NAS-Port-Id prefix type	The type of prefix that is added to the NAS-Port-Id attribute if included in RADIUS accounting-request messages
NAS-Port-Id prefix	The user configurable string that is added as the prefix to the NAS-Port attribute if included in RADIUS accounting-request messages
NAS-Port-Id suffix type	The user configurable string that is added as the suffix to the NAS-Port attribute if included in RADIUS accounting-request messages
NAS-Port-Type value	The value that is put in the RADIUS NAS-Port-Type attribute if included in RADIUS accounting-request messages
User-Equipment-Info	The user equipment info, eui64, imeisv, mac, or modified-eui64

## diameter-application-policy

### Syntax

**diameter-application-policy** *name* **statistics**

### Context

[\[Tree\]](#) (clear>subscr-mgmt diameter-application-policy)

### Full Context

clear subscriber-mgmt diameter-application-policy

### Description

This command clears Diameter application policy data.

### Parameters

***name***

Specifies the Diameter application policy name, up to 32 characters.

***statistics***

Clears Diameter application policy statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 7.27 diameter-node

### diameter-node

#### Syntax

**diameter-node** *origin-host-string* **peer** *dest-host-string*

**diameter-node** *origin-host-string* **peer** *dest-host-string* **statistics**

**diameter-node** *origin-host-string* **peers**

**diameter-node** *origin-host-string* **routing-table**

#### Context

[\[Tree\]](#) (show>aaa diameter-node)

#### Full Context

show aaa diameter-node

#### Description

This command displays information about a Diameter node.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following outputs are examples of Diameter node information.

#### Output Example

```
show aaa diameter node "node1.myrealm.com" routing-table
=====
Diameter Routing Table (Node: node1.myrealm.com)
=====
Realm Name                Appl      Pref:Index  Server-Identifier
-----
subrealm.telenet.be      Gx        30:1       node1.subrealm.telenet.be
telenet.be                Gx         60       node2.subrealm.telenet.be
telenet.be                relay      50       node3.subrealm.telenet.be
-----
No. of Routes: 5
=====
```

[Table 110: Diameter Node Routing Table Field Descriptions](#) describes routing entries in the Diameter realm-based routing table fields.

Table 110: Diameter Node Routing Table Field Descriptions

Field	Description
Realm Name	The destination realm name
Appl	The application for which this route will be used. Supported applications: <ul style="list-style-type: none"> <li>• NASREQ</li> <li>• Gx</li> <li>• Gy</li> <li>• Relay (encompass all applications)</li> </ul>
Pref:Index	The preference and index of the peer. Peers for the same realm are selected in order of preference. Peers with the lowest preference are preferred. If multiple peers have the same preference for the same realm, the peer with a lowest index is selected. Preference and index are user-configured parameters.
Server-Identifier	The next hop peer name

```
show aaa diameter node "node1.myrealm.com" peer "relay.telenet.be"
```

```
=====
Diameter Node : node1.myrealm.com
=====
Index           : 1
Remote Host Identity : relay.telenet.be
Remote Realm     : telenet.be
Remote IP address : 13.0.1.5
Remote Port:    3868
Remote Origin-State-Id : 1522062441
Local Host Identity : bng1.bng.nokia.com
Local Realm       : bng.nokia.com
Local IP address  : 13.0.1.4
Local port:      3456
Peer Admin State  : Up
Peer Active       : Yes
Peer Status       : I-Open
Active Applications : nasreq gx
Last Disconnect Cause : rebooting
Preference        : 4
Connection Timer (Tc) : 10
Watchdog Timer (Tw) : 237
...
Last Mgmt Change   : 03/23/2018 11:42:43
```

Table 111: Diameter Node Peer Field Descriptions describes Diameter node peer fields.

Table 111: Diameter Node Peer Field Descriptions

Field	Description
Diameter Node	The Diameter node under which this peer is active
Index	The Peer index is a peer configuration parameter
Remote Host Identity	The peer identity
Remote Realm	The realm to which the peer belongs
Remote IP address	The IP address of the peer
Remote Port	The port on the peer used for Diameter communication
Remote Origin-State-Id	The Origin-State-Id of the peer
Local Host Identity	The local identity
Local Realm	The local realm name
Local IP address	The local IP address
Local Port	The local port used for Diameter communication
Peer Admin State	The administrative state of the configured peer
Peer Active	Indicates whether the connection towards the peer is active
Peer Status	The operational status of the configured peer
Active Applications	The applications used over this peer
Last Disconnect Cause	The last disconnect cause
Preference	The configured preference of the peer
Connection Timer (Tc)	The timer used to initiate connections towards the peer. In case that the connection is not successfully established, a new attempt is periodically tried (every Tc interval)
Watchdog Timer (Tw)	The watchdog timer value that detects the failed connection towards the peer
Last Mgmt Change	The date and time of the last management change

```
show aaa diameter node "node1.myrealm.com" peer-table
=====
Diameter Peer Table (Node: node1.myrealm.com)
=====
Host Identity                StatusT      Susp
-----
relay.telenet.be
```

```

relay.proximus.be          I-Open      No
relay.proximus.be          I-Open      No
                           Closed        No
-----
No. of Active Peers: 2
    
```

[Table 112: Diameter Node Peer Table Field Descriptions](#) describes Diameter node peer table fields.

*Table 112: Diameter Node Peer Table Field Descriptions*

Field	Description
Node	The Diameter node name
Host Identity	The peer identity
StatusT	The status of the peer
Susp	The suspension state of the peer (based on watchdogs)
Server-Identifier	The next hop peer name

```

show aaa diameter-node "gyrouter.workstation.be" peer "gyserver-1.workstation.be" statistics
=====
Peer "gyserver-1.workstation.be"
=====
Message                               Sent          Received      Capabilities-
-----
Exchange-Request                      2             0
Capabilities-Exchange-Answer          0             2
Disconnect-Peer-Request                0             0
Disconnect-Peer-Answer                 0             0
Device-Watchdog-Request                188           0
Device-Watchdog-Answer                 0            188
Application message request            2367          0
Application message answer              0            2366
Last cleared time: N/A
=====
    
```

```

show aaa diameter-node "sr" routing-table
=====
Routes
=====
Realm-Name      Application  Pref. Entry  Server-Identifier
-----
realm-2         (relay)     5    dynamic node-b
realm-3         gx          10    static  node-b
realm-4         gy          20    static  node-b
realm-2         (relay)     5    dynamic node-c
realm-3         gx          20    static  node-c
realm-4
    
```

```

        gy          10      static node-c
-----
No. of routes: 6
=====
A:Dut-C#
    
```

**Table 113: Diameter Node SR Routing Table Field Descriptions** describes the Diameter node SR table fields.

*Table 113: Diameter Node SR Routing Table Field Descriptions*

Field	Description
Realm Name	The destination realm name
Application	The application for which this route will be used. Supported applications: <ul style="list-style-type: none"> <li>• NASREQ</li> <li>• Gx</li> <li>• Gy</li> <li>• Relay (all applications)</li> </ul>
Pref	The preference and index of the peer. Peers for the same realm are selected in order of preference. Peers with higher preference are preferred. If multiple peers have the same preference for the same realm, the peer with a lowest index is selected. Preference and index are user-configured parameters.
Entry	Dynamic or static diameter route
Server-Identifier	The next hop peer name

## diameter-node

### Syntax

**diameter-node** *origin-host-string* **peer** *dest-host-string* **statistics**

### Context

**[Tree]** (clear>aaa diameter-node)

### Full Context

clear aaa diameter-node

### Description

This command clears Diameter node data.

### Parameters

***origin-host-string***

Specifies the origin host name, up to 80 characters.

***dest-host-string***

Specifies the destination host name, up to 80 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 7.28 diameter-session

### diameter-session

**Syntax**

**diameter-session**

**Context**

[\[Tree\]](#) (show>subscr-mgmt diameter-session)

**Full Context**

show subscriber-mgmt diameter-session

**Description**

Commands in this context display diameter session information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### diameter-session

**Syntax**

**diameter-session**

**Context**

[\[Tree\]](#) (clear>subscr-mgmt diameter-session)

**Full Context**

clear subscriber-mgmt diameter-session

**Description**

This command clears diameter session data.



## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 7.29 direct-export

### direct-export

#### Syntax

**direct-export**

#### Context

[\[Tree\]](#) (show>app-assure>group>cflowd direct-export)

#### Full Context

show application-assurance group cflowd direct-export

#### Description

Commands in this context display cflowd direct-export output.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 7.30 discovery

### discovery

#### Syntax

**discovery** [{peer *[ip-address]*} | {interface *[ ip-int-name]*}] [state *state*] [detail] [ adjacency-type *type*]

**discovery** [state *state*] [detail | summary] [adjacency-type *type*] [session *ip-addr*[*label-space*]]

**discovery** [state *state*] [detail | summary] [adjacency-type *type*] [*family*]

**discovery interface** [*ip-int-name*] [state *state*] [detail | summary] [session *ip-addr*[*label-space*]]

**discovery peer** [*ip-address*] [state *state*] [ detail | summary] [session *ip-addr* [*label-space*]]

#### Context

[\[Tree\]](#) (show>router>ldp discovery)

#### Full Context

show router ldp discovery

## Description

This command displays the status of the interfaces participating in LDP discovery.

## Parameters

### ***peer ip-address***

Specifies to display the IP address of the peer.

### ***interface ip-int-name***

The name of an existing interface. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### ***state state***

Specifies to display the current operational state of the adjacency.

**Values** established, trying, down

### ***detail***

Specifies to display detailed information.

### ***family***

Displays either IPv4 or IPv6 LDP session information.

### ***adjacency-type type***

Specifies to display the adjacency type.

**Values** link, targeted

## Platforms

All

## Output

LDP Discovery Output

[Table 114: LDP Discovery Output Fields](#) describes the LDP discovery output fields.

*Table 114: LDP Discovery Output Fields*

Label	Description
Interface Name	The name of the interface.
Local Addr	The IP address of the originating (local) router.
Peer Addr	The IP address of the peer.
AdjType	The adjacency type between the LDP peer and LDP session is targeted.
State	Established — The adjacency is established. Trying — The adjacency is not yet established.

Label	Description
No. of Hello Adjacencies	The total number of hello adjacencies discovered.
Up Time	The amount of time the adjacency has been enabled.
Hold Time Remaining	The time left before a neighbor is declared to be down.

### Output Example

```
*A:Dut-A# show router ldp discovery
=====
LDP IPv4 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
N/A                 192.0.2.1:0    Estab
targ                198.51.100.1:0
N/A                 192.0.2.1:0    Estab
targ                203.0.113.1:0
to_SR2              192.0.2.1:0    Estab
link               198.51.100.1:0
to_SR2_2            192.0.2.1:0    Estab
link               198.51.100.1:0
to_SR3              192.0.2.1:0    Estab
link               203.0.113.1:0

No. of IPv4 Hello Adjacencies: 5
=====
LDP IPv6 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
to_SR2              10.0.50.1:0    Estab
link               10.0.50.2:0
to_SR2_2            fe80::4624:1ff:fe01:6
link               ff02::2
-----

No. of IPv6 Hello Adjacencies: 2
=====
*A:Dut-A# show router ldp discovery detail
=====
LDP IPv4 Hello Adjacencies
=====
Peer 198.51.100.1
-----
Local Address      : 192.0.2.1:0
Peer Address       : 198.51.100.1:0
Adjacency Type     : targeted          State           : Established
Up Time            : 0d 00:22:58      Hold Time Remaining : 38
```

```

Hello Mesg Recv      : 104           Hello Mesg Sent      : 104
Local IP Address     : 192.0.2.1
Peer IP Address      : 198.51.100.1
Local Hello Timeout: 45           Remote Hello Timeout: 45
Local Cfg Seq No    : 2476449752   Remote Cfg Seq No    : 2494880985
Lcl IPv4 P2MP Capbl: Disabled      Rem IPv4 P2MP Capbl : Enabled
Lcl IPv6 P2MP Capbl: Disabled      Rem IPv6 P2MP Capbl : Enabled
Lcl IPv4 Pfx Capbl : Enabled       Rem IPv4 Pfx Capbl  : Enabled
Lcl IPv6 Pfx Capbl : Enabled       Rem IPv6 Pfx Capbl  : Enabled
-----
Peer 203.0.113.1
-----
Local Address        : 192.0.2.1:0
Peer Address         : 198.51.100.1:0
Adjacency Type      : targeted      State                 : Established
Up Time             : 0d 00:27:24   Hold Time Remaining  : 36
Hello Mesg Recv     : 124           Hello Mesg Sent      : 124
Local IP Address     : 192.0.2.1
Peer IP Address      : 203.0.113.1
Local Hello Timeout: 45           Remote Hello Timeout: 45
Local Cfg Seq No    : 1472397992   Remote Cfg Seq No    : 2705515863
Lcl IPv4 P2MP Capbl: Enabled       Rem IPv4 P2MP Capbl : Enabled (R)
Lcl IPv6 P2MP Capbl: Enabled       Rem IPv6 P2MP Capbl : Enabled (R)
Lcl IPv4 Pfx Capbl : Enabled       Rem IPv4 Pfx Capbl  : Enabled (R)
Lcl IPv6 Pfx Capbl : Enabled       Rem IPv6 Pfx Capbl  : Enabled (R)
-----
Interface "to_SR2"
-----
Local Address        : 192.0.2.1:0
Peer Address         : 198.51.100.1:0
Adjacency Type      : link          State                 : Established
Up Time             : 0d 00:23:11   Hold Time Remaining  : 13
Hello Mesg Recv     : 366           Hello Mesg Sent      : 365
Local IP Address     : 10.0.60.1
Peer IP Address      : 10.0.60.2
Local Hello Timeout: 15           Remote Hello Timeout: 15
Local Cfg Seq No    : 416151817    Remote Cfg Seq No    : 2265512807
Lcl IPv4 P2MP Capbl: Enabled       Rem IPv4 P2MP Capbl : Enabled (R)
Lcl IPv6 P2MP Capbl: Enabled       Rem IPv6 P2MP Capbl : Enabled (R)
Lcl IPv4 Pfx Capbl : Enabled       Rem IPv4 Pfx Capbl  : Enabled (R)
Lcl IPv6 Pfx Capbl : Enabled       Rem IPv6 Pfx Capbl  : Enabled (R)
-----
Interface "to_SR2_2"
-----
Local Address        : 192.0.2.1:0
Peer Address         : 198.51.100.1:0
Adjacency Type      : link          State                 : Established
Up Time             : 0d 00:23:12   Hold Time Remaining  : 13
Hello Mesg Recv     : 368           Hello Mesg Sent      : 367
Local IP Address     : 60.60.61.1
Peer IP Address      : 60.60.61.2
Local Hello Timeout: 15           Remote Hello Timeout: 15
Local Cfg Seq No    : 1472397992   Remote Cfg Seq No    : 2705515863
Lcl IPv4 P2MP Capbl: Enabled       Rem IPv4 P2MP Capbl : Enabled (R)
Lcl IPv6 P2MP Capbl: Enabled       Rem IPv6 P2MP Capbl : Enabled (R)
Lcl IPv4 Pfx Capbl : Enabled       Rem IPv4 Pfx Capbl  : Enabled (R)
Lcl IPv6 Pfx Capbl : Enabled       Rem IPv6 Pfx Capbl  : Enabled (R)
-----
Interface "to_SR3"
-----
Local Address        : 192.0.2.1:0
Peer Address         : 203.0.113.1:0
Adjacency Type      : link          State                 : Established
Up Time             : 0d 00:27:36   Hold Time Remaining  : 12
    
```

```

Hello Mesg Recv      : 438                Hello Mesg Sent      : 437
Local IP Address    : 10.0.90.1
Peer IP Address     : 10.0.90.2
Local Hello Timeout: 15                    Remote Hello Timeout: 15
Local Cfg Seq No   : 3784603428           Remote Cfg Seq No   : 1928455485
Lcl IPv4 P2MP Capbl: Enabled              Rem IPv4 P2MP Capbl : Enabled (R)
Lcl IPv6 P2MP Capbl: Enabled              Rem IPv6 P2MP Capbl : Enabled (R)
Lcl IPv4 Pfx Capbl : Enabled              Rem IPv4 Pfx Capbl  : Enabled (R)
Lcl IPv6 Pfx Capbl : Enabled              Rem IPv6 Pfx Capbl  : Enabled (R)
=====
No. of IPv4 Hello Adjacencies: 5
=====
LDP IPv6 Hello Adjacencies
=====
-----
Interface "to_SR2"
-----
Local Address       : 10.0.50.1:0
Peer Address        : 10.0.50.2:0
Adjacency Type     : link                  State                : Established
Up Time             : 0d 00:19:22          Hold Time Remaining  : 12
Hello Mesg Recv    : 306                  Hello Mesg Sent      : 306
Local IP Address    : fe80::4624:1ff:fe01:1
Peer IP Address     : fe80::4651:1ff:fe01:1
Local Hello Timeout: 15                    Remote Hello Timeout: 15
Local Cfg Seq No   : 3349779675           Remote Cfg Seq No   : 4177487405
Lcl IPv4 P2MP Capbl: Enabled              Rem IPv4 P2MP Capbl : Enabled (R)
Lcl IPv6 P2MP Capbl: Enabled              Rem IPv6 P2MP Capbl : Enabled (R)
Lcl IPv4 Pfx Capbl : Enabled              Rem IPv4 Pfx Capbl  : Enabled (R)
Lcl IPv6 Pfx Capbl : Enabled              Rem IPv6 Pfx Capbl  : Enabled (R)
-----
Interface "to_SR2_2"
-----
Local Address       : fe80::4624:1ff:fe*
Peer Address        : ff02::2
Adjacency Type     : link                  State                : Trying
=====
No. of IPv6 Hello Adjacencies: 2
=====
* indicates that the corresponding row element may have been truncated
*A:Dut-A#

*A:Dut-A# show router ldp discovery peer detail
=====
LDP IPv4 Hello Adjacencies
=====
-----
Peer 10.20.1.6
-----
Local Address       : 10.20.1.1:0
Peer Address        : 10.20.1.6:0
Adjacency Type     : targeted              State                : Established
Up Time             : 0d 00:02:48          Hold Time Remaining  : 15
Hello Mesg Recv    : 46                  Hello Mesg Sent      : 45
Local IP Address    : 10.20.1.1
Peer IP Address     : 10.20.1.6
Local Hello Timeout: 15                    Remote Hello Timeout: 15
Local Cfg Seq No   : 3886383873           Remote Cfg Seq No   : 3487172342
Lcl IPv4 P2MP Capbl: Disabled              Rem IPv4 P2MP Capbl : Enabled
Lcl IPv6 P2MP Capbl: Disabled              Rem IPv6 P2MP Capbl : Enabled
Lcl IPv4 Pfx Capbl : Enabled              Rem IPv4 Pfx Capbl  : Enabled
Lcl IPv6 Pfx Capbl : Enabled              Rem IPv6 Pfx Capbl  : Enabled
=====

```

```

No. of IPv4 Hello Adjacencies: 1
=====
LDP IPv6 Hello Adjacencies
=====
-----
Peer 3ffe::a14:106
-----
Local Address      : 3ffe::a14:101[0]
Peer Address       : 3ffe::a14:106[0]
Adjacency Type    : targeted          State           : Established
Up Time           : 0d 00:01:03         Hold Time Remaining : 34
Hello Mesg Recv   : 6                  Hello Mesg Sent    : 5
Local IP Address   : 3ffe::a14:101
Peer IP Address    : 3ffe::a14:106
Local Hello Timeout: 45                Remote Hello Timeout: 45
Local Cfg Seq No  : 4281565287         Remote Cfg Seq No   : 1836745726
Lcl IPv4 P2MP Capbl: Disabled          Rem IPv4 P2MP Capbl : Enabled
Lcl IPv6 P2MP Capbl: Disabled          Rem IPv6 P2MP Capbl : Enabled
Lcl IPv4 Pfx Capbl : Enabled           Rem IPv4 Pfx Capbl  : Enabled
Lcl IPv6 Pfx Capbl : Enabled           Rem IPv6 Pfx Capbl  : Enabled
=====
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
-----
*A:Dut-A# show router ldp discovery adjacency-type targeted
=====
LDP IPv4 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType             Peer Addr
-----
N/A                 10.20.1.1:0    Estab
targ                10.20.1.6:0
-----
No. of IPv4 Hello Adjacencies: 1
=====
LDP IPv6 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType             Peer Addr
-----
N/A                 3ffe::a14:101[0] Estab
targ                3ffe::a14:106[0]
-----
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery adjacency-type targeted ipv6 state established
=====
LDP IPv6 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType             Peer Addr
-----
N/A                 3ffe::a14:101[0] Estab
targ                3ffe::a14:106[0]
-----
No. of IPv6 Hello Adjacencies: 1
    
```

```
=====
*A:Dut-A# show router ldp discovery peer
=====
LDP IPv4 Hello Adjacencies
=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
N/A                    10.20.1.1:0        Estab
targ                   10.20.1.6:0
-----
No. of IPv4 Hello Adjacencies: 1
=====
LDP IPv6 Hello Adjacencies
=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
N/A                    3ffe::a14:101[0]   Estab
targ                   3ffe::a14:106[0]
-----
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery peer 10.20.1.6
=====
LDP IPv4 Hello Adjacencies
=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
N/A                    10.20.1.1:0        Estab
targ                   10.20.1.6:0
-----
No. of IPv4 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery peer 10.20.1.6 detail
=====
LDP IPv4 Hello Adjacencies
=====
Peer 10.20.1.6
-----
Local Address      : 10.20.1.1:0
Peer Address       : 10.20.1.6:0
Adjacency Type    : targeted          State           : Established
Up Time           : 0d 00:02:25      Hold Time Remaining : 11
Hello Mesg Recv   : 39                Hello Mesg Sent    : 39
Local IP Address   : 10.20.1.1
Peer IP Address    : 10.20.1.6
Local Hello Timeout: 15                Remote Hello Timeout: 15
=====
```

```

Local Cfg Seq No   : 3886383873      Remote Cfg Seq No   : 3487172342
Lcl IPv4 P2MP Capbl: Disabled        Rem IPv4 P2MP Capbl: Enabled
Lcl IPv6 P2MP Capbl: Disabled        Rem IPv6 P2MP Capbl: Enabled
Lcl IPv4 Pfx Capbl : Enabled         Rem IPv4 Pfx Capbl : Enabled
Lcl IPv6 Pfx Capbl : Enabled         Rem IPv6 Pfx Capbl : Enabled
=====
No. of IPv4 Hello Adjacencies: 1
=====
*A:Dut-A#

*A:Dut-A# show router ldp discovery peer detail
=====
LDP IPv4 Hello Adjacencies
=====
-----
Peer 10.20.1.6
-----
Local Address      : 10.20.1.1:0
Peer Address       : 10.20.1.6:0
Adjacency Type    : targeted          State                : Established
Up Time           : 0d 00:02:48      Hold Time Remaining : 15
Hello Mesg Recv   : 46               Hello Mesg Sent     : 45
Local IP Address   : 10.20.1.1
Peer IP Address    : 10.20.1.6
Local Hello Timeout: 15               Remote Hello Timeout: 15
Local Cfg Seq No   : 3886383873      Remote Cfg Seq No   : 3487172342
Lcl IPv4 P2MP Capbl: Disabled        Rem IPv4 P2MP Capbl: Enabled
Lcl IPv6 P2MP Capbl: Disabled        Rem IPv6 P2MP Capbl: Enabled
Lcl IPv4 Pfx Capbl : Enabled         Rem IPv4 Pfx Capbl : Enabled
Lcl IPv6 Pfx Capbl : Enabled         Rem IPv6 Pfx Capbl : Enabled
=====
No. of IPv4 Hello Adjacencies: 1
=====
LDP IPv6 Hello Adjacencies
=====
-----
Peer 3ffe::a14:106
-----
Local Address      : 3ffe::a14:101[0]
Peer Address       : 3ffe::a14:106[0]
Adjacency Type    : targeted          State                : Established
Up Time           : 0d 00:01:03      Hold Time Remaining : 34
Hello Mesg Recv   : 6               Hello Mesg Sent     : 5
Local IP Address   : 3ffe::a14:101
Peer IP Address    : 3ffe::a14:106
Local Hello Timeout: 45               Remote Hello Timeout: 45
Local Cfg Seq No   : 4281565287      Remote Cfg Seq No   : 1836745726
Lcl IPv4 P2MP Capbl: Disabled        Rem IPv4 P2MP Capbl: Enabled
Lcl IPv6 P2MP Capbl: Disabled        Rem IPv6 P2MP Capbl: Enabled
Lcl IPv4 Pfx Capbl : Enabled         Rem IPv4 Pfx Capbl : Enabled
Lcl IPv6 Pfx Capbl : Enabled         Rem IPv6 Pfx Capbl : Enabled
=====
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#

*A:Dut-A# show router ldp discovery adjacency-type targeted
=====
LDP IPv4 Hello Adjacencies
=====
-----
Interface Name      Local Addr      State
AdjType            Peer Addr
-----

```



```

N/A          10.20.1.1:0          Estab
targ        10.20.1.6:0
-----
No. of IPv4 Hello Adjacencies: 1
=====
LDP IPv6 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
N/A                3ffe::a14:101[0]  Estab
targ                3ffe::a14:106[0]
-----
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery adjacency-type targeted ipv6 state established
=====
LDP IPv6 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
N/A                3ffe::a14:101[0]  Estab
targ                3ffe::a14:106[0]
-----
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery session 10.20.1.6
=====
LDP IPv4 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
N/A                10.20.1.1:0      Estab
targ                10.20.1.6:0
-----
No. of IPv4 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery interface "ip-10.10.1.1"
=====
LDP IPv4 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
ip-10.10.1.1      10.20.1.1:0      Estab
link                10.20.1.2:0
-----
No. of IPv4 Hello Adjacencies: 1
=====
LDP IPv6 Hello Adjacencies
    
```

```

=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
ip-10.10.1.1          3ffe::a14:101[0]   Estab
link                   3ffe::a14:102[0]
-----
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery interface "ip-10.10.1.1" detail
=====
LDP IPv4 Hello Adjacencies
=====
Interface "ip-10.10.1.1"
-----
Local Address      : 10.20.1.1:0
Peer Address       : 10.20.1.2:0
Adjacency Type     : link                State           : Established
Up Time           : 0d 00:26:52          Hold Time Remaining : 14
Hello Mesg Recv   : 426                Hello Mesg Sent    : 423
Local IP Address   : 10.10.1.1
Peer IP Address    : 10.10.1.2
Local Hello Timeout: 15                Remote Hello Timeout: 15
Local Cfg Seq No   : 3499624168          Remote Cfg Seq No   : 1622338078
Lcl IPv4 P2MP Capbl: Enabled            Rem IPv4 P2MP Capbl : Enabled
Lcl IPv6 P2MP Capbl: Enabled            Rem IPv6 P2MP Capbl : Enabled
Lcl IPv4 Pfx Capbl : Enabled            Rem IPv4 Pfx Capbl  : Enabled
Lcl IPv6 Pfx Capbl : Enabled            Rem IPv6 Pfx Capbl  : Enabled
=====
No. of IPv4 Hello Adjacencies: 1
=====
LDP IPv6 Hello Adjacencies
=====
Interface "ip-10.10.1.1"
-----
Local Address      : 3ffe::a14:101[0]
Peer Address       : 3ffe::a14:102[0]
Adjacency Type     : link                State           : Established
Up Time           : 0d 00:26:32          Hold Time Remaining : 12
Hello Mesg Recv   : 421                Hello Mesg Sent    : 418
Local IP Address   : fe80::11
Peer IP Address    : fe80::12
Local Hello Timeout: 15                Remote Hello Timeout: 15
Local Cfg Seq No   : 1658693689          Remote Cfg Seq No   : 4291225243
Lcl IPv4 P2MP Capbl: Enabled            Rem IPv4 P2MP Capbl : Enabled
Lcl IPv6 P2MP Capbl: Enabled            Rem IPv6 P2MP Capbl : Enabled
Lcl IPv4 Pfx Capbl : Enabled            Rem IPv4 Pfx Capbl  : Enabled
Lcl IPv6 Pfx Capbl : Enabled            Rem IPv6 Pfx Capbl  : Enabled
=====
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery interface "ip-10.10.1.1" summary
  No. of IPv4 Hello Adjacencies: 1
  No. of IPv6 Hello Adjacencies: 1
*A:Dut-A#
*A:Dut-A# show router ldp discovery interface "ip-10.10.2.1" state established
=====
    
```

```

LDP IPv4 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
ip-10.10.2.1      10.20.1.1:0    Estab
link              10.20.1.3:0
-----
No. of IPv4 Hello Adjacencies: 1
=====

LDP IPv6 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
ip-10.10.2.1      3ffe::a14:101[0] Estab
link              3ffe::a14:103[0]
-----
No. of IPv6 Hello Adjacencies: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery state established
=====

LDP IPv4 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
N/A               10.20.1.1:0    Estab
targ              10.20.1.6:0
-----
ip-10.10.1.1      10.20.1.1:0    Estab
link              10.20.1.2:0
-----
ip-10.10.2.1      10.20.1.1:0    Estab
link              10.20.1.3:0
-----
No. of IPv4 Hello Adjacencies: 3
=====

LDP IPv6 Hello Adjacencies
=====
Interface Name      Local Addr      State
AdjType            Peer Addr
-----
N/A               3ffe::a14:101[0] Estab
targ              3ffe::a14:106[0]
-----
ip-10.10.1.1      3ffe::a14:101[0] Estab
link              3ffe::a14:102[0]
-----
ip-10.10.2.1      3ffe::a14:101[0] Estab
link              3ffe::a14:103[0]
-----
No. of IPv6 Hello Adjacencies: 3
=====
*A:Dut-A#
*A:Dut-A# show router ldp discovery adjacency-type link
    
```

```

=====
LDP IPv4 Hello Adjacencies
=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
ip-10.10.1.1          10.20.1.1:0       Estab
link                   10.20.1.2:0
ip-10.10.2.1          10.20.1.1:0       Estab
link                   10.20.1.3:0
-----
No. of IPv4 Hello Adjacencies: 2
=====

LDP IPv6 Hello Adjacencies
=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
ip-10.10.1.1          3ffe::a14:101[0]  Estab
link                   3ffe::a14:102[0]
ip-10.10.2.1          3ffe::a14:101[0]  Estab
link                   3ffe::a14:103[0]
-----
No. of IPv6 Hello Adjacencies: 2
=====
*A:Dut-A#

*A:Dut-A# show router ldp discovery adjacency-type link ipv6
=====
LDP IPv6 Hello Adjacencies
=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
ip-10.10.1.1          3ffe::a14:101[0]  Estab
link                   3ffe::a14:102[0]
ip-10.10.2.1          3ffe::a14:101[0]  Estab
link                   3ffe::a14:103[0]
-----
No. of IPv6 Hello Adjacencies: 2
=====
*A:Dut-A#

*A:Dut-A# show router ldp discovery session 10.20.1.2
=====
LDP IPv4 Hello Adjacencies
=====
Interface Name          Local Addr          State
AdjType                Peer Addr
-----
ip-10.10.1.1          10.20.1.1:0       Estab
link                   10.20.1.2:0
-----
No. of IPv4 Hello Adjacencies: 1
=====
*A:Dut-A#
    
```

```
*A:Dut-A# show router ldp discovery session 10.20.1.2 summary
No. of IPv4 Hello Adjacencies: 1
*A:Dut-A#
```

## 7.31 dist-cpu-protection

### dist-cpu-protection

#### Syntax

**cpu-protection**

#### Context

[\[Tree\]](#) (show>system>security dist-cpu-protection)

#### Full Context

show system security dist-cpu-protection

#### Description

Commands in this context display Distributed CPU Protection information.

#### Platforms

All

### dist-cpu-protection

#### Syntax

**dist-cpu-protection**

#### Context

[\[Tree\]](#) (tools>perform>security dist-cpu-protection)

[\[Tree\]](#) (tools>dump>security dist-cpu-protection)

#### Full Context

tools perform security dist-cpu-protection

tools dump security dist-cpu-protection

#### Description

This command displays to release Distributed CPU Protection parameters and status at the per card and forwarding plane level.

## Platforms

All

## dist-cpu-protection

### Syntax

**dist-cpu-protection** [**detail**]

### Context

[\[Tree\]](#) (show>port dist-cpu-protection)

### Full Context

show port dist-cpu-protection

### Description

This command displays distributed CPU protection information.

### Parameters

**detail**

Displays detailed information.

## Platforms

All

## 7.32 diversity

## diversity

### Syntax

**diversity** *diversity-assoc-name*

### Context

[\[Tree\]](#) (show>router>pcep>pcc>pce-assoc diversity)

### Full Context

show router pcep pcc pce-associations diversity

### Description

This command displays the diversity association information.

If a diversity association name is not specified, the information for all configured diversity associations is displayed.

### Parameters

***diversity-assoc-name***

Specifies the diversity association name.

### Platforms

All

### Output

The following output is an example of diversity association information, and [Table 115: Show Diversity Association Descriptions](#) describes the output fields.

#### Output Example

```
*A:Dut-C>config>router>mpls>lsp# show router pcep pcc pce-associations diversity "test_div"
=====
PCEP PCC Diversity Associations Info
=====
Association Name      : test_div
Association ID        : 20
Diversity Type       : link
Disjoint Reference   : False
Association Source    : 192.168.213.59
Disjointness Type    : loose
=====
```

*Table 115: Show Diversity Association Descriptions*

Label	Description
Association Name	The diversity association name
Association ID	The diversity association ID
Association Source	The diversity source address of the diversity association. Both IPv4 and IPv6 addresses are supported.
Diversity Type	The diversity type of the diversity association
Disjointness Type	The disjointness type of the diversity association
Disjoint Reference	The P-flag value conveyed to the disjointness configuration TLV

## 7.33 dm

dm

### Syntax

**dm** [*interval seconds*] [*repeat repeatf*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>oam-pm>session dm)

### Full Context

monitor oam-pm session dm

### Description

This command monitors the MPLS Delay Measurement (DM) statistics for the specified test's raw measurement interval.

### Parameters

#### *seconds*

Specifies the time interval, in seconds.

**Values** 3 to 60

**Default** 10

#### *repeat*

Specifies the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

#### *absolute*

Specifies that the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

#### *rate*

Specifies that the rate-per-second is displayed.

**Default** delta

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS



## dm

### Syntax

dm

### Context

[\[Tree\]](#) (show>oam-pm>stats>session dm)

### Full Context

show oam-pm statistics session dm

### Description

This command selects the session's MPLS DM test for the statistical display.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 7.34 dmm

## dmm

### Syntax

dmm [*interval seconds*] [*repeat repeat*] [*absolute* | *rate*]

### Context

[\[Tree\]](#) (monitor>oam-pm>session dmm)

### Full Context

monitor oam-pm session dmm

### Description

This command monitors the Ethernet Delay Measurement Message (DMM) statistics for the specified test's raw measurement interval.

### Parameters

*seconds*

Specifies the time interval, in seconds.

**Values** 3 to 60

**Default** 10

***repeat***

Specifies the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

***absolute***

Specifies that the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

***rate***

Specifies that the rate-per-second is displayed.

**Default** delta

**Platforms**

All

## dmm

**Syntax**

dmm

**Context**

[\[Tree\]](#) (show>oam-pm>stats>session dmm)

**Full Context**

show oam-pm statistics session dmm

**Description**

This command selects the session's Ethernet DMM test for the statistical display.

**Platforms**

All

## 7.35 dns

dns

### Syntax

dns

### Context

[\[Tree\]](#) (show>router dns)

### Full Context

show router dns

### Description

This command displays DNS information.

### Platforms

All

### Output

The following output is an example of DNS settings information.

### Output Example

```
*A:Dut-C# show router dns
=====
Redirect VPRN           : Service: 300
Administrative state   : enabled
Default domain name    : (Not Specified)
Primary DNS             : 9.0.0.22
Secondary DNS          : 2009::16
Tertiary DNS           : (Not Specified)
IPv4 source address    : 5.1.45.3
IPv6 source address    : 2005::1:2d:3
Last management change : 01/13/2020 11:00:13
```

## 7.36 dns-ip-cache

dns-ip-cache

### Syntax

**dns-ip-cache** *cache-name* **isa** *mda-id*

**dns-ip-cache** *cache-name*

## Context

[\[Tree\]](#) (show>app-assure>group dns-ip-cache)

## Full Context

show application-assurance group dns-ip-cache

## Description

This command displays the application assurance DNS IP cache statistics and status information.

## Parameters

### *cache-name*

Specifies the DNS IP cache for a particular ISA-AA card, up to 32 characters.

### *mda-id*

Specifies the AA ISA.

**Values** slot 1 to 10, mda 1 to 2

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

[Table 116: Show DNS IP Cache Output Fields](#) describes the **show** command output fields.

*Table 116: Show DNS IP Cache Output Fields*

Label	Description
Admin Status	Indicates the administrative status of the DNS IP cache. [Up   Down]
Domain expressions	Indicates the number of DNS domain expressions configured.
Server addresses	Indicates the number of server-addresses configured
High-Watermark	Indicates the value, in percentage, of the configured high watermark.
Low-Watermark	Indicates the value, in percentage, of the configured low watermark.
Cache-size	Indicates the value of the configured maximum cache size.
Usage	Indicates the value, in percentage, of the total for the number of entries in the cache.
Alarm State	Indicates the status of the alarm related to the DNS IP cache high/low watermark utilization. The alarm is raised when the high watermark is crossed; it is cleared when it goes below the low watermark. [Clear   Raised]

Label	Description
Hit-Count	Indicates the number of times an IP address lookup in this cache was successful.
Total responses	Indicates the total number of DNS responses analyzed.
Domain name matched	Indicates the number of times a domain name defined in the DNS match criteria matched a DNS response.
Domain & server matched	Indicates the number of times both the domain name and server address defined in the DNS match criteria matched a DNS response.
Total entries added	Indicates the total number of IP entries added in the cache.
Total entries removed	Indicates the total number of IP entries removed from the cache after the entry expired.
Full count	Indicates the total number of IP entries in the cache.
Hit Count	Indicates the number of times an IP address lookup in this cache was successful. The IP address lookup is performed in app-filters and is successful if the server address DNS IP cache criteria is met.
Miss Count	Indicates the number of times an IP address lookup in this cache was unsuccessful. The IP address lookup is performed in app-filters and is unsuccessful if the server address DNS IP cache criteria is not met.

### Output Example

```
*A:7750# show application-assurance group 1 dns-ip-cache "Default DNS IP Cache"
=====
Application Assurance Group 1 dns-ip-cache "Default DNS IP Cache"
=====
Admin Status           : Up

Domain expressions    : 11 (out of 32)
Server addresses      : 0 (out of 64)
High watermark        : 40%
Low watermark         : 35%
Cache size            : 5000

-----
ISA                    Usage          (%)          Alarm          Hit Count
State
-----
1/2                    0             (0.00%)       clear          0
3/2                    133          (88.66%)       raised         18
=====

*A:7750# show application-assurance group 1 dns-ip-cache "Default DNS IP Cache" isa 3/1
=====
Application Assurance Group 1 dns-ip-cache "Default DNS IP Cache" ISA 3/1
=====
Admin Status           : Up
```

```
Domain expressions      : 11 (out of 32)
Server addresses       : 0 (out of 64)
High watermark         : 40%
Low watermark          : 35%
Cache size             : 5000

-----
ISA 3/1 DNS Stats
-----
DNS
  Total responses      : 5751
  Domain name matched : 106
  Domain & server matched : 106
Cache
  Total entries added  : 118
  Total entries removed : 0
  Usage                : 118 (2.36%) threshold alarm clear
  Full count           : 0

  Hit count            : 274
  Miss count           : 20379
=====
```

## dns-ip-cache

### Syntax

**dns-ip-cache** *dns-ip-cache-name* *url file-url*

**dns-ip-cache** *dns-ip-cache-name* *isa mda-id/esa-vm-id* [*url file-url*] [*new-ip-count*]

### Context

**[Tree]** (tools>dump>app-assure>group dns-ip-cache)

### Full Context

tools dump application-assurance group dns-ip-cache

### Description

This command displays the list of IP addresses stored in a DNS IP cache.

### Parameters

#### ***dns-ip-cache-name***

Specifies a DNS IP cache name, up to 32 characters.

#### ***url file-url***

Specifies the URL for the file to direct the search output to. The file may be local or remote.

#### **Values**

local-url   remote-url	local-url	[<cf-flash-id>/][<file-path>]
		200 chars max, including cf-flash-id

directory length 99 chars max each

remote-url {ftp| tftp}://[<login>:<pswd>@]  
 <remote-locn>/[<file-path>]

255 chars max

<file-path> 199 chars max

remote-locn { <hostname> | <ipv4-address> |  
 "[<ipv6-address>"] }[:<port>]

ipv4-address a.b.c.d

ipv6-address x:x:x:x:x:x:x[-interface]  
 x:x:x:x:x:d.d.d.d[-interface]  
 x - [0..FFFF]H  
 d - [0..255]D

interface - 32 chars max, for  
 link

local addresses

port [0..65535]

cf1-id cf1-A:| cf1-B:| cf2-A:|  
 cf2-B:| cf3-A:| cf3-B:

**isa mda-id/esa-vm-id**

Specifies the DNS IP cache for a particular ISA-AA card.

<b>Values</b>	slot/mda	slot: 1 to 10 mda: 1, 2
	esa-esa-id/vm-id	esa-id: 1 to 16 vm-id: 1 to 4

**new-ip-count**

Displays the number of new IP addresses added to the cache.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following are output examples for this command.

### Output Example

```
*A:7750# tools dump application-assurance group 1 dns-ip-cache "Default DNS IP Cache"
isa 3/2
=====
Application-Assurance dns-ip-cache "Default DNS IP Cache"
Current Time:         "01/21/2015 16:44:00" (UTC)
  group:              1
  isa:                3/2
  admin state:       no shutdown
  max-entries:       150
=====
ip-address            creationTime(UTC)    lastUpdated(sec)
numDNSResponses      lastMatchTime(UTC)  numTimesMatched
2001:db8:3d40:3::3fa8:3d59  "01/21/2015 16:42:49"  0  71  5
"01/21/2015 16:42:49" 0
2001:db8:3d40:3::3fa8:3d0b  "01/21/2015 16:42:49"  0  71  1
"01/21/2015 16:42:49" 0
2001:db7:3d40:3::3fa8:3d2b  "01/21/2015 16:42:49"  0  71  1
"01/21/2015 16:42:49" 0
192.168.74.203           "01/21/2015 16:42:36"  0  84  67
"01/21/2015 16:42:36" 0
192.168.124.91           "01/21/2015 16:42:36"  0  84  15
"01/21/2015 16:42:36" 0
192.168.124.97           "01/21/2015 16:42:36"  0  84  15
"01/21/2015 16:42:36" 0
192.168.86.136           "01/21/2015 16:42:36"  0  84  5
"01/21/2015 16:42:36" 0
192.168.74.176           "01/21/2015 16:42:36"  0  84  67
"01/21/2015 16:42:36" 0
192.168.86.99            "01/21/2015 16:42:36"  0  84  11
"01/21/2015 16:42:36" 0
```

### Output Example

```
>/tools dump application-assurance group 1 dns-ip-cache "Default DNS IP Cache" isa 5/2 new-ip-count
=====
Application-Assurance dns-ip-cache "Default DNS IP Cache"
Current Time:         "08/06/2020 15:16:50" (UTC)
  group:              1
  isa:                5/2
  admin state:       no shutdown
  num-domains:       2
=====
domain                hostname                new-ip-count
"Tango"               "*.tango.me$"          37
"Google"              "*.google.*"           6
=====
```

Table 117: Tools DNS IP Cache Output Fields

Label	Description
ip-address	Indicates the IP address stored in the DNS IP cache. The address is added into the cache if the DNS response meets the DNS IP cache match criteria (domain name and DNS server address).



Label	Description
creationTime	Indicates the time at which the entry was created. The entry is created by a DNS response meeting the DNS IP cache match criteria (domain name and DNS server address).
lastUpdated(UTC)	Indicates the time at which the entry was last updated, either from a new IP flow (fully classified) using the same IP address or a new DNS response meeting the DNS IP cache match criteria.
numDNSResponses	Indicates the number of DNS responses including this IP address meeting the DNS IP cache match criteria.
lastMatchTime(UTC)	Indicates the last time the IP address matched an app-filter with a server address DNS IP cache criteria.
numTimesMatched	Indicates the number of times the IP address matched an app-filter with a server address DNS IP cache.
domain	Indicates the domain as configured in dns-ip-cache.
hostname	Indicates the hostname as configured in dns-ip-cache.
new-ip-count	Indicates the number of new IP addresses added in the cache for the domain.

## 7.37 domain

### domain

#### Syntax

**domain** [*md-index* | *md-admin-name*] [ **association** {*ma-index* | *ma-admin-name* | **all-associations**}]  
 [detail]

#### Context

[\[Tree\]](#) (show>eth-cfm domain)

#### Full Context

show eth-cfm domain

#### Description

This command displays domain information.

## Parameters

### *md-index*

Specifies the index of the MD to which the MP is associated, or 0, if none.

**Values** 1 to 4294967295

### *md-admin-name*

Specifies the administrative name for the domain, up to 64 characters.

### *ma-index*

Specifies the index to which the MP is associated, or 0, if none.

**Values** 1 to 4294967295

### *ma-admin-name*

Specifies the administrative name for the association, up to 64 characters.

### **all-associations**

Keyword to display all associations to the MD.

### **detail**

Keyword to isplay detailed domain information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following outputs are examples of ETH-CFM domain information.

### Output Example

```
*A:node-1# show eth-cfm domain
=====
CFM Domain Table
=====
Md-index   Level Name                               Format
  md-admin-name
-----
15         5                                         none
  level5-common
=====

*A:node-1# show eth-cfm domain level5-common detail
=====
Domain 15
Md-index      : 15                               Level      : 5
Name Format    : none                               MHF Creation : defMHFnone
Name          : (Not Specified)           Next Ma Index : 1
Admin Name    : level5-common
Creation Origin : manual
=====
```

Table 118: Output fields: ETH-CFM domain

Label	Description
Md-index	Displays the MD index value
Level	Displays an integer identifying the maintenance domain Level (MD Level)  Higher numbers correspond to higher maintenance domains (those with the greatest physical reach), with the highest values for customer CFM PDUs. Lower numbers correspond to lower maintenance domains (those with more limited physical reach), with the lowest values for CFM PDUs protecting single bridges or physical links.
Name	Displays a generic MD name
Format	Displays the type of the MD name  Values include <b>dns</b> , <b>none</b> , <b>mac</b> , and <b>string</b>
md-admin-name	Displays the administrative MD name

**Output example — all associations**

```

show eth-cfm domain all-associations
=====
CFM Association Table
=====
Md-index  Ma-index  Name                               Int  Hold  Bridge-id  MEPS TxSid
md-admin-name
ma-admin-name
bridge-name
-----
10        100       vpls-100-0                         1   n/a   1          no
  10
  100
  vpls-100
12        1000      vpls-100-1                         1   n/a   4          yes
  12
  vpls-100-1
  vpls-100
=====
* indicates that the corresponding row element may have been truncated.
    
```

Table 119: Output fields: ETH-CFM domain all-associations

Label	Description
Md-index	Displays the MD index value
Ma-index	Displays the MA index value
Name	Displays the generic MD name

Label	Description
Int	Displays the CCM transmission interval for all MEPs in the association
Hold	Displays the CCM hold time, in milliseconds, that is added before the defect condition is raised. A value of "n/a" indicates that the MEP is not subsecond and does not support the CCM hold time.
Bridge-id	Displays the bridge-identifier value for the domain association
MEPS	Displays the total local and remote maintenance association end point (MEP)
TxSid	Yes — the Sender ID TLV is included in the supported ETH-CFM PDUs No — the Sender ID TLV is not included in the supported ETH-CFM PDUs
md-admin-name	Displays the administrative MD name
ma-admin-name	Displays the administrative MA name
bridge-name	Displays the administrative bridge-identifier name

## domain

### Syntax

**domain** [*domain-name*]

### Context

[\[Tree\]](#) (show>router>firewall domain)

### Full Context

show router firewall domain

### Description

This command lists an overview of all firewall domains that are provisioned in the routing instance. Configuring the *domain-name* parameter will display operational details for the specified firewall domain.

### Parameters

***domain-name***

Specifies the name of a firewall domain, up to 32 characters maximum.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of firewall domain information.

## Output Example

```

Node# show router 4 firewall domain
=====
Firewall domains
=====
Domain                NAT-group  Admin-state
-----
demo_domain_01        1          in-service
domain_slaac_4        1          in-service
-----
No. of firewall domains: 2
=====

Node# show router 4 firewall domain "domain_slaac_4"
=====
Firewall domain "domain_slaac_4"
=====
ISA group              : 1
Administrative state   : in-service
Last management change : 01/23/2017 10:47:24
=====
Firewall domain prefixes
=====
Prefix                Description
-----
2001:db8:5ffe::/32    (Not Specified)
-----
No. of prefixes: 1
=====
    
```

## domain

### Syntax

```

domain ipsec-domain-id [now] auto
domain ipsec-domain-id [now] to router-id
    
```

### Context

[\[Tree\]](#) (tools>perform>redundancy>multi-chassis>mc-ipsec>force-switchover domain)

### Full Context

tools perform redundancy multi-chassis mc-ipsec force-switchover domain

### Description

This command triggers an IPsec N:M switchover for the specified IPsec domain.

### Parameters

***ipsec-domain-id***  
 Specifies the multi-chassis IPsec domain value.

**Values** 1 to 255

**now**

Specifies to switchover without confirmation.

**auto**

Automatically elects a new active node, excluding the current active node.

**to *router-id***

Specifies the router ID of the new active node.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 7.38 dot1x

dot1x

**Syntax**

dot1x

**Context**

[\[Tree\]](#) (show>system>security dot1x)

**Full Context**

show system security dot1x

**Description**

This command displays IEEE 802.1X authentication information.

**Platforms**

All

## 7.39 downgrade

downgrade

**Syntax**

downgrade *target-version* *target* [**reboot**]

### Context

[\[Tree\]](#) (tools>perform>persistence downgrade)

### Full Context

tools perform persistence downgrade

### Description

This command downgrades persistence files to a previous version.

### Parameters

#### *target*

Specifies the downgrade version.

#### *reboot*

Specifies to reboot the system after a successful conversion.

### Platforms

All

## 7.40 downstream-nodes

### downstream-nodes

### Syntax

**downstream-nodes**

### Context

[\[Tree\]](#) (show>router>p2mp-sr-tree downstream-nodes)

### Full Context

show router p2mp-sr-tree downstream-nodes

### Description

This command displays information for the downstream nodes of the P2MP SR tree.

### Platforms

All

### Output

The following output is an example of downstream nodes information, and [Table 120: Output Fields: show router p2mp-sr-tree downstream-nodes](#) describes the output fields.

### Output Example

```

=====
Replication Segment
=====
Nexthop                               Admin/Oper
Interface                               Admin/Oper
  RplSegment                             Admin/Oper
  ProtectNh
  ProtectInterface
-----
10.180.3.2                               Up/Up
N/A
  rs_8193_10.20.1.3_inst_1               Up/Up
  N/A
  N/A
10.180.3.2                               Up/Up
N/A
  rs_8193_10.20.1.3_inst_1               Up/Up
  N/A
  N/A
-----
Total Downstream Nodes : 2
=====
    
```

Table 120: Output Fields: show router p2mp-sr-tree downstream-nodes

Label	Description
Nexthop Interface	IP address of the next hop interface
Rpl Segment	Replication segment name
ProtectNh	Protection next hop
ProtectInterface	Protection interface
Admin/Oper	Administrative state/Operational state of the entity

## downstream-nodes

### Syntax

**downstream-nodes** [*id*] [**nh-addr** *ip-address*] [**nh-ifName** *interface-name*] [**replication-sid** *label*] [**oper** {**up** | **down**}]

### Context

**[Tree]** (show>router>p2mp-sr-tree>replication-segment downstream-nodes)

### Full Context

show router p2mp-sr-tree replication-segment downstream-nodes



## Description

This command displays information for the specified replication segment next hops of the P2MP SR tree.

## Parameters

### *id*

Specifies the next-hop ID.

**Values** 1 to 4096

### *ip-address*

Specifies the root IPv4 address.

### *interface-name*

Specifies the interface name, up to 32 characters.

### *label*

Displays the specified label number.

**Values** 0, 16 to 1048576

### *oper up*

Displays the next-hop with operational status up.

### *oper down*

Displays the next-hop with operational status down.

## Platforms

All

## 7.41 drain

drain

## Syntax

[no] drain

## Context

**[Tree]** (tools>perform>router>l2tp>group drain)

## Full Context

tools perform router l2tp group drain

## Description

This command triggers an attempt to drain a specified L2TP tunnel group.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## drain

### Syntax

[no] drain

### Context

[\[Tree\]](#) (tools>perform>router>l2tp>group>tunnel drain)

[\[Tree\]](#) (tools>perform>router>l2tp>tunnel drain)

### Full Context

tools perform router l2tp group tunnel drain

tools perform router l2tp tunnel drain

### Description

This command triggers an attempt to drain a specified L2TP tunnel.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## drain

### Syntax

[no] drain

### Context

[\[Tree\]](#) (tools>perform>router>l2tp>peer drain)

### Full Context

tools perform router l2tp peer drain

### Description

This command triggers an attempt to drain a specified L2TP peer.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 7.42 ds-lite-b4

### ds-lite-b4

#### Syntax

**dscp-table** [*value dscp-value*]

#### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg>gateway ds-lite-b4)

#### Full Context

show subscriber-mgmt vrgw brg gateway ds-lite-b4

#### Description

This command displays the DS-Lite B4 services of a gateway.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 7.43 dscp-map

### dscp-map

#### Syntax

**dscp-map** [*dscp-name*]

#### Context

[\[Tree\]](#) (show>router>sgt-qos dscp-map)

#### Full Context

show router sgt-qos dscp-map

#### Description

This command displays DSCP to FC mappings.

#### Parameters

***dscp-name***

Specifies the DSCP name.

**Values** be, ef, cp1, cp2, cp3, cp4, cp5, cp6, cp7, cp9, cs1, cs2, cs3, cs4, cs5, nc1, nc2, af11, af12, af13, af21, af22, af23, af31, af32, af33, af41, af42, af43, cp11, cp13, cp15, cp17, cp19, cp21, cp23, cp25, cp27, cp29, cp31, cp33, cp35, cp37, cp39, cp41, cp42, cp43, cp44, cp45, cp47, cp49, cp50, cp51, cp52, cp53, cp54, cp55, cp57, cp58, cp59, cp60, cp61, cp62, cp63

## Platforms

All

## Output

The following output is an example of DSCP mapping information.

### Output Example

```
A:ALA-A# show router sgt-qos dscp-map
=====
DSCP to FC Mappings
=====
DSCP Value          FC Value          Default FC Value
-----
be                  nc                 nc
cp1                 be                 be
cp2                 be                 be
cp3                 be                 be
cp4                 be                 be
cp5                 be                 be
cp6                 be                 be
cp7                 be                 be
cs1                 be                 be
cp9                 be                 be
af11                af                 af
cp11                be                 be
af12                af                 af
cp13                be                 be
af13                af                 af
cp15                be                 be
cs2                 be                 be
cp17                be                 be
af21                l1                 l1
cp19                be                 be
af22                l1                 l1
cp21                be                 be
af23                l1                 l1
cp23                be                 be
cs3                 be                 be
cp25                be                 be
af31                l1                 l1
cp27                be                 be
af32                l1                 l1
cp29                be                 be
af33                l1                 l1
cp31                be                 be
cs4                 be                 be
cp33                be                 be
af41                nc                 nc
cp35                be                 be
af42                h2                 h2
cp37                be                 be
```

```
af43          h2          h2
cp39          be          be
cs5           be          be
cp41          be          be
cp42          be          be
cp43          be          be
cp44          be          be
cp45          be          be
ef           ef          ef
cp47          be          be
nc1           nc          nc
cp49          be          be
cp50          h2          h2
cp51          be          be
cp52          be          be
cp53          be          be
cp54          be          be
cp55          be          be
nc2           nc          nc
cp57          be          be
cp58          be          be
cp59          be          be
cp60          be          be
cp61          be          be
cp62          be          be
cp63          be          be
=====
A:ALA-A#
```

## 7.44 dscp-table

### dscp-table

#### Syntax

**dscp-table** [*value dscp-value*]

#### Context

[\[Tree\]](#) (show>qos dscp-table)

#### Full Context

show qos dscp-table

#### Description

This command displays the DSCP name-to-DSCP value mappings.

#### Parameters

**value dscp-value**

The specific DSCP value for which to display information.

**Values** 0 to 63

**Default** Show all values

## Platforms

All

## Output

The following output is an example of dscp-table information, and [Table 121: Show QoS DSCP Table Output Fields](#) describes the output fields.

### Output Example

```
A:ALA-48# show qos dscp-table
=====
DSCP Mapping
=====
DSCP Name      DSCP Value    TOS (bin)     TOS (hex)
-----
be             0             0000 0000     00
cp1            1             0000 0100     04
cp2            2             0000 1000     08
cp3            3             0000 1100     0C
cp4            4             0001 0000     10
cp5            5             0001 0100     14
cp6            6             0001 1000     18
cp7            7             0001 1100     1C
cs1            8             0010 0000     20
cp9            9             0010 0100     24
af11           10            0010 1000     28
cp11           11            0010 1100     2C
af12           12            0011 0000     30
cp13           13            0011 0100     34
af13           14            0011 1000     38
cp15           15            0011 1100     3C
cs2            16            0100 0000     40
cp17           17            0100 0100     44
af21           18            0100 1000     48
cp19           19            0100 1100     4C
af22           20            0101 0000     50
cp21           21            0101 0100     54
af23           22            0101 1000     58
cp23           23            0101 1100     5C
cs3            24            0110 0000     60
cp25           25            0110 0100     64
af31           26            0110 1000     68
cp27           27            0110 1100     6C
af32           28            0111 0000     70
cp29           29            0111 0100     74
af33           30            0111 1000     78
cp31           31            0111 1100     7C
cs4            32            1000 0000     80
cp33           33            1000 0100     84
af41           34            1000 1000     88
cp35           35            1000 1100     8C
af42           36            1001 0000     90
cp37           37            1001 0100     94
af43           38            1001 1000     98
cp39           39            1001 1100     9C
cs5            40            1010 0000     A0
cp41           41            1010 0100     A4
cp42           42            1010 1000     A8
```

```

cp43      43      1010 1100    AC
cp44      44      1011 0000    B0
cp45      45      1011 0100    B4
ef        46      1011 1000    B8
cp47      47      1011 1100    BC
nc1       48      1100 0000    C0
cp49      49      1100 0100    C4
cp50      50      1100 1000    C8
cp51      51      1100 1100    CC
cp52      52      1101 0000    D0
cp53      53      1101 0100    D4
cp54      54      1101 1000    D8
cp55      55      1101 1100    DC
nc2       56      1110 0000    E0
cp57      57      1110 0100    E4
cp58      58      1110 1000    E8
cp59      59      1110 1100    EC
cp60      60      1111 0000    F0
cp61      61      1111 0100    F4
cp62      62      1111 1000    F8
cp63      63      1111 1100    FC
=====
A:ALA-48#

A:ALA-48# show qos dscp-table value 46
=====
DSCP Mapping
=====
DSCP Name      DSCP Value      TOS (bin)      TOS (hex)
-----
ef              46              1011 1000      B8
=====
A:ALA-48#
    
```

Table 121: Show QoS DSCP Table Output Fields

Label	Description
DSCP Name	Displays the name of the DiffServ code point to be associated with the forwarding class.
DSCP Value	Displays the DSCP values, between 0 and 63.
TOS (bin)	Displays the type of service in binary format.
TOS (hex)	Displays the type of service in hex format.

## 7.45 dslite-lsn-sub

### dslite-lsn-sub

#### Syntax

**dslite-lsn-sub** *router* *router-instance* **b4-address-prefix** *ipv6-prefix*

## Context

[\[Tree\]](#) (clear>nat dslite-lsn-sub)

## Full Context

```
clear nat dslite-lsn-sub
```

## Description

This command clears NAT mappings for Dual-Stack Lite (DS-Lite) LSN subscribers.

## Parameters

### *router-instance*

Specifies the router instance, up to 32 characters.

### *ipv6-prefix*

Specifies the IPv6 prefix and length.

- Values**
- x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x: [0 to FFFF]H
  - d: [0 to 255]D

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 7.46 dump

```
dump
```

## Syntax

```
dump
```

## Context

[\[Tree\]](#) (tools dump)

## Full Context

```
tools dump
```

## Description

Commands in this context display troubleshooting information.



## Platforms

All

## 7.47 duplicate

duplicate

### Syntax

**duplicate** [*ip-address*]

### Context

[\[Tree\]](#) (clear>service>id>proxy-arp duplicate)

### Full Context

clear service id proxy-arp duplicate

### Description

This command clears proxy-ARP duplicate entries.

### Parameters

***ip-address***

Specifies the IP address.

**Values** a.b.c.d

## Platforms

All

duplicate

### Syntax

**duplicate** [*ipv6-address*]

### Context

[\[Tree\]](#) (clear>service>id>proxy-nd duplicate)

### Full Context

clear service id proxy-nd duplicate

## Description

This command clears proxy-ND duplicate entries.

## Parameters

### *ipv6-address*

Specifies the IPv6 address.

- Values**
- x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x: [0 to FFFF] H
  - d: [0 to 255] D

## Platforms

All

## 7.48 dynamic

### dynamic

## Syntax

`dynamic ip-address`

## Context

[\[Tree\]](#) (clear>service>id>proxy-arp dynamic)

## Full Context

clear service id proxy-arp dynamic

## Description

This command clears proxy-ARP dynamic entries.

## Parameters

### *ip-address*

Specifies the IP address.

- Values** a.b.c.d

## Platforms

All

## dynamic

### Syntax

**dynamic** *ipv6-address*

### Context

[\[Tree\]](#) (clear>service>id>proxy-nd dynamic)

### Full Context

clear service id proxy-nd dynamic

### Description

This command clears proxy-ND dynamic entries.

### Parameters

#### *ipv6-address*

Specifies the IPv6 address.

- Values**
- x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x: [0 to FFFF] H
  - d: [0 to 255] D

### Platforms

All

## 7.49 dynamic-blocks

## dynamic-blocks

### Syntax

**dynamic-blocks subscriber** *sub-ident-string* [**nat-policy** *policy-name*]

### Context

[\[Tree\]](#) (tools>dump>nat>l2-aware dynamic-blocks)

### Full Context

tools dump nat l2-aware dynamic-blocks

## Description

This command displays information about dynamic blocks.

## Parameters

### *sub-ident-string*

Specifies the subscriber identification string, up to 64 characters

### *policy-name*

Specifies the NAT policy name, up to 32 characters

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of dynamic block information, and [Table 122: Dynamic Blocks Field Descriptions](#) describes the output fields.

### Output Example

```
/tools dump nat l2-aware dynamic-blocks subscriber "dynblocks sub"
=====
Dynamic blocks
=====
NAT policy          Router Outside IP      Dynamic block
-----
dynblocks pol       101   40.101.200.5         1049 - 1058
                                      1059 - 1068
```

Table 122: Dynamic Blocks Field Descriptions

Field	Description
NAT policy	The NAT policy name
Router	The router number
Outside IP	The outside IP address
Dynamic block	The dynamic block range

## 7.50 dynamic-resolve

### dynamic-resolve

## Syntax

**dynamic-resolve all [force]**

**dynamic-resolve ip-address [force]**

## Context

[\[Tree\]](#) (tools>perform>service>id>proxy-arp dynamic-resolve)

## Full Context

tools perform service id proxy-arp dynamic-resolve

## Description

This command triggers the resolve procedure for dynamic IP entries. When executed, a resolve message (ARP-request) is issued for the requested IP or, if the **all** option used, for all the configured dynamic IPs.

The **force** option triggers the resolve process even for IPs with an existing entry in the proxy-ARP table.

## Parameters

### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

### *all*

Runs the command for all configured dynamic IPs.

### *force*

Issues a resolve message even when configured dynamic IP entries are present.

## Platforms

All

## dynamic-resolve

## Syntax

**dynamic-resolve all [force]**

**dynamic-resolve *ipv6-address* [force]**

## Context

[\[Tree\]](#) (tools>perform>service>id>proxy-nd dynamic-resolve)

## Full Context

tools perform service id proxy-nd dynamic-resolve

## Description

This command triggers the resolve procedure for dynamic IPv6 entries. When executed, a resolve message (Neighbor Solicitation) is issued for the requested IPv6 or, if the **all** option used, for all the configured dynamic IPv6s. The **force** option triggers the resolve process even for IPv6 addresses with an existing entry in the proxy-ARP table.

## Parameters

### *ipv6-address*

Specifies the IPv4 or IPv6 address.

**Values** ip-address: a.b.c.d  
ipv6-address: x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
where:  
x: [0 to FFFF]H  
d: [0 to 255]D

### *all*

Runs the command for all configured dynamic IPv6 addresses.

### *force*

Issues a resolve message even when configured dynamic IP entries are present.

## Platforms

All

## 7.51 dynamic-services

### dynamic-services

#### Syntax

**dynamic-services**

#### Context

**[Tree]** (show>service>id dynamic-services)

**[Tree]** (show>service dynamic-services)

#### Full Context

show service id dynamic-services

show service dynamic-services

#### Description

Commands in this context show dynamic services information.



#### Note:

These commands are not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## dynamic-services

### Syntax

**dynamic-services**

### Context

**[Tree]** (clear>service>id dynamic-services)

**[Tree]** (clear>service dynamic-services)

### Full Context

clear service id dynamic-services

clear service dynamic-services

### Description

Commands in this context clear dynamic services related data.



**Note:**

These commands are not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## dynamic-services

### Syntax

**dynamic-services**

### Context

**[Tree]** (clear>service>stats dynamic-services)

### Full Context

clear service statistics dynamic-services

### Description

This command resets the dynamic services script statistics. See also **show service dynamic services script statistics**.



**Note:**

This command is not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## dynamic-services

### Syntax

**dynamic-services command-list**

### Context

**[Tree]** (tools>dump>service dynamic-services)

### Full Context

tools dump service dynamic-services

### Description

This command displays the list of supported commands that can be used in dynamic service CLI scripts.

There are two types of CLI nodes in this list:

- Pass through nodes: navigation is allowed but attributes creation or attribute changes are prohibited in this node.
- Allowed nodes: navigation, attribute creation and attribute changes are allowed in this node.



#### Note:

These commands are not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 7.52 dynamic-services-policy

## dynamic-services-policy

### Syntax

**dynamic-services-policy** [*policy-name*]

### Context

**[Tree]** (show>service>dynsvc dynamic-services-policy)

### Full Context

show service dynamic-services dynamic-services-policy



## Description

This command displays the dynamic services policy information.



**Note:**

This command is not available in the MD-CLI.

## Parameters

***policy-name***

specifies for which dynamic services policy the information is requested.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of dynamic service policy information.

### Output Example

```
# show service dynamic-services dynamic-services-policy "dynsvc-policy-1"
=====
Dynamic Service Policies
=====
Dynamic Service Policy      : dynsvc-policy-1
-----
cli-user                    : (Not Specified)
description                 : Dynamic Services Policy 1
script-policy               : script-policy-5
sap-limit                   : 2000

Accounting instance 1
Stats type                  : volume-time
server policy               : aaa-server-policy-1
Update interval (minutes)  : 30
Update interval jitter     : 180s

Accounting instance 2
Stats type                  : time
server policy               : aaa-server-policy-2
Update interval (minutes)  : 0
Update interval jitter     : 10%
-----
No. of Services-policies: 1
=====
```

[Table 123: Dynamic Services Policy Field Descriptions](#) describes the Dynamic Services policy fields.

*Table 123: Dynamic Services Policy Field Descriptions*

Output Field	Description
dynsrv-policy-name	The unique name of a dynamic services policy, up to 32 characters.

Output Field	Description
cli-user	The identifier name of the CLI user associated with this Dynamic Services policy.
script-policy	The identifier name of the script policy associated with this Dynamic Services policy.
sap-limit	The limit of the number of SAPs (Service Access Point) that can be created using this Dynamic Services policy.
Stats type	The value used to identify the type of accounting statistics gathered, either <b>volume-time</b> or <b>time</b> .
server policy	The identifier name of a RADIUS server policy to be used for accounting.
update interval (minutes)	The time interval between consecutive accounting updates when using this Dynamic Services policy.
update interval jitter	The amount of jitter to be applied on the update interval.
No. of Services-policies	The total number Dynamic Services policies.

## 8 e Commands

### 8.1 ecmp

```
ecmp
```

#### Syntax

```
ecmp
```

#### Context

[\[Tree\]](#) (show>router ecmp)

#### Full Context

```
show router ecmp
```

#### Description

This command displays the ECMP settings for the router.

#### Platforms

All

#### Output

The following output is an example of ECMP settings information, and [Table 124: ECMP Fields](#) describes the output fields for the router ECMP settings.

#### Output Example

```
A:ALA-A# show router ecmp
=====
Router ECMP
=====
Instance      Router Name      ECMP      Configured-ECMP-Routes
-----
1             Base             True      8
=====
A:ALA-A#
*A:Dut-C# show router ecmp
=====
Router ECMP
=====
Instance      Router Name      ECMP      Max-ECMP-      Weight ECMP
            Router Name      ECMP      Rtes
-----
1             Base             True      32             True
```

Table 124: ECMP Fields

Label	Description
Instance	The router instance number
Router Name	The name of the router instance
ECMP	False — ECMP is disabled for the instance True — ECMP is enabled for the instance
Configured-ECMP-Routes	The number of ECMP routes configured for path sharing

## 8.2 edit-ipoe-session

### edit-ipoe-session

#### Syntax

**edit-ipoe-session sap** *sap-id* **mac** *mac-address* [ **subscriber** *sub-ident-string*] [**sub-profile-string** *sub-profile-string*] [**sla-profile-string** *sla-profile-string*] [ **inter-dest-id** *intermediate-destination-id*] [**ancp-string** *ancp-string*] [**app-profile-string** *app-profile-string*] [ **circuit-id** *circuit-id*] [**remote-id** *remote-id*]

#### Context

[Tree] (tools>perform>subscr-mgmt edit-ipoe-session)

#### Full Context

tools perform subscriber-mgmt edit-ipoe-session

#### Description

This command updates the data of the IPoE session identified with the given MAC address and SAP identifier. Optionally the remote ID and circuit ID can be specified to identify the IPoE session to update.



#### Note:

The changes take effect immediately.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.3 edit-lease-state

### edit-lease-state

#### Syntax

**edit-lease-state sap** *sap-id* **ip** *ip-address* [ **mac** *ieee-address*] [**subscriber** *sub-ident-string*] [**sub-profile-string** *sub-profile-string*] [ **sla-profile-string** *sla-profile-string*] [**app-profile-string** [ *app-profile-string*]  
[**inter-dest-id** *intermediate-destination-id*] [ **ancp-string** *ancp-string*]

**edit-lease-state svc-id** *service-id* **ip** *ip-address* [ **mac** *ieee-address*] [ **subscriber** *sub-ident-string*] [**sub-profile-string** *sub-profile-string*] [**sla-profile-string** *sla-profile-string*] [**app-profile-string** [ *app-profile-string*]  
[**inter-dest-id** *intermediate-destination-id*] [ **ancp-string** *ancp-string*]

#### Context

[Tree] (tools>perform>subscr-mgmt edit-lease-state)

#### Full Context

tools perform subscriber-mgmt edit-lease-state

#### Description

This command provides the parameters to edit lease state information.

#### Parameters

##### **sap-id**

Specifies the physical port identifier portion of the SAP definition.

##### **ip-address**

Modifies lease state information for the specified IP address.

##### **ieee-address**

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

##### **sub-ident-string**

Modifies the lease state information for the specified subscriber identification.

##### **sub-profile-string**

Modifies lease state information for the specified subscriber profile.

##### **sla-profile-string**

Modifies lease state information for the specified SLA profile.

##### **service-id**

Modifies lease state information for the specified service ID.

#### Values

*service-id*: 1 to 2147483647

*svc-name*: 64 characters maximum

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.4 edit-ppp-session

### edit-ppp-session

#### Syntax

**edit-ppp-session sap** *sap-id* [**user-name** *user-name*] [**mac** *mac-address*] [**session-id** *session-id*] [**ip-address** *ip-address*] [**subscriber** *sub-ident-string*] [**sub-profile-string** *sub-profile-string*] [**sla-profile-string** *sla-profile-string*] [**inter-dest-id** *intermediate-destination-id*] [**ancp-string** *ancp-string*] [**app-profile-string** *app-profile-string*]

**edit-ppp-session svc** *service-id* [**user-name** *user-name*] [**mac** *mac-address*] [**session-id** *session-id*] [**ip-address** *ip-address*] [**subscriber** *sub-ident-string*] [**sub-profile-string** *sub-profile-string*] [**sla-profile-string** *sla-profile-string*] [**inter-dest-id** *intermediate-destination-id*] [**ancp-string** *ancp-string*] [**app-profile-string** *app-profile-string*]

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt edit-ppp-session)

#### Full Context

tools perform subscriber-mgmt edit-ppp-session

#### Description

This command updates the data of the PPP session identified with the given MAC address and SAP identifier. Optionally the remote-id and circuit-id can be specified to identify the IPoE session to update.



#### Note:

The changes take immediate effect.

#### Parameters

##### *sap-id*

Specifies a SAP ID, up to 255 characters.

##### *user-name*

Specifies the PPP user name, up to 253 characters.

##### *mac-address*

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers.

***session-id***

Specifies information about the ID of the PPP session.

**Values** 1 to 65535

***sub-ident-string***

Specifies an existing subscriber identification profile.

***sla-profile-string***

Identifies the SLA profile string up, to 16 characters.

***ip-address***

Specifies the peer's IP address.

***service-id***

Specifies an existing subscriber service ID.

**Values** 1 to 2147483647

***sub-profile-string***

Specifies the subscriber profile string, up to 16 characters.

***sub-profile-name***

Specifies the subscriber profile name, up to 32 characters.

***intermediate-destination-id***

Specifies the intermediate destination identifier which is encoded in the identification strings, up to 32 characters.

***ancp-string***

Specifies the ASCII representation of the string, up to 63 characters.

***app-profile-string***

Specifies the application profile string, up to 16 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.5 edit-slaac-host

### edit-slaac-host

**Syntax**

**edit-slaac-host sap** *sap-id* [**user-name** *user-name*] [**mac** *mac-address*] [**session-id** *session-id*] [**ip-address** *ip-address*] [**subscriber** *sub-ident-string*] [**sub-profile-string** *sub-profile-string*] [**sla-profile-string** *sla-profile-string*] [**inter-dest-id** *intermediate-destination-id*] [**ancp-string** *ancp-string*] [**app-profile-string** *app-profile-string*]

**edit-slaac-host svc** *service-id* [**user-name** *user-name*] [**mac** *mac-address*] [**session-id** *session-id*] [**ip-address** *ip-address*] [**subscriber** *sub-ident-string*] [**sub-profile-string** *sub-profile-string*] [**sla-profile-**

**string** *sla-profile-string*] [**inter-dest-id** *intermediate-destination-id*] [**ancp-string** *ancp-string*] [ **app-profile-string** *app-profile-string*]

## Context

[[Tree](#)] (tools>perform>subscr-mgmt edit-slaac-host)

## Full Context

tools perform subscriber-mgmt edit-slaac-host

## Description

This command updates the data of the SLAAC host information.

## Parameters

### **sap-id**

Specifies a SAP ID, up to 255 characters.

### **user-name**

Specifies the PPP user name up to 253 characters.

### **mac-address**

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers.

### **session-id**

Specifies information about the ID of the PPP session.

**Values** 1 to 65535

### **sub-ident-string**

Specifies an existing subscriber identification profile.

### **sla-profile-string**

Identifies the SLA profile string up to 16 characters.

### **ip-address**

Specifies the peer's IP address.

### **service-id**

Specifies an existing subscriber service ID.

**Values** 1 to 2147483647

### **sub-profile-string**

Specifies the subscriber profile string up to 16 characters.

### **sub-profile-name**

Specifies the subscriber profile name up to 32 characters.

### **intermediate-destination-id**

Specifies the intermediate destination identifier which is encoded in the identification strings up to 32 characters.



***ancp-string***

Specifies the ASCII representation of the up to 63 characters.

***app-profile-string***

Specifies the application profile string up to 16 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.6 efm-oam

### efm-oam

**Syntax**

**efm-oam**

**Context**

[\[Tree\]](#) (show>system>ethernet efm-oam)

**Full Context**

show system ethernet efm-oam

**Description**

This command displays a system-level summary for EFM-OAM enabled ports. It includes the configuration, action, various states, and soft reset precedence for the protocol.

**Platforms**

All

**Output**

The following output is an example of EFM-OAM summary information.

**Output Example**

```
show system ethernet efm-oam
=====
System Configuration
=====
Grace Tx Enable           : False
Dying Gasp On Reset      : Disabled
=====
Active Port Configuration & State Summary
=====
Fault Header:
LinkMonitor: F = Frame, FP = Period, FS = Summary, SP = Symbol
LocalSfAct : CE = Critical, DG = Dying Gasp, EV = Event, PT = Port
PeerRDIRx  : CE = Critical, DG = Dying Gasp, LF = Link, EV = Event
Table Legend
```

```

- = Not Configured, c = Configured, * = SF Active, s = Shutdown, l = Log Only
Soft Reset Header:
  Gasp : T = True, F = False (A = active, I = inactive)
  Grace: T = True, F = False (A = active, I = inactive)
  SR (Action on Soft Reset): - = None, DG = Dying Gasp, G = Grace TLV
  TF (Trigger-Fault):
    - = Not configured, DG = Dying Gasp, CE = Critical Event
=====
Port          States  LinkMonitor LocalSfAct   PeerRdiRx   SoftReset   TF
           EFM LM  F FP FS SP  CE DG EV PT  CE DG LF EV  Gasp Grace SR
-----
1/1/1        Up Dn  - - - -  - - - s  s s s l  T(I) T(I) - -
1/1/6        Dn Dn  - - - -  - - - s  s s s l  T(I) T(I) - -
-----
No. of ports EFM enabled: 2
=====
    
```

## efm-oam

### Syntax

efm-oam

### Context

[\[Tree\]](#) (clear>port>ethernet efm-oam)

### Full Context

clear port ethernet efm-oam

### Description

This command clears EFM-OAM statistics on the port.

### Platforms

All

## efm-oam

### Syntax

efm-oam

### Context

[\[Tree\]](#) (show>port>ethernet efm-oam)

### Full Context

show port ethernet efm-oam

## Description

This command displays EFM-OAM information.

## Platforms

All

## 8.7 egress-if

### egress-if

## Syntax

**egress-if** *port-id* [**summary** | **detail**] [*family*]

## Context

[\[Tree\]](#) (show>router>ldp>bindings>active egress-if)

## Full Context

show router ldp bindings active egress-if

## Description

This command displays LDP active bindings by matching the egress interface.

## Parameters

### *port-id*

Specifies the port ID.

### Values

	<i>slot[/mda[/port]]</i> or <i>slot/mda/port [.channel]</i>		
aps-id	<b>aps-group-id</b> [.channel]		
	<b>aps</b>	keyword	
	<i>group-id</i>	1 to 128	
eth-sat-id	<b>esat-id</b> [/slot/[u]port]		
	<b>esat</b>	keyword	
	<i>id</i>	1 to 20	
	<i>u</i>	keyword for up-link port	
tdm-sat-id	<b>tsat-id</b> [/slot/[u]port. channel]		
	<b>tsat</b>	keyword	
	<i>id</i>	1 to 20	

	<b>u</b>	keyword for up-link port
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a to b

### **family**

Specifies the address family.

**Values**    ipv4, ipv6

### **Platforms**

All

## **8.8 egress-label**

### egress-label

#### **Syntax**

**egress-label** *start-label* [*end-label*]

#### **Context**

[\[Tree\]](#) (show>service egress-label)

#### **Full Context**

show service egress-label

#### **Description**

This command displays service information using the range of egress labels.

If only the mandatory *egress-label/1* parameter is specified, only services using the specified label are displayed.

If both *start-label* and *end-label* parameters are specified, the services using the range of labels X where *start-label* <= X <= *end-label* are displayed.

Use the **show router ldp bindings** command to display dynamic labels.

#### **Parameters**

##### ***start-label***

The starting egress label value for the label range. If only *start-label* is specified, services only using *start-label* are displayed.

**Values** 0,18432 to 524287

**end-label**

The ending egress label value for the label range.

**Default** The *start-label* value.

**Values** 18432 to 524287

**Platforms**

All

**Output**

The following output is an example of service egress label information.

**Output Example**

```
*A:ALA-12# show service egress-label 0 10000
=====
Martini Service Labels
=====
Svc Id      Sdp Id      Type I.Lbl      E.Lbl
-----
1           10:1        Mesh 0          0
1           20:1        Mesh 0          0
1           30:1        Mesh 0          0
1           100:1       Mesh 0          0
...
1           107:1       Mesh 0          0
1           108:1       Mesh 0          0
1           300:1       Mesh 0          0
1           301:1       Mesh 0          0
1           302:1       Mesh 0          0
1           400:1       Mesh 0          0
1           500:2       Spok 131070     2001
1           501:1       Mesh 131069     2000
100         300:100     Spok 0          0
200         301:200     Spok 0          0
300         302:300     Spok 0          0
400         400:400     Spok 0          0
-----
Number of Bindings Found : 23
=====
*A:ALA-12#
```

[Table 125: Show Service Egress Command Output Fields](#) describes show service egress label output fields.

*Table 125: Show Service Egress Command Output Fields*

Label	Description
Svc Id	The ID that identifies a service.
Sdp Id	The ID that identifies an SDP.

Label	Description
Type	Indicates whether the SDP binding is a spoke or a mesh.
I. Lbl	The VC label used by the far-end device to send packets to this device in this service by the SDP.
E. Lbl	The VC label used by this device to send packets to the far-end device in this service by the SDP.
Number of bindings found	The total number of SDP bindings that exist within the specified egress label range.

## 8.9 egress-lsp

### egress-lsp

#### Syntax

**egress-lsp** *tunnel-id* [**summary** | **detail**] [*family*]

#### Context

[\[Tree\]](#) (show>router>ldp>bindings>active egress-lsp)

#### Full Context

show router ldp bindings active egress-lsp

#### Description

This command displays LDP active bindings by matching the egress LSP.

#### Parameters

##### *tunnel-id*

Specifies the tunnel ID.

**Values** 0 to 4294967295

##### *family*

Specifies the address family.

**Values** ipv4, ipv6

#### Platforms

All

## 8.10 egress-nh

### egress-nh

#### Syntax

**egress-nh** [*family*] [**summary** | **detail**] *ip-address*

#### Context

[\[Tree\]](#) (show>router>ldp>bindings>active egress-nh)

#### Full Context

show router ldp bindings active egress-nh

#### Description

This command displays LDP active bindings by matching the egress Next-Hop (NH).

#### Parameters

##### *family*

Specifies the address family.

**Values**    ipv4, ipv6

##### *ip-address*

Specifies the IPv4 or IPv6 address.

##### **Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

#### Platforms

All

## 8.11 egress-pbr

### egress-pbr

#### Syntax

**egress-pbr [detail]**

#### Context

[\[Tree\]](#) (tools>dump>filter>resources egress-pbr)

#### Full Context

tools dump filter resources egress-pbr

#### Description

This command displays the number of allocated unique egress PBR destinations.

#### Parameters

##### detail

Displays number of allocated unique egress PBR destinations together with a list of destinations and their ref counts.

#### Platforms

All

#### Output

The following output is an example of filter resource egress PBR destination information.

#### Output Example

```
*A:Dut-C>tools dump filter resources egress-pbr
=====
Egress PBR destinations
=====
Name                               Count
-----
All destinations                    8
Unique destinations                 4
=====

*A:Dut-C# tools dump filter resources egress-pbr detail
=====
Unique egress PBR destinations
=====
Num Action      Ref. count Parameters
-----
1 Esi L3        1          esi 00:00:00:00:00:00:00:00:01
```



```

      ip  5.5.1.5
      if  VasToFromAccess
      rtr 123
-----
 2 Esi L3      2      esi 00:00:00:00:00:00:00:00:02
      ip  5.5.0.5
      if  VasToFromNetwork
      rtr 123
-----
 3 Red-pol    3      name egress-pbr
-----
 4 Red-pol    2      name ingress-pbr
=====
```

## 8.12 egress-rate-distribution

### egress-rate-distribution

#### Syntax

**egress-rate-distribution**

#### Context

[\[Tree\]](#) (show>lag egress-rate-distribution)

#### Full Context

show lag egress-rate-distribution

#### Description

This command displays adaptive load-balancing egress rate distribution information.

#### Platforms

All

## 8.13 egress-statistics

### egress-statistics

#### Syntax

**egress-statistics color *color* [end-point {*ipv4-address* | *ipv6-address*}]**

#### Context

[\[Tree\]](#) (show>router>segment-routing>sr-policies egress-statistics)

## Full Context

```
show router segment-routing sr-policies egress-statistics
```

## Description

This command displays the egress traffic statistics of the SR policy specified by its color and end-point.

## Parameters

### *color*

Displays the color that is configured for this SR policy.

**Values** 0 to 4294967295

### *ipv4-address* | *ipv6-address*

Displays the IPv4 or IPv6 address expressed in dotted decimal notation.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

## Platforms

All

## Output

The following output is an example of egress traffic statistics of the SR policy, and [Table 126: Show Egress Statistics Field Descriptions](#) describes the output fields.

### Output Example Show Router Segment Route Policy Egress Statistics

```
# show router segment-routing sr-policies egress-statistics color 20102011 end-point
10.8.100.12
=====
SR-Policies Egress Statistics
=====

Egress Statistics:

Color          : 20102011          Endpoint Addr   : 10.8.100.12
Segment-List   : 1
TunnelId       : 917548           BSID            : 180001
Pkt Count      : 0               Octet Count     : 0

Egress Statistics:

Color          : 20102011          Endpoint Addr   : 10.8.100.12
Segment-List   : 2
TunnelId       : 917548           BSID            : 180001
```

```

Pkt Count      : 0                      Octet Count    : 0
=====
#

show router segment-routing sr-policies egress-statistics color 10 end-point 3ffe::a14:102
=====
SR-Policies Egress Statistics
=====

Egress Statistics:

Color          : 10                      Endpoint Addr  : 3ffe::a14:102
Segment-List   : 1
TunnelId       : 917520                  BSID           : 100008
Pkt Count      : 3015                    Octet Count    : 313560
=====
    
```

Table 126: Show Egress Statistics Field Descriptions

Label	Description
Color	Indicates the color of the SR policy.
Endpoint Addr	Indicates the endpoint address of the SR policy.
Segment-List	Indicates the index of the segment list.
TunnelId	Indicates the tunnel identifier of the SR policy.
BSID	Indicates the binding SID value.
Pkt Count	Indicates the count of packets for the corresponding segment list.
Octet Count	Indicates the count of octets for the corresponding segment list.

## egress-statistics

### Syntax

**egress-statistics color** *color* [**end-point** {*ipv4-address* | *ipv6-address*}]

### Context

**[Tree]** (clear>router>segment-routing>sr-policies egress-statistics)

### Full Context

clear router segment-routing sr-policies egress-statistics

### Description

This command clears the egress traffic statistics of the SR policy specified by its color and end-point.

## Parameters

### **color**

Displays the color that is configured for this SR policy.

**Values** 0 to 4294967295

### **ipv4-address | ipv6-address**

Displays the IPv4 or IPv6 address expressed in dotted decimal notation.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

## Platforms

All

## egress-statistics

## Syntax

**egress-statistics color** [0..4294967295] **endpoint** *ip-address* | *ipv6-address* [**interval seconds**] [**repeat repeat**]

## Context

[\[Tree\]](#) (monitor>router>seg-rt>sr-policies egress-statistics)

## Full Context

monitor router segment-routing sr-policies egress-statistics

## Description

This command monitors SR Policy Egress Statistics.

## Parameters

### **ip-address**

Specifies the IPv4 address of the endpoint.

**Values** 64 characters maximum

### **ipv6-address**

Specifies the IPv6 address of the endpoint.

**Values** 64 characters maximum

**seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Platforms**

All

## 8.14 elmi

elmi

**Syntax**

elmi

**Context**

[\[Tree\]](#) (show elmi)

**Full Context**

show elmi

**Description**

This command displays Ethernet Link Management Interface (E-LMI) information.

[Table 127: Output Fields: show elmi](#) describes the output fields for the **show elmi** command.

*Table 127: Output Fields: show elmi*

Field	Description
Link Status	Status of the E-LMI protocol when the elmi mode is set to uni-n. Link Status will indicate up if E-LMI mode is set to "none".
T391	Pooling timer used by UNI-C. UNI-N will send the consecutive single EVC asynchronous status messages every (T391/10) rounded to the second interval.
T392	Pooling verification timer for UNI-N
N393	Status counter for UNI-N.

Field	Description
Rx Enq. Time	Last time a status inquiry message was received from UNI-C.
Rx Enq. Msg	Number of status inquiry messages received.
Rx Check Time	Last time a status inquiry E-LMI check message was received.
Rx Inv. SeqNum	Counts the number of E-LMI messages received with invalid sequence number.
Enq Timeouts	Counts the number of T392 timer expired.
Tx Status Time	Last time a status message was sent by UNI-N.
Tx Status Msg	Number of status messages sent by UNI-N.
Tx Check Time	Last time a status E-LMI check message was sent by UNI-N.
Tx Async Status Msg	Counter for single EVC asynchronous status messages sent by UNI-N.
Discard Msg	Counter for the status inquiry messages discarded due to errors.

### Platforms

All

## 8.15 encryption-keygroup

### encryption-keygroup

#### Syntax

**encryption-keygroup** *keygroup-id* [**spi** *spi*]

#### Context

**[Tree]** (show>grp-encryp encryption-keygroup)

#### Full Context

show group-encryption encryption-keygroup

#### Description

This command displays NGE information for a key group.

#### Parameters

##### **keygroup-id**

Specifies the key group identifier to use for the output display.

**Values** 1 to 15 or *keygroup-name* (up to 64 characters)

***spi***

Specifies the SPI to use for the output display.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of encryption key group information, and [Table 128: Show Encryption Key Group Output Fields](#) describes the fields.

**Output Example**

```

domain1>show>grp-encryp# encryption-keygroup 2
=====
Encryption Keygroup Configuration Detail
=====
Keygroup Id       : 2
Keygroup Name     : KG1_secure
Description       : Most_secure_KG
Authentication Algo: sha256
Encryption Algo   : aes128
Active Outbound SA : 6
Activation Time   : 04/20/2015 20:07:31
-----
Security Associations
-----
Spi              : 2
Install Time     : 04/20/2015 20:08:17
Key CRC         : 0x806fb970
Spi             : 6
Install Time     : 04/20/2015 19:43:40
Key CRC         : 0xa4f2d262
-----
Encryption Keygroup Forwarded Statistics
-----
Encrypted Pkts   : 0           Encrypted Bytes   : 0
Decrypted Pkts  : 0           Decrypted Bytes   : 0
-----
Encryption Keygroup Outbound Discarded Statistics (Pkts)
-----
Total Discard   : 0           Unsupported Uplink : 0
Enqueue Error   : 0           Other              : 0
-----
Encryption Keygroup Inbound Discarded Statistics (Pkts)
-----
Total Discard   : 0           Invalid Spi       : 0
Authentication Failure *: 0       Control Word Mismatch : 0
Padding Error   : 0           Enqueue Error    : 0
Other           : 0
-----
-----
SDP Keygroup Association Table
-----
SDP ID          Direction
-----
61              Inbound  Outbound
-----
Inbound Keygroup SDP Association Count: 1
Outbound Keygroup SDP Association Count: 1
    
```

```

-----
VPRN Keygroup Association Table
-----
VPRN SVC ID    Direction
-----
12             Inbound  Outbound
-----
Inbound Keygroup VPRN Association Count: 1
Outbound Keygroup VPRN Association Count: 1
-----
=====
* indicates that the corresponding row element may have been truncated.
domain1>show>grp-encryp#
    
```

```

domain1# show group-encryption encryption-keygroup 1 spi 1
=====
Encryption Keygroup Security Association Detail
=====
Keygroup Id      : 1                SPI Id          : 1
Install Time     : 06/16/2015 11:28:49
Key CRC          : 0x36e5af55
-----
Encryption Keygroup Security Association Forwarded Statistics
-----
Encrypted Pkts   : 1662534          Encrypted Bytes   : 837917136
Decrypted Pkts   : 1662333          Decrypted Bytes   : 837815832
-----
Encryption Keygroup Security Association Outbound Discarded Statistics (Pkts)
-----
Total Discard    : 0                Enqueue Error     : 0
Other            : 0
-----
Encryption Keygroup Security Association Inbound Discarded Statistics (Pkts)
-----
Total Discard    : 0                Authentication Failure : 0
Control Word Mismatch : 0          Padding Error      : 0
Enqueue Error    : 0                Other              : 0
=====
    
```

Table 128: Show Encryption Key Group Output Fields

Label	Description
<b>Encryption Keygroup Configuration Detail</b>	
Keygroup Id	The key group identifier
Keygroup Name	The key group name
Description	The key group description
Authentication Algo	The authentication algorithm used for the key group
Encryption Algo	The encryption algorithm used for the key group
Active Outbound SA	The active outbound SA for the key group
Activation Time	The date and time that the key group was activated



Label	Description
<b>Security Associations</b>	
Spi	The security parameter index for the SA in the key group
Install Time	The date and time that the SA was installed in the key group
Key CRC	The CRC for the key belonging to the SA
<b>Encryption Keygroup Forwarded Statistics</b>	
Encrypted Pkts	The number of encrypted packets forwarded by the key group
Encrypted Bytes	The number of encrypted bytes forwarded by the key group
Decrypted Pkts	The number of decrypted packets forwarded by the key group
Decrypted Bytes	The number of decrypted bytes forwarded by the key group
<b>Encryption Keygroup Outbound Discarded Statistics (Pkts)</b>	
Total Discard	The total number of outbound packets discarded by the key group
Unsupported Uplink	The total number of outbound packets discarded by the key group due to an unsupported uplink
Enqueue Error	The total number of outbound packets discarded by the key group due to an enqueueing error
Other	The total number of outbound packets discarded by the key group due to some other reason, such as an internal configuration error (for example, a key group that points to an SA, but the SA is not valid)
<b>Encryption Keygroup Inbound Discarded Statistics (Pkts)</b>	
Total Discard	The total number of inbound packets discarded by the key group
Invalid Spi	The total number of inbound packets discarded by the key group due to an invalid SPI
Authentication Failure *	The total number of inbound packets discarded by the key group due to an authorization failure
Control Word Mismatch	The total number of inbound packets discarded by the key group due to a control word (CW) mismatch between the encrypted (protected) CW in the ESP payload and the CW that is not encrypted

Label	Description
Padding Error	The total number of inbound packets discarded by the key group due to a padding error
Enqueue Error	The total number of inbound packets discarded by the key group due to an enqueueing error
Other	The total number of inbound packets discarded by the key group due to some other reason (for example, an incoming packet length is incorrect)
<b>SDP Keygroup Association Table</b>	
SDP ID	The SDP ID
Direction	The direction in which key group authentication and encryption occurs for traffic on the SDP
Inbound Keygroup SDP Association Count	The number of SDPs configured to use inbound SA
Outbound Keygroup SDP Association Count	The number of SDPs configured to use outbound SA
<b>VPRN Keygroup Association Table</b>	
VPRN SVC ID	The VPRN service identifier
Direction	The direction in which key group authentication and encryption occurs for traffic on the VPRN
Inbound Keygroup VPRN Association Count	The number of VPRNs configured to use inbound SA
Outbound Keygroup VPRN Association Count	The number of VPRNs configured to use outbound SA

## encryption-keygroup

### Syntax

**encryption-keygroup** *keygroup-id*  
**encryption-keygroup** *keygroup-id spi spi*

### Context

**[Tree]** (clear>grp-encryp encryption-keygroup)

### Full Context

clear group-encryption encryption-keygroup

## Description

This command clears NGE information for a key group.

## Parameters

### *keygroup-id*

Specifies the key group identifier.

**Values** 1 to 127, *keygroup-name* (up to 64 characters)

### *spi*

Specifies the SPI ID.

**Values** 1 to 127

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 8.16 end-sid

### end-sid

## Syntax

**end-sid** [mt {0 | 2}] [ **prefix** *ipv6-prefix[/prefix-length]*] [**adv-router** *system-id | hostname*] [ **algo** *algo-id*]

## Context

[\[Tree\]](#) (show>router>isis>srv6 end-sid)

## Full Context

show router isis segment-routing-v6 end-sid

## Description

This command displays IS-IS SRv6 End SIDs.

## Parameters

### *ipv6-prefix[/prefix-length]*

Displays routes only matching the specified *ip-address* and length.

**Values** *ipv6-prefix[/prefix]*: x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x: [0 to FFFF]H  
d: [0 to 255]D  
*prefix-length*: 1 to 128

***system-id | hostname***

Displays information for the specific IS-IS advertising router. The host name can be up to 38 characters.

***algo-id***

Displays information for the specified algorithm.

**Values** 0 to 255

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## 8.17 endpoint

### endpoint

**Syntax**

**endpoint** [*endpoint-name*]

**Context**

[\[Tree\]](#) (show>service>id endpoint)

**Full Context**

show service id endpoint

**Description**

This command displays service endpoint information.

**Parameters**

***endpoint-name***

Specifies the name of an existing endpoint for the service.

**Platforms**

All

**Output**

The following output is an example of service endpoint information.

**Output Example**

```
*A:ALA-48>config>service>epipe# show service id 6 endpoint
=====
Service 6 endpoints
=====
Endpoint name      : x
```

```
Revert time      : 0
Act Hold Delay   : 0
Tx Active        : none
-----
Members
-----
No members found.
=====
Endpoint name    : y
Revert time      : 0
Act Hold Delay   : 0
Tx Active        : none
-----
Members
-----
No members found.
=====
*A:ALA-48>config>service>epipe#
```

## endpoint

### Syntax

```
endpoint [{ip-address | ipv6-address}] [ detail]
endpoint [{ip-address | ipv6-address}] egress-stats
```

### Context

[\[Tree\]](#) (show>router>mpls>forwarding-policies endpoint)

### Full Context

```
show router mpls forwarding-policies endpoint
```

### Description

This command displays the MPLS forwarding policy endpoint information.

### Parameters

#### *ip-address*

Specifies the IPv4 address of the endpoint up to 64 characters.

#### *ipv6-address*

Specifies the IPv6 address of the endpoint up to 64 characters.

#### *detail*

Specifies detailed information for the endpoint.

#### *egress-stats*

Displays the egress statistics, if any, of all the instances of the specified forwarding policy.

### Platforms

All

## Output

Table 129: MPLS Endpoint Output Fields describes MPLS endpoint output fields.

Table 129: MPLS Endpoint Output Fields

Label	Description
Endpoint	Specifies the endpoint IP address.
Preference	Specifies the preference.
Policy Name	Specifies the MPLS forwarding policies binding label name.
Active	Specifies the active state (Y   N).
InactiveReason	Specifies the inactive reason.
Last Updated	Specifies the date and time of the last update.
Num Grps	Specifies the number of groups.
OperState	Specifies the operational state (up   down).
Metric	Specifies the metric value.
TTM Preference	Specifies the TTM preference value.
Revert Timer	Specifies the revert timer value.
Path Pref	Specifies the path preference.
Retry Count	Specifies the retry count.
Next Retry In	Specifies the next retry value.
Next-hop Group	Specifies the next-hop group.
Resolution Type	Specifies the resolution type (direct   indirect).
Oper State	Specifies the operational state (down   up).
Oper Down Reas*	Specifies the reason for being operationally down.
Num Revert	Specifies the number of reverts.
Num Failover	Specifies the number of failovers.
Next Revert In	Specifies the next revert interval.
Weight	Specifies the weight value.
Primary	Specifies the IP address of the primary next-hop.
Resolved	Specifies the resolved status (false   true).

Label	Description
Down Reason	Specifies the down reason.
Backup	Specifies the IP address of the backup next-hop.
StatsOperState	Specifies if a statistic index is allocated to the next-hop.
EgrStatsState	Specifies if all next-hops have a statistic index allocated.

### Output Example

```
A:Dut-C# show router mpls forwarding-policies endpoint detail
=====
Endpoint (Detail)
=====
Endpoint       : 10.20.1.2           Preference    : 255
Policy Name    : one
Active        : N
Last Updated   : 09/27/2018 22:51:26  InactiveReason : Not Applicable
Metric        : 0
Revert Timer   : 0
Retry Count    : 0
Nexthop Group  : 1
Oper State     : Down
Num Revert     : 0
Next Revert In : 0
Primary        : 10.10.3.2
Resolved      : False
Backup         : 10.10.12.2
Resolved      : False
Nexthop Group  : 2
Oper State     : Down
Num Revert     : 0
Next Revert In : 0
Primary        : 10.10.3.3
Resolved      : False
Backup         : 10.10.4.4
Resolved      : False
Down Reason    : Not Applicable
Down Reason    : Not Applicable
Resolution Type: direct
OperDownReason : Not Applicable
Num Failover   : 0
Weight        : 0
Weight        : 45
Down Reason    : Not Applicable
Down Reason    : Not Applicable
-----
*A:Dut-B# show router mpls forwarding-policies endpoint
=====
Endpoint Table
=====
Endpoint           Preference      Active
-----
10.20.1.5          2              Y
-----
No. of Tunnels: 1
```

```
show router mpls forwarding-policies endpoint 10.20.1.5 egress-stats
=====
Endpoint (Detail)
=====
Endpoint       : 10.20.1.5           Preference    : 255
Policy Name    : cc
EgrStatsState : Up
Next-hop Group : 1
  Primary nexthop : 10.10.5.5
  StatsOperState : Up
Aggr Pkts: 11000
Aggr Octets: 11550000
```

```
Backup nexthop : 10.10.11.4
StatsOperState : Up
Aggr Pkts: 11000                               Aggr Octets: 11550000
Next-hop Group : 2
Primary nexthop : 10.10.5.5
StatsOperState : Up
Aggr Pkts: 11000                               Aggr Octets: 11550000
Backup nexthop : 10.10.11.4
StatsOperState : Up
Aggr Pkts: 11000                               Aggr Octets: 11550000
Total Aggr :
Aggr Pkts: 44000                               Aggr Octets: 46200000
-----
=====
```

## 8.18 entry

### entry

#### Syntax

**entry** *entry-id*

#### Context

[\[Tree\]](#) (tools>perform>filter>ip-filter entry)

#### Full Context

tools perform filter ip-filter entry

#### Description

Commands in this context perform IP filter entry operations.

#### Parameters

***entry-id***

Specifies a particular entry ID.

**Values** 1 to 2097151

#### Platforms

All

### entry

#### Syntax

**entry** *entry-id*



## Context

[\[Tree\]](#) (tools>perform>filter>ipv6-filter entry)

## Full Context

tools perform filter ipv6-filter entry

## Description

Commands in this context perform IPv6 filter entry operations.

## Parameters

*entry-id*

Specifies a particular entry ID.

**Values** 1 to 2097151

## Platforms

All

## entry

## Syntax

**entry** *entry-id*

## Context

[\[Tree\]](#) (tools>perform>filter>mac-filter entry)

## Full Context

tools perform filter mac-filter entry

## Description

Commands in this context perform MAC filter entry operations.

## Parameters

*entry-id*

Specifies a particular entry ID.

**Values** 1 to 2097151

## Platforms

All

## 8.19 epipe

### epipe

#### Syntax

**epipe**

#### Context

[\[Tree\]](#) (show>service>id epipe)

#### Full Context

show service id epipe

#### Description

This command displays Epipe services associated with the B-VPLS service. The command only applies when the service is a B-VPLS.

#### Platforms

All

#### Output

The following output is an example of Epipe service information.

#### Output Example

```
*A:term17>show>service>id# epipe
=====
Related Epipe services for bVpls service 2000
=====
Epipe SvcId      Oper ISID      Admin      Oper
-----
100              100           Down       Down
-----
Number of Entries : 1
-----
*A:term17>show>service>id#
```

## 8.20 epipe-map-access-to-egress-port

### epipe-map-access-to-egress-port

#### Syntax

**epipe-map-access-to-egress-port service service-id [end-service service-id] | lag lag-id summary**

## Context

[\[Tree\]](#) (tools>dump epipe-map-access-to-egress-port)

## Full Context

tools dump epipe-map-access-to-egress-port

## Description

This command will display the egress port that will be used to transmit traffic associated with the displayed Epipe service(s). The information displayed shows the egress port for traffic traveling from SAP to egress SDP or SAP.

This command will support Epipe services with the following combinations:

- SAP to SDP (with no endpoint configuration)
- SAP to SAP (with or without an ICB)
- SAP to SDP using endpoints with 1 or 2 SDPs

The command can be executed by specifying either a service ID, service-ID range or an ingress LAG ID.

This command will not display the egress port for traffic traveling from the SDP to egress SAP. This command also does not work with services that use policers or shared queues and also does not support PBB services.

This command replaces the command tools dump epipe-map-to-network, which has been deprecated.

## Parameters

### ***service service-id***

Identifies the service ID for which the command will return the egress port. If used in conjunction with the end-service parameter, this value represent the beginning of the service ID range for which the command will be executed against.

**Values** 1 to 2148278316, *svc-name: 64 characters max*

### ***end-service service-id***

This parameter is used to identify the end of the service ID range for which the command will be executed against.

**Values** 1 to 2148278316, *svc-name: 64 characters max*

### ***lag-id***

This parameter caused the command to return the egress port for all service with SAPs associated with the specified LAG ID.

**Values** 1 to 800

## Platforms

All

## 8.21 epipe-sap-template

```
epipe-sap-template
```

### Syntax

```
epipe-sap-template
```

```
epipe-sap-template name
```

### Context

```
[Tree] (show>service>template epipe-sap-template)
```

### Full Context

```
show service template epipe-sap-template
```

### Description

This command displays Epipe SAP template information.

### Parameters

*name*

Specifies the Epipe SAP template name, up to 32 characters.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 8.22 error-codes

```
error-codes
```

### Syntax

```
error-codes
```

### Context

```
[Tree] (show>app-assure>http-redirect error-codes)
```

### Full Context

```
show application-assurance http-redirect error-codes
```

## Description

This command displays http-error-redirect error-codes.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of HTTP error redirect error code information, and [Table 130: Show Application Assurance HTTP Redirect Error Codes Output Fields](#) describes the fields.

## Output Example

```
*A:Dut-C>show application-assurance http-error-redirect error-codes
=====
Application-Assurance http-error-redirect error-codes
=====
Code      Description                                     Default custom-msg-size
-----
400      Bad Request                                     1024
401      Unauthorized                                    1024
402      Payment Required                               1024
403      Forbidden                                       1024
404      Not Found                                       1024
405      Method Not Allowed                             1024
406      Not Acceptable                                  1024
407      Proxy Authentication Required                  1024
408      Request Timeout                                1024
409      Conflict                                        1024
410      Gone                                           1024
411      Length Required                               1024
412      Precondition Failed                           1024
413      Payload Too Large                             1024
414      URI Too Long                                   1024
415      Unsupported Media Type                        1024
416      Range Not Satisfiable                         1024
417      Expectation Failed                            1024
421      Misdirected Request                           1024
422      Unprocessable Entity                           1024
423      Locked                                         1024
424      Failed Dependency                             1024
425      Too Early                                     1024
426      Upgrade Required                              1024
427      Unassigned                                    1024
428      Precondition Required                         1024
429      Too Many Requests                            1024
430      Unassigned                                    1024
431      Request Header Fields Too Large               1024
451      Unavailable For Legal Reasons                 1024
500      Internal Server Error                         1024
501      Not Implemented                               1024
502      Bad Gateway                                   1024
503      Service Unavailable                           1024
504      Gateway Timeout                              1024
505      HTTP Version Not Supported                   1024
506      Variant Also Negotiates                       1024
507      Insufficient Storage                          1024
508      Loop Detected                                 1024
509      Unassigned                                    1024
510      Not Extended                                  1024
511      Network Authentication Required               1024
```

```

730      Custom Error Code          1024
731      Custom Error Code          1024
735      Custom Error Code          1024
=====
    
```

Table 130: Show Application Assurance HTTP Redirect Error Codes Output Fields

Label	Description
Description	Describes the error
Default	Indicates what the default is for the error
custom-msg-size (Custom Message Size)	The size of the message

## error-codes

### Syntax

**error-codes**

### Context

[\[Tree\]](#) (show>app-assure>http-err-redirect error-codes)

### Full Context

show application-assurance http-error-redirect error-codes

### Description

This command displays HTTP error redirect error codes.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 8.23 error-counters

## error-counters

### Syntax

**error-counters**

### Context

[\[Tree\]](#) (tools>dump>test-oam>twamp>server error-counters)

## Full Context

```
tools dump test-oam twamp server error-counters
```

## Description

This command dumps various error counters related to TWAMP server and TWAMP test.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of various error counters related to TWAMP server and TWAMP test.

### Output Example

```
tools>dump>test-oam>twamp>server# error-counters
Dropped Connection Stats
-----
TCP connection closed           : 0
TCP connection error           : 0
Unexpected event                : 0
Error sending message          : 0
Error waiting for message      : 0
Connection not in a prefix     : 0
Max global limit               : 0
Max prefix limit               : 0
No mode specified              : 0
Unsupported mode                : 0
Invalid command                : 0
Stop-sessions with bad session count : 0
Connection timeout             : 0
Internal resource               : 0
Invalid zero SID                : 0
Invalid HMAC                    : 0
Dropped Connection States
-----
Idle                            : 0
Set-up-wait                     : 0
Started                         : 0
Active                          : 0
Process Start                   : 0
Process Stop                    : 0
Process TW-session              : 0
Rejected Session Stats
-----
Invalid address version: 0
Non-local destination          : 0
Bad type-p                     : 0
Padding too big                : 0
MBZ value is non-zero          : 0
SID is non-zero                : 0
Timeout too large              : 0
Max global sessions            : 0
Max prefix sessions            : 0
Socket error                   : 0
Source unreachable             : 0
Port in use                    : 0
Duplicate session              : 0
Internal resource               : 0
REFWAIT timeout                : 0
```

```
Dropped Test Packet Stats
-----
Packet wrong size      : 0
Wrong source address  : 0
Arrived before start time : 0
No Start-sessions     : 0
Invalid error estimate : 0
Error sending reply   : 0
Invalid Server Octets : 0
Invalid Symmetric MBZ : 0
```

## 8.24 errors

### errors

#### Syntax

**errors**

#### Context

[\[Tree\]](#) (clear>subscr-mgmt errors)

#### Full Context

clear subscriber-mgmt errors

#### Description

This command clears all errors in the circular buffer.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### errors

#### Syntax

**errors**

#### Context

[\[Tree\]](#) (show>subscr-mgmt errors)

#### Full Context

show subscriber-mgmt errors

#### Description

This command clears all errors in the circular buffer.



## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.25 es-pbr

```
es-pbr
```

### Syntax

```
es-pbr
```

### Context

[\[Tree\]](#) (show>service>id es-pbr)

### Full Context

```
show service id es-pbr
```

### Description

When a filter with an **action forward esi** is successfully added to a VPLS service and the PE receives an EVPN Auto-Discovery route for the configured ESI, this command displays the PBR VXLAN bindings auto-created, including the ESI, the VXLAN VTEP:VNI and the status of the binding.

### Platforms

All

### Output

#### Output Example

```
A:PE1# show service id 301 es-pbr
=====
L2 ES PBR
=====
ESI                               Users      Status
VTEP:VNI
-----
ff:00:00:00:00:00:00:00:01 1          Active
192.0.2.72:7272
-----
Number of entries : 1
=====
```

## 8.26 esa

esa

### Syntax

**esa** *esa-id* [**detail**]

**esa**

**esa detail**

### Context

[\[Tree\]](#) (show esa)

### Full Context

show esa

### Description

This command displays ESA details.

### Parameters

**detail**

Displays detailed ESA information.

*esa-id*

Specifies the ESA.

**Values** 1 to 16

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s

### Output

[Table 131: Show ESA Output Fields](#) describes the ESA output fields.

The following output is an example of ESA information.

### Output Example

```
A:node-2# show esa
=====
Extended Services Appliance Summary
=====
ESA  Description                               Admin  Oper  Health
     State                                     State  State
-----
1    1                                           up     up    OK
2    2                                           up     up    OK
```

The following output is an example of detailed ESA information.

### Output Example

```

=====
A:node-2# show esa detail
=====
ESA 1
=====
Description                : (Not Specified)
Admin State                 : up
Operational State          : up
Oper flags                  : none
IOM Host Port(s)           : 2/x1/1/c9/1
                           : 2/x1/1/c10/1

Hardware Health
  Overall Status            : OK
  Power Supply 1 Status    : OK
  Power Supply 2 Status    : OK
  Power Supply Redundancy  : Redundant
  Power Supply Mismatch Stat* : No-Mismatch
  Fan Status                : OK
  Fan Redundancy           : Redundant
  Temperature Status       : OK

Hardware Data
  System manufacturer      : HPE
  System product name     : ESA 400G AC
  System part number       : 3HE17699BA
  System serial number     : MXQ3210CRM
  Software Version        : TiMOS-H-0.0.I7505 hypervisor/esa Copyright (c)
                           : 2000-2023 Nokia. All rights reserved. All
                           : use subject to applicable license agreements.
                           : Built on Tue Sep 12 01:10:57 UTC 2023 by
                           : builder in /builds/00/I7505/panos/hypervisors

Time of last boot          : 2023/09/12 18:07:38 UTC
Total Cores available     : 62
Total Cores allocated     : 30
Total Cores remaining     : 32
Total Memory available    : 478 GB
Total Memory allocated    : 32 GB
Total Memory remaining    : 446 GB
Performance enabled       : yes
Export restricted         : no

NUMA Cell Topology
  NUMA Cell 0
    Cores Available       : 31
    Cores Allocated       : 30
    Cores Remaining       : 1
    Memory Available      : 239 GB
    Memory Allocated      : 32 GB
    Memory Remaining      : 207 GB
    Socket                : 0
    Host Port(i/f)       : 2/x1/1/c9/1 (eth0)
    Host Port(i/f)       : 2/x1/1/c10/1 (eth1)
  NUMA Cell 1
    Cores Available       : 31
    Cores Allocated       : 0
    Cores Remaining       : 31
    Memory Available      : 239 GB
    Memory Allocated      : 0 GB
    Memory Remaining      : 239 GB
    Socket                : 1
=====
    
```

\* indicates that the corresponding row element may have been truncated.

```
=====
ESA VMs
=====
```

ESA	VM	VM Type	Cores	Memory (GB)	Host-Port	Admin State	Oper State
1	1	aa	15	16	2/x1/1/c9/1	up	up/active
1	2	aa	15	16	2/x1/1/c10/1	up	booting

```
=====
```

```
=====
ESA 2
=====
Description                : (Not Specified)
Admin State                 : up
Operational State          : up
Oper flags                  : none
IOM Host Port(s)           : 1/1/c3/1
Hardware Health
  Overall Status            : OK
  Power Supply 1 Status     : OK
  Power Supply 2 Status     : OK
  Power Supply Redundancy   : Redundant
  Power Supply Mismatch Stat*: No-Mismatch
  Fan Status                : OK
  Fan Redundancy            : Redundant
  Temperature Status        : OK
Hardware Data
  System manufacturer       : HPE
  System product name       : ESA 100G-2 AC
  System part number        : 3HE19113AA
  System serial number      : MXQ3210CB9
  Software Version          : TiMOS-H-0.0.I7505 hypervisor/esa Copyright (c)
                             2000-2023 Nokia. All rights reserved. All
                             use subject to applicable license agreements.
                             Built on Tue Sep 12 01:10:57 UTC 2023 by
                             builder in /builds/00/I7505/panos/hypervisors
Time of last boot           : 2023/09/12 19:02:51 UTC
Total Cores available       : 19
Total Cores allocated       : 15
Total Cores remaining       : 4
Total Memory available      : 113 GB
Total Memory allocated      : 64 GB
Total Memory remaining      : 49 GB
Performance enabled        : yes
Export restricted           : no
NUMA Cell Topology
  NUMA Cell 0
    Cores Available         : 19
    Cores Allocated         : 15
    Cores Remaining         : 4
    Memory Available        : 113 GB
    Memory Allocated        : 64 GB
    Memory Remaining        : 49 GB
    Socket                  : 0
    Host Port(i/f)          : 1/1/c3/1 (eth0)
=====
```

\* indicates that the corresponding row element may have been truncated.

```
=====
ESA VMs
=====
```

ESA	VM	VM Type	Cores	Memory (GB)	Host-Port	Admin State	Oper State
2	1	aa	15	64	1/1/c3/1	up	up

The following output is an example of information about a specific ESA.

**Output Example**

```
A:node-2# show esa 1
=====
ESA 1
=====
Description                : (Not Specified)
Admin State                 : up
Operational State          : up
Oper flags                  : none
IOM Host Port(s)           : 2/x1/1/c9/1
                           : 2/x1/1/c10/1
Hardware Health
  Overall Status            : OK
Hardware Data
  System manufacturer       : HPE
  System product name       : ESA 400G AC
  System part number        : 3HE17699BA
  System serial number      : MXQ3210CRM
  Software Version          : TiMOS-H-0.0.I7507 hypervisor/esa Copyright (c)
                           : 2000-2023 Nokia. All rights reserved. All
                           : use subject to applicable license agreements.
                           : Built on Thu Sep 14 01:12:52 UTC 2023 by
                           : builder in /builds/00/I7507/panos/hypervisors
Time of last boot           : 2023/09/14 15:25:33 UTC
Total Cores available       : 62
Total Cores allocated       : 30
Total Cores remaining       : 32
Total Memory available      : 478 GB
Total Memory allocated      : 32 GB
Total Memory remaining      : 446 GB
Performance enabled         : yes
Export restricted           : no
=====

ESA VMs
=====
ESA  VM   VM Type  Cores  Memory  Host-Port  Admin  Oper
      (GB)                               State   State
-----
1    1    aa       15    16     2/x1/1/c9/1  up     up/active
1    2    aa       15    16     2/x1/1/c10/1 up     up/active
=====
```

The following output is an example of detailed information about a specific ESA.

**Output Example**

```
A:node-2# show esa 2 detail
=====
ESA 2
=====
Description                : (Not Specified)
Admin State                 : up
=====
```

```
Operational State      : up
Oper flags            : none
IOM Host Port(s)     : 1/1/c3/1
Hardware Health
  Overall Status      : OK
  Power Supply 1 Status : OK
  Power Supply 1 Temperature : 40 Degrees C.
  Power Supply 1 Voltage : 114 Volts
  Power Supply 1 Output  : 178 Watts
  Power Supply 1 Max Power : 181 Watts
  Power Supply 2 Status : OK
  Power Supply 2 Temperature : 45 Degrees C.
  Power Supply 2 Voltage : 115 Volts
  Power Supply 2 Output  : 199 Watts
  Power Supply 2 Max Power : 201 Watts
  Power Supply Redundancy : Redundant
  Power Supply Mismatch Stat* : No-Mismatch
  Fan Status         : OK
  Fan Redundancy    : Redundant
  CPU 1 Temperature  : 73 Degrees C.
  CPU 1 Temperature Threshold: 96 Degrees C.
  CPU 2 Temperature  : 60 Degrees C.
  CPU 2 Temperature Threshold: 96 Degrees C.
  NIC 1 Temperature  : 94 Degrees C.
  NIC 1 Temperature Threshold: 105 Degrees C.
  NIC 2 Temperature  : 84 Degrees C.
  NIC 2 Temperature Threshold: 105 Degrees C.
  Temperature Status : OK

Hardware Data
  System manufacturer : HPE
  System product name  : ESA 100G-2 AC
  System part number   : 3HE19113AA
  System serial number : MXQ3210CB9
  Software Version     : TiMOS-H-0.0.I7505 hypervisor/esa Copyright (c)
                        2000-2023 Nokia. All rights reserved. All
                        use subject to applicable license agreements.
                        Built on Tue Sep 12 01:10:57 UTC 2023 by
                        builder in /builds/00/I7505/panos/hypervisors

  Time of last boot   : 2023/09/12 19:02:51 UTC
  Total Cores available : 19
  Total Cores allocated : 15
  Total Cores remaining : 4
  Total Memory available : 113 GB
  Total Memory allocated : 64 GB
  Total Memory remaining : 49 GB
  Performance enabled  : yes
  Export restricted    : no
  NUMA Cell Topology
    NUMA Cell 0
      Cores Available   : 19
      Cores Allocated   : 15
      Cores Remaining   : 4
      Memory Available  : 113 GB
      Memory Allocated  : 64 GB
      Memory Remaining  : 49 GB
      Socket           : 0
      Host Port(i/f)   : 1/1/c3/1 (eth0)
```

=====  
\* indicates that the corresponding row element may have been truncated.  
=====

=====  
ESA VMs  
=====

ESA	VM	VM Type	Cores	Memory (GB)	Host-Port	Admin State	Oper State
2	1	aa	15	64	1/1/c3/1	up	up

Table 131: Show ESA Output Fields

Label	Description
ESA	ESA identification number
Description	Description for the ESA
Admin State	up — Administratively up
	down — Administratively down
Operational State	up — Operationally up
	down — Operationally down
	booting
	failed
	provisioned
	unprovisioned
	fwUpgrade — Firmware upgrade
Oper flags	Operational flag of the ESA
IOM Host Port(s)	IOM host port or ports in <i>slot/mda/port</i> format
<b>Hardware Health</b>	
Overall Status	Overall ESA server hardware status
	Unknown — ESA status not reported, ESA not connected or not booted yet
	OK — Normal
	Degraded — Aligns with flashing amber of the health LED
	Critical — Aligns with flashing red of the health LED
	Unsupported — ESA hardware status reporting is unsupported by the ESA
Power Supply Status	Current status of the power supply
Power Supply Temperature	Current temperature detected by the specific hardware assembly

Label	Description
Power Supply Voltage	Line input voltage, in volts
Power Supply Output	Current average power, in watts
Power Supply Max Power	Maximum power draw seen since power on, in watts
Power Supply Redundancy	Redundant power supply in use. In case of failure of one power supply, the server continues to operate without issue. All variants of the ESA servers come with 2 power supplies
	Unknown — The iLO firmware has not received device status information. After the iLO is reset when the server is powered off, some subsystems display the status Unknown. The iLO cannot update the status for these subsystems when the server is powered off.
	Redundant — There is a backup component for the device
	Non-redundant — There is no backup component for the device
Power Supply Mismatch Stat*	Whether different types power supplies are connected to the server
	true — Different types of power supplies are connected to the server
	false — The same types of power supplies are connected to the server
Fan State	Fan status as reported by the ESA server
	Unknown — Fan status not reported, ESA not connected or not booted yet
	OK — Normal
	Degraded — One or more fan is degraded while the system is powered on
	Critical — One or more fan has failed while the system is powered on
Fan Redundancy	Redundant fans in use. In case of failure of one or more fans, the server continues to operate without any issue.
	Unknown — The iLO firmware has not received device status information. After the iLO is reset when the server is powered off, some subsystems display the status Unknown. The iLO cannot update the status for these subsystems when the server is powered off.



Label	Description
	Redundant — All 7 backup fans are running
	Non-redundant — One or more fans have failed but at least one fan is running
	Failed — All fans have failed
CPU Temperature	CPU temperature as reported by the ESA
CPU Temperature Threshold	CPU temperature caution threshold as reported by the ESA A temperature threshold of 0 indicates that this functionality is not supported or cannot be retrieved from the ESA. This information is not output for ESA 400G rev AA or AB.
NIC Temperature	NIC temperature as reported by the ESA A temperature of 0 indicates that this functionality is not supported or not possible to retrieve from the ESA.
NIC Temperature Threshold	NIC temperature caution threshold as reported by the ESA A temperature threshold of 0 indicates that this functionality is not supported or cannot be retrieved from the ESA.
Temperature Status	Temperature status as reported by the ESA server
	Ok — Temperature within normal operating range
	Degraded — Temperature is outside the normal operating range
	Failed — Temperature exceeded configured range on the ESA
Hardware Data	Detailed hardware data about the ESA
NUMA Cell Topology	Number of cores, amount of memory, and Ethernet ports available to the NUMA cell
VM	VM identification number
VM Type	VM type (aa, bb, or tunnel)
Cores	Number of cores of the ESA-VM
Memory (GB)	Total memory on the ESA-VM

## esa

### Syntax

**esa** *esa-id*

### Context

[\[Tree\]](#) (clear esa)

### Full Context

clear esa

### Description

This command clears the statistics or status pertaining to the specified ESA.

### Parameters

**esa-id**

Specifies the ESA.

**Values** 1 to 16

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s

## 8.27 esa-vm

esa-vm

### Syntax

esa [esa-id/vm-id] [ **detail**]

### Context

[\[Tree\]](#) (show esa-vm)

### Full Context

show esa-vm

### Description

This command displays ESA-VM details.

### Parameters

**esa-id**

Specifies the ESA.

**Values** 1 to 16

**vm-id**

Specifies the VM.

**Values** 1 to 4

**detail**

Specifies the detailed ESA-VM information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s

**Output**

The following are output examples for this command.

**Output Example**

```
*A:Dut-A# show esa-vm 1/1 detail
=====
ESA      VM      VM Type  Cores   Memory  Admin  Oper
      (GB)  State    State
-----
1        1      aa       23      64      up     up/active
=====
ESA/VM 1/1
=====
Description      : (Not Specified)
IOM Host Port    : 1/1/c1/1
Software Version : TiMOS-M-0.0.I6237 esav-aa/esavm Nokia 7xxx ESAV Copyright
                  (c) 2000-2020 Nokia.
                  All rights reserved. All use subject to applicable
                  license agreements.
                  Built on Sun Apr 5 18:08:04 PDT 2020 by builder in /
                  builds/c/00/I6237/panos/main/sros
Time of last boot : 2020/04/06 20:36:12 UTC
Oper flags       : none
=====
VM Utilization
=====
Virtual          Virtual          15min          All-time
Core Role        Core Id          Current %      Average %      Peak %
-----
Mgmt-0           1                8.65           5.91           8.83
Mgmt-1           2                6.83           5.83           8.84
Mgmt-2           3                8.22           5.69           8.22
Mgmt-3           4                8.58           5.96           9.52
Worker-0         5                27.18          15.56          27.18
Worker-1         6                27.70          15.81          27.70
Worker-2         7                27.79          15.88          27.79
Worker-3         8                27.83          15.88          27.83
Worker-4         9                28.05          16.01          28.05
Worker-5         10               28.04          15.98          28.04
Worker-6         11               28.05          16.04          28.05
Worker-7         12               28.09          16.02          28.09
Worker-8         13               28.00          15.99          28.00
Worker-9         14               28.05          15.99          28.05
Worker-10        15               27.82          15.89          27.82
Worker-11        16               27.83          15.87          27.83
Worker-12        17               27.84          15.88          27.84
Worker-13        18               27.79          15.83          27.79
Worker-14        19               27.83          15.91          27.83
Worker-15        20               27.85          15.90          27.85
```

Worker-16	21	27.99	15.98	27.99
Worker-17	22	28.09	16.03	28.09
Worker-18	23	28.00	16.00	28.00
Worker-19	24	27.97	15.95	27.97
Worker-20	25	27.88	15.92	27.88
Worker-21	26	27.91	15.93	27.91
Worker-22	27	27.80	15.89	27.80
Worker-23	28	27.77	15.84	27.77
Worker-24	29	27.78	15.86	27.78
Worker-25	30	27.82	15.86	27.82
Worker-26	31	27.93	15.93	27.93
Worker-27	32	27.90	15.91	27.90
Worker-28	33	27.97	15.98	27.97
Worker-29	34	28.44	16.19	28.44
Worker-30	35	28.22	16.13	28.22
Worker-31	36	28.28	16.13	28.28
Worker-32	37	28.08	16.05	28.08
Worker-33	38	28.15	16.06	28.15
Worker-34	39	27.90	15.92	27.90
Worker-35	40	27.50	15.68	27.50
Worker-36	41	27.48	15.70	27.48
Worker-37	42	27.57	15.72	27.57
Idle-0	43	0.00	0.00	0.00
Scheduler-0	44	41.40	24.36	41.40
Idle-1	45	0.00	0.00	0.00
Nic-0	46	57.60	33.47	57.60

Table 132: Show ESA-VM Output Fields describes the ESA-VM output fields.

### Output Example

```
*A:Dut-B# show esa-vm 6/1
=====
ESA   VM   VM Type  Cores  Memory  Admin  Oper
      (GB)  State   State
-----
6     1    aa       4      6       up     up
=====
ESA/VM 6/1
=====
Description      : (Not Specified)
IOM Host Port    : 1/1/2
Software Version : TiMOS-M-0.0.I6015 esav-aa/esavm Nokia 7xxx ESAV Copyright
                  (c) 2000-2019 Nokia.
                  All rights reserved. All use subject to applicable
                  license agreements.
                  Built on Mon Aug 26 18:04:52 PDT 2019 by builder in /
                  builds/c/00/I6015/panos/main
Time of last boot : 2019/08/27 15:40:54 UTC
Oper flags       : none
=====
```

```
*A:Dut-B# show esa-vm 6/2
=====
ESA   VM   VM Type  Cores  Memory  Admin  Oper
      (GB)  State   State
-----
6     2    tunnel  4      6       up     up
=====
```

```

ESA/VM 6/2
=====
Description      : (Not Specified)
IOM Host Port   : 1/1/2
Software Version : TiM0S-M-0.0.I6015 esav-tunnel/esavm Nokia 7xxx ESAV
                  Copyright (c) 2000-2019 Nokia.
                  All rights reserved. All use subject to applicable
                  license agreements.
                  Built on Mon Aug 26 18:04:52 PDT 2019 by builder in /
                  builds/c/00/I6015/panos/main
Time of last boot : 2019/08/27 15:40:51 UTC
Oper flags       : none
=====
    
```

\*A:Dut-B# show esa-vm 6/3

```

=====
ESA      VM      VM Type   Cores    Memory   Admin   Oper
                   State    (GB)    State    State
-----
6         3         bb         4        16       up      up
=====
    
```

```

ESA/VM 6/3
=====
Description      : (Not Specified)
IOM Host Port   : 1/1/2
Software Version : TiM0S-M-0.0.I6015 esav-bb/esavm Nokia 7xxx ESAV Copyright
                  (c) 2000-2019 Nokia.
                  All rights reserved. All use subject to applicable
                  license agreements.
                  Built on Mon Aug 26 18:04:52 PDT 2019 by builder in /
                  builds/c/00/I6015/panos/main
Time of last boot : 2019/08/27 15:41:00 UTC
Oper flags       : none
=====
    
```

Table 132: Show ESA-VM Output Fields

Label	Description
ESA	The ESA identification number
VM	The VM identification number
VM Type	The VM type (aa, bb, or tunnel)
Cores	The number of cores of the ESA-VM
Memory (GB)	The memory on the ESA-VM
Admin State	up — Administratively up
	down — Administratively down
Operational State	up — Operationally up
	down — Operationally down
	booting

Label	Description
	failed
	provisioned
	unprovisioned
IOM Host Port	The IOM host port in <i>slot/mda/port</i> format
Oper flags	The operational flags for the ESA-VM
Virtual Core Role	The virtual core role (Mgmt-#, Worker-#, Idle-#, Scheduler-#, Nic-#)
Virtual Core Id	The Virtual Core identification number
Current %	The current processing load of the virtual core
15min Average %	The 15 minute average processing load of the virtual core
All-time Peak %	The all-time peak processing load of the virtual core

## esa-vm

### Syntax

**esa-vm** [*esa-id/vm-id*]

### Context

[\[Tree\]](#) (clear esa-vm)

### Full Context

clear esa-vm

### Description

This command clears the statistics or status pertaining to the specified ESA-VM.

### Parameters

#### **esa-id**

Specifies the ESA.

**Values** 1 to 16

#### **vm-id**

Specifies the VM.

**Values** 1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s

## 8.28 est-profile

### est-profile

#### Syntax

**est-profile** [*name*]

#### Context

[\[Tree\]](#) (show certificate est-profile)

#### Full Context

show certificate est-profile

#### Description

This command displays EST profile information. If a profile name is not specified, the command displays information about all the EST profiles.

#### Parameters

*name*

Specifies an existing EST profile name, up to 32 characters.

#### Platforms

All

#### Output

The following output is an example of the **show certificate est-profile** command

#### Output Example

```
*A:cses-V27# show certificate est-profile
=====
EST Profile          Server
                   Address:Port
-----
No. of EST Profiles: 0
=====
```

## 8.29 eth

eth

### Syntax

eth

### Context

[\[Tree\]](#) (tools>perform>service>id>loopback eth)

### Full Context

tools perform service id loopback eth

### Description

Commands in this context configure a loopback on Ethernet SAPs or MPLS SDP bindings.

### Platforms

All

## 8.30 eth-cfm

eth-cfm

### Syntax

eth-cfm

### Context

[\[Tree\]](#) (show eth-cfm)

### Full Context

show eth-cfm

### Description

Commands in this context display eth-cfm information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS



## eth-cfm

### Syntax

eth-cfm

### Context

[\[Tree\]](#) (clear eth-cfm)

### Full Context

clear eth-cfm

### Description

Commands in this context display CFM information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## eth-cfm

### Syntax

eth-cfm

### Context

[\[Tree\]](#) (tools>dump eth-cfm)

### Full Context

tools dump eth-cfm

### Description

Commands in this context configure debugging for Ethernet Connectivity Fault Management.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## eth-cfm

### Syntax

eth-cfm

## Context

[\[Tree\]](#) (monitor eth-cfm)

## Full Context

monitor eth-cfm

## Description

Commands in this context monitor statistics for Ethernet connectivity fault management.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## eth-cfm

## Syntax

eth-cfm

## Context

[\[Tree\]](#) (show>service>sdp-using eth-cfm)

## Full Context

show service sdp-using eth-cfm

## Description

Commands in this context display SDP binding information for a specific ETH-CFM.

## Platforms

All

## eth-cfm

## Syntax

eth-cfm [tunnel *tunnel-id*] [detail]

## Context

[\[Tree\]](#) (show>lag eth-cfm)

## Full Context

show lag eth-cfm

## Description

This command displays ETH-CFM information.

## Parameters

### *tunnel-id*

Filters ETH-CFM MEP information to one tunnel.

**Values** 1 to 4094

### **detail**

Displays detailed information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## eth-cfm

## Syntax

**eth-cfm** [**detail**]

## Context

[\[Tree\]](#) (show>port>ethernet eth-cfm)

## Full Context

show port ethernet eth-cfm

## Description

This command displays ETH-CFM information.

## Parameters

### **detail**

Displays detailed information.

## Platforms

All

## 8.31 eth-cfm-monitoring

## eth-cfm-monitoring

## Syntax

**eth-cfm-monitoring** [{**service-id** *service-id* **sap-id** *sap-id*} | {**service-id** *service-id* **sdp-id** *sdp-id:vc-id*}]

## Context

[\[Tree\]](#) (show>system>security>cpu-protection eth-cfm-monitoring)

## Full Context

show system security cpu-protection eth-cfm-monitoring

## Description

This command displays sources exceeding their eth-cfm-monitoring rate limit.

## Parameters

### *service-id*

Specifies the service ID.

**Values** 1 to 2148278317, svc-name up to 64 characters in length

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## eth-cfm-monitoring

## Syntax

eth-cfm-monitoring

## Context

[\[Tree\]](#) (clear>cpu-protection eth-cfm-monitoring)

## Full Context

clear cpu-protection eth-cfm-monitoring

## Description

This command clears records of flows exceeding the ETH-CFM monitoring rate limit.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## 8.32 eth-ring

### eth-ring

#### Syntax

**eth-ring**

#### Context

**[Tree]** (tools>perform eth-ring)

#### Full Context

tools perform eth-ring

#### Description

This command performs Ethernet ring operations.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### eth-ring

#### Syntax

**eth-ring [status]**

**eth-ring [ring-index] hierarchy**

**eth-ring ring-index [path {a | b}]**

#### Context

**[Tree]** (show eth-ring)

#### Full Context

show eth-ring

#### Description

This command displays Ethernet Ring information.

#### Parameters

##### **status**

Specifies to display an Ethernet Ring status summary

##### **ring-index**

Specifies an Ethernet Ring index

**Values** 1 to 128

**hierarchy**

Specifies to display Ethernet Ring hierarchical relationships

**path**

Specifies to show information for a specific path

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## eth-ring

**Syntax**

**eth-ring** *ring-index* [ **clear**]

**Context**

[\[Tree\]](#) (tools>dump eth-ring)

**Full Context**

tools dump eth-ring

**Description**

This command displays Ethernet Ring information.

**Parameters**

***ring-index***

Specifies an Ethernet Ring index.

**Values** 1 to 128

**clear**

Keyword to clear stored information for the specified Ethernet Ring.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 8.33 eth-sat

### eth-sat

#### Syntax

**eth-sat** [*sat-id*]

#### Context

[\[Tree\]](#) (show>system>satellite eth-sat)

#### Full Context

show system satellite eth-sat

#### Description

This command displays information about configured Ethernet satellites. If a *sat-id* is specified, this command displays information only about the specified Ethernet satellite.

#### Parameters

***sat-id***

Specifies the Ethernet satellite chassis.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of Ethernet satellite information.

#### Output Example

```
A:Dut-A# show system satellite eth-sat 1
=====
Satellite Information
=====
SatID      Provisioned Type          Admin   Oper
           Equipped Type (if different) State   State
-----
esat-1     es48-1gb-sfp              up      up
Description      : (Not Specified)
MAC Address       : e4:81:84:24:2e:e5
Software Repository : repl
SyncE             : Disabled
Client-Down-Delay : Disabled | 5-1800sec
Hardware Data
  Platform type   : N/A
  Part number     : 82-0825-01
  CLEI code       :
  Serial number   : 01154100020
  Manufacture date :
  Manufacturing deviations : (Not Specified)
```

```

Manufacturing assembly number :
Administrative state           : up
Operational state             : up
Temperature                    : 51C
Temperature threshold         : 85C
Software boot (rom) version   : X-9.0.S222 on Thu Feb 16 03:29:00 IST 20xx
                               by builder
Software version               : TiMOS-B-8.0.R9 both/hops Nokia SAS-Sx
                               46F2C4SFP+ 7210 Copyright (c) 2000-2020
                               Nokia.
                               All rights reserved. All use subject to
                               applicable license agreements.
                               Built on Mon Oct 31 10:10:30 IST 2020 by
                               builder in /home/builder/8.0B1/R9/panos/
                               main
Time of last boot              : 2020/02/28 13:02:41
Current alarm state            : alarm cleared
Base MAC address               : e4:81:84:24:2e:e5
=====

*A:Dut-A>config>system>sat>eth-sat# /show system satellite eth-sat 1
=====
Satellite Information
=====
SatID      Provisioned Type          Admin      Oper
           Equipped Type (if different)  State      State
-----
esat-1     es48-1gb-sfp              up         up
Description : (Not Specified)
MAC Address  : 8c:f7:73:cc:ca:61
Software Repository : repl
SyncE       : Disabled
PTP-TC      : Disabled
Client-Down-Delay : Disabled
Console Access : Enabled
Port-Template : (Not Specified)
    
```

## eth-sat

### Syntax

**eth-sat** *sat-id*

### Context

**[Tree]** (clear>system>satellite eth-sat)

### Full Context

clear system satellite eth-sat

### Description

Commands in this context clear Ethernet satellite information.



## Parameters

### *sat-id*

Specifies the Ethernet satellite ID.

**Values** 1 to 20

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 8.34 eth-seg

### eth-seg

## Syntax

**eth-seg** [**hunt** | **detail**] [**rd** *rd*] [**community** *comm-id*] [**originator-ip** *ip-address* | *ipv6-address*] [**next-hop** *next-hop*] [**esi** *esi*] [**aspath-regex** *reg-exp*]

## Context

[\[Tree\]](#) (show>router>bgp>routes>evpn eth-seg)

## Full Context

show router bgp routes evpn eth-seg

## Description

This command displays BGP-EVPN Ethernet Segment (ES) routes.

## Parameters

### **hunt**

Displays entries for the specified route.

### **detail**

Displays detailed information.

### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val* | *2byte-asnumber:ext-comm-val* | *4byte-asnumber:comm-val*

### **comm-id**

Specifies community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm*]  
where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type*:{ *ip-address:comm-val1* | *as-number1:comm-val2* | *as-number2:comm-val1* }  
where:
  - *as-number1* — 0 to 65535
  - *comm-val1* — 0 to 65535
  - **type** — target, origin
  - *ip-address* — a.b.c.d
  - *comm-val2* — 0 to 4294967295
  - *as-number2* — 0 to 4294967295
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** |

***ip-address* | *ipv6-address***

Specifies the IPv4 or IPv6 originator address, up to 64 characters.

***next-hop***

Specifies the IPv4 or IPv6 BGP next-hop address.

Values		
	ipv4-address:	a.b.c.d
	ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 to FFFF]H
		d: [0 to 255]D

***esi***

Specifies a 10-byte ESI by which to filter the displayed information. For example, ESI-0 | ESI-MAX or 00-11-22-33-44-55-66-77-88-99 with any of these separators('-',':',';')

***reg-exp***

Displays routes matching the specified regular expression, up to 80 characters.

**Platforms**

All

## 8.35 eth-tunnel

### eth-tunnel

#### Syntax

**eth-tunnel** [**group** *tunnel-group-name*] [**vc-id** *vc-id*]

#### Context

[\[Tree\]](#) (show>router>l2tp eth-tunnel)

#### Full Context

show router l2tp eth-tunnel

#### Description

This command displays information about configured L2TPv3 Ethernet tunnels. These Ethernet tunnels are the L2TPv3 sessions setup between the local private L2 SAP and the far end device.

If this command is executed without any parameters, then a list of all configured Ethernet tunnels are displayed.

If this command is executed with a tunnel group name or a VC-ID, then a detailed view of the associated Ethernet tunnel is displayed.

#### Parameters

##### ***tunnel-group-name***

Specifies the configured tunnel group name used for the associated Ethernet tunnel.

##### ***vc-id***

Specifies the VC ID for the L2TPv3 Ethernet tunnel.

**Values** 0 to 4294967295

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of L2TPv3 Ethernet tunnel information

#### Output Example

```
A:Dut-A# show router 200 l2tp eth-tunnel
=====
L2TPv3 Ethernet Tunnel Summary
=====
Tunnel Group name                               VC ID
-----
v3-group-1                                       100
-----
```

```
No. of ethernet tunnels: 1
=====
A:Dut-A# show router 200 l2tp eth-tunnel group "v3-group-1"
=====
L2TPv3 Ethernet Tunnel Status
=====
Group Name       : v3-group-1
VC ID           : 100
Local Conn ID   : 221122308
Ctrl Conn ID    : 221118464
Matches Cfg     : true
Down Reason     : N/A
Reconnect Time (s) : N/A
Remaining Time (s) : N/A
SAP ID         : tunnel-1.private:100
SAP Service ID  : 100
-----
No. of ethernet tunnels: 1
=====
```

## eth-tunnel

### Syntax

**eth-tunnel**

**eth-tunnel** {*aps* | *status*}

**eth-tunnel** *tunnel-index* [*path path-index*] [*detail*]

### Context

[\[Tree\]](#) (show eth-tunnel)

### Full Context

show eth-tunnel

### Description

This command displays Ethernet tunnel information. Any data SAP missing a tag for a defined path has the EthTunTagMismatch flag generated. In the example provided below, SAP eth-tunnel-1:1 does not have the tag for path 2 configured. Therefore, it is operationally down with the reason indicated by the EthTunTagMismatch flag.

### Parameters

#### **aps**

Shows APS Ethernet tunnel information.

#### **status**

Shows Ethernet tunnel status information.

#### ***tunnel-index***

Specifies the tunnel index.

**Values** 1 to 1024

**path-index**

Specifies the path index.

**Values** 1 to 16

**detail**

Displays detailed information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output is an example of Ethernet tunnel information, and [Table 133: Output Fields: show eth-tunnel](#) describes the output fields.

**Output Example: show eth-tunnel**

```
*A:PE-E# show eth-tunnel
=====
Ethernet Tunnel Groups
=====
Tunnel Admin Oper Protection Active Paths
ID State State Type 1 2 3 4 5 6 7 8
-----
1 Up Up g.8031-1to1 x 2
2 Up Up g.8031-1to1 1 x
=====
*A:PE-E#
*A:PE-E# show eth-tunnel aps
=====
Ethernet Tunnel APS Groups
=====
Tunnel Admin Oper Working Path Path Active Rx PDU
ID State State Protecting Path State Path Tx PDU
-----
1 Up Up 1 - 1/1/2 1 Down No BF010100 ( SF)
2 - 2/1/2 1 Up Yes BF010100 ( SF)
2 Up Up 1 - 2/1/2 2 Up Yes 0F000000 ( NR)
2 - 1/1/2 2 Down No EF000000 (SF-P)
=====
*A:PE-E#
*A:PE-E# show eth-tunnel 1
=====
Ethernet Tunnel Group 1 Information
=====
Description : Eth Tunnel
IfIndex : 1476395009
Admin State : Up Oper State : Up
Protection Type : G.8031-1to1 Max Revert Time : 1 seconds
MAC Address : 00:1a:f0:44:d2:03 Time to Revert : N/A
Hold Down Time : 0 centiseconds
-----
Ethernet Tunnel Group APS Information
-----
APS PDU Rx : BF010100 ( SF) Switchover Time : 05/28/2009 10:10:17
APS PDU Tx : BF010100 ( SF)
```

```

Defect Status      :
-----
Ethernet Tunnel Group Path Summary
-----
Path ID  Member  Control-Tag  Precedence  Admin/Oper  Active  Mgmt
-----
   1     1/1/2    1            primary     Up/Down     No      Yes
   2     2/1/2    1            secondary   Up/Up       Yes     No
=====
*A:PE-E#

*A:PE-E# show eth-tunnel 1 path 1
=====
Ethernet Tunnel Group 1 Path Information
=====
Description      : (Not Specified)
Member           : 1/1/2           Control-Tag      : 1
Admin State      : Up              Oper State       : Down
-----
Ethernet Tunnel Group Path APS Information
-----
Active Count     : 2              Active Time      : 0d 00:12:09
-----
Eth-Cfm Configuration Information
-----
Md-index         : 1              Direction        : Down
Ma-index         : 1              Admin             : Enabled
MepId           : 1              CCM-Enable       : Enabled
LowestDefectPri : macRemErrXcon  HighestDefect    : defRemoteCCM
Defect Flags     : bDefRemoteCCM
Mac Address      : 00:16:4d:c0:c1:ca  ControlMep       : True
=====
*A:PE-E#

*A:PE-E# show eth-tunnel 1 path 1 detail
=====
Ethernet Tunnel Group 1 Detailed Path Information
=====
Description      : (Not Specified)
Member           : 1/1/2           Control-Tag      : 1
Admin State      : Up              Oper State       : Down
-----
Ethernet Tunnel Group Path APS Information
-----
Active Count     : 2              Active Time      : 0d 00:12:09
-----
Eth-Cfm Configuration Information
-----
Md-index         : 1              Direction        : Down
Ma-index         : 1              Admin             : Enabled
MepId           : 1              CCM-Enable       : Enabled
LowestDefectPri : macRemErrXcon  HighestDefect    : defRemoteCCM
Defect Flags     : bDefRemoteCCM
Mac Address      : 00:16:4d:c0:c1:ca  ControlMep       : True
CcmLtmPriority   : 7
CcmTx           : 0              CcmSequenceErr  : 0
Eth-Ais         : Disabled
Eth-Tst         : Disabled
LbRxReply       : 0              LbRxBadOrder    : 0
LbRxBadMsdu     : 0              LbTxReply        : 0
LbNextSequence  : 1              LtNextSequence   : 1
LtRxUnexplained : 0
=====
    
```

\*A: PE - E#

Table 133: Output Fields: show eth-tunnel

Field	Description
Tunnel Id	Numeric value from 1 to 64.
Admin State	Up — The eth tunnel is administratively up. Down — The eth tunnel is administratively down.
Oper State	Up — The eth tunnel is operationally up. Down — The eth tunnel is operationally down.
Protection Type	Two options: g8031-1to1 — Two members are allowed, but only one of them is active at one point in time. loadsharing — Multiple members can be active at one point in time.
Active Paths	Only two paths are supported.

## eth-tunnel

### Syntax

**eth-tunnel** *tunnel-index* [**clear**]

### Context

[\[Tree\]](#) (tools>dump eth-tunnel)

### Full Context

tools dump eth-tunnel

### Description

This command displays Ethernet tunnel information.

### Parameters

***tunnel-id***

Specifies the tunnel ID.

**Values** 1 to 128

**clear**

Clears statistics after reading.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of Ethernet tunnel information.

### Output Example

```
*A:PE-E# tools dump eth-tunnel 1

TunnelId 1 (Up/Up), Port eth-tunnel-1 (Up/Up): type g8031-1to1
NumMems 2/2, Up/Dn 0/0, active 0x1, present 0x3 baseMemPort 1/1/2
memId 1 (P), port 1/1/2 (Up), tag 1.0(Up) status (Up/Up)
  ccCnt-sf/ok 1/1 idx 0 tunId 1
memId 2 (S), port 2/1/2 (Up), tag 1.0(Up) status (Up/Up)
  ccCnt-sf/ok 0/0 idx 1 tunId 1

TunId = 1, state = Running, Active = Work, Now = 000 00:16:48.140
revert = 1, ReqState = NR-NULL, Pdu(Tx/Rx): 0x0f0000/0x0f0000
Defects =
Running Timers = PduReTx
  Work MemId = 1 (1/1/2:1.0), state = Ok, cc = 000 00:16:23.510U
  ActiveCnt = 4, ActiveSeconds = 791
  Protect MemId = 2 (2/1/2:1.0), state = Ok, cc = 000 00:09:47.560U
  ActiveCnt = 3, ActiveSeconds = 308
DbgCnts: swEv = 2, wMemSts = 2, pMemSts = 0
  rxPdu (valid/Invalid) = 4/0, wSfClr = 1, pSfClr = 0, wtrExp = 1
  cm = 0, cmClr = 0, pm = 0, pmClr = 0, nr = 0, nrClr = 0
```

Seq	Event	TxPdu	RxPdu	Dir	Act	Time
000	wMemSts	0xbf0101 wSF	0x0f0000 NR	Tx-->	Prot	000 00:16:12.450
001	RxPdu	0xbf0101 wSF	0x0f0101 NR	Rx<--	Prot	000 00:16:12.450
002	RxPdu	0xbf0101 wSF	0xbf0101 wSF	Rx<--	Prot	000 00:16:12.480
003	RxPdu	0xbf0101 wSF	0x0f0101 NR	Rx<--	Prot	000 00:16:24.890
004	wSFClr	0x5f0101 WTR	0x0f0101 NR	Tx-->	Prot	000 00:16:25.030
005	WTR	0x0f0000 NR	0x0f0101 NR	Tx-->	Work	000 00:16:26.630
006	RxPdu	0x0f0000 NR	0x0f0000 NR	Rx<--	Work	000 00:16:26.630

```
*A:PE-E#
```

## 8.36 ethernet

### ethernet

#### Syntax

**ethernet**

#### Context

[\[Tree\]](#) (clear>port ethernet)

#### Full Context

clear port ethernet



## Description

Commands in this context clear Ethernet port statistics.

## Platforms

All

ethernet

## Syntax

ethernet

## Context

[\[Tree\]](#) (show>system ethernet)

## Full Context

show system ethernet

## Description

Commands in this context display system-specific Ethernet information.

## Platforms

All

ethernet

## Syntax

ethernet

ethernet associations

ethernet [detail]

## Context

[\[Tree\]](#) (show>port ethernet)

## Full Context

show port ethernet

## Description

Commands in this context display Ethernet port information.

## Parameters

### associations

Displays Ethernet port associations.

### detail

Displays detailed information.

## Platforms

All

## 8.37 ethernet-segment

### ethernet-segment

## Syntax

**ethernet-segment**

**ethernet-segment name** *name* [**all**]

**ethernet-segment name** *name* **evi** [*evi*]

**ethernet-segment name** *name* **isid** [*isid*]

**ethernet-segment name** *name* **virtual-ranges**

## Context

[\[Tree\]](#) (show>service>system>bgp-evpn ethernet-segment)

## Full Context

show service system bgp-evpn ethernet-segment

## Description

Commands in this context display the Ethernet Segment (ES) parameters.

## Parameters

### *name*

Specifies the name of an ES, up to 32 characters.

### **all**

Displays all available information for the specified ES.

### *evi*

Displays information for the specified EVPN Instance (EVI) .

**Values** 1 to 65535

**isid**

Displays information for the specified ISID.

**Values** 1 to 16777215

**virtual-ranges**

Displays the VD-ID, Q-tag, S-tag, or C-tag per S-tag virtual ranges configured on the virtual ES.

**Platforms**

All

**Output**

See the following output examples:

- [Output Example: show service system BGP EVPN ES information](#)
- [Output Example: show service system BGP EVPN ES information for configured auto-ESI with operational ESI derived](#)
- [Output Example: show service system BGP EVPN ES information for configured auto-ESI with operational ESI pending derivation](#)
- [Output Example: show service system BGP EVPN ES information for manually configured ESI](#)
- [Output Example: show service system BGP EVPN ES information for manually configured ESI with all option](#)
- [Output Example: show service system BGP EVPN ES information for unconfigured auto-ESI and ESI](#)

**Output Example: show service system BGP EVPN ES information**

```
show service system bgp-evpn ethernet-segment name "ES-1"
```

```
=====
Service Ethernet Segment
=====
Name                : ES-1
Eth Seg Type        : None
Admin State         : Enabled           Oper State           : Up
ESI                 : auto-esi
Oper ESI            : 01:d8:47:ff:00:00:00:00:01:00
Auto-ESI Type       : Type 1
AC DF Capability    : Exclude
Multi-homing        : singleActive      Oper Multi-homing    : singleActive
ES SHG Label        : 524285
Source BMAC LSB     : None
Vprn Next Hop       : 1.1.1.1
Lag Id              : 1
ES Activation Timer : 0 secs
Oper Group          : es-1
Svc Carving         : manual           Oper Svc Carving     : manual
Cfg Range Type      : lowest-pref
-----
DF Pref Election Information
-----
Preference          Preference    Last Admin Change    Oper Pref          Do No
Mode                Value                                     Value              Preempt
```

```
-----  
non-revertive 32767          04/12/2021 08:08:54      32767      Enabled  
-----  
EVI Ranges: <none>  
ISID Ranges: <none>  
=====
```

**Output Example: show service system BGP EVPN ES information for configured auto-ESI with operational ESI derived**

```
show service system bgp-evpn ethernet-segment name "ES-1"
```

```
=====  
Service Ethernet Segment  
=====  
Name           : ES-1  
Eth Seg Type   : None  
Admin State    : Enabled      Oper State      : Up  
ESI            : auto-esi  
Oper ESI       : 01:00:ca:fe:ca:fe:00:01:01:00  
Auto-ESI Type  : Type 1  
AC DF Capability: Exclude  
Multi-homing   : allActive   Oper Multi-homing : allActive
```

**Output Example: show service system BGP EVPN ES information for configured auto-ESI with operational ESI pending derivation**

```
show service system bgp-evpn ethernet-segment name "ES-1"
```

```
=====  
Service Ethernet Segment  
=====  
Name           : ES-1  
Eth Seg Type   : None  
Admin State    : Enabled      Oper State      : Up  
ESI            : auto-esi  
Oper ESI       : None  
Auto-ESI Type  : Type 1  
AC DF Capability: Exclude  
Multi-homing   : allActive   Oper Multi-homing : allActive
```

**Output Example: show service system BGP EVPN ES information for manually configured ESI**

```
show service system bgp-evpn ethernet-segment name "ES-1"
```

```
=====  
Service Ethernet Segment  
=====  
Name           : ES-1  
Eth Seg Type   : None  
Admin State    : Enabled      Oper State      : Up  
ESI            : 01:00:ca:fe:ca:fe:00:01:01:00  
Oper ESI       : 01:00:ca:fe:ca:fe:00:01:01:00  
Auto-ESI Type  : None  
AC DF Capability: Exclude  
Multi-homing   : allActive   Oper Multi-homing : allActive
```

**Output Example: show service system BGP EVPN ES information for manually configured ESI with all option**

```
show service system bgp-evpn ethernet-segment name "ES23" all
```

```
=====
Service Ethernet Segment
=====
Name                : ES23
Eth Seg Type        : None
Admin State         : Enabled           Oper State           : Up
ESI                 : 00:ca:ca:de:ba:ca:00:ee:ca:ca
Oper ESI            : 00:ca:ca:de:ba:ca:00:ee:ca:ca
Auto-ESI Type       : None
AC DF Capability    : Include
Multi-homing        : singleActive      Oper Multi-homing    : singleActive
ES SHG Label        : 524249
Source BMAC LSB     : None
Vprn Next Hop       : 1.1.1.1
PW Port Id          : 20
PW Port Headend     : enabled
ES Activation Timer : 0 secs
Oper Group          : (Not Specified)
Svc Carving         : manual           Oper Svc Carving     : manual
Cfg Range Type      : lowest-pref
-----
DF Pref Election Information
-----
Preference      Preference      Last Admin Change      Oper Pref      Do No
Mode            Value           Value                  Value          Preempt
-----
non-revertive  20              01/17/2022 18:39:59    20             Enabled
-----
EVI Ranges: <none>
ISID Ranges: <none>
-----
Vprn NextHop Evi Ranges
-----
From           To           Last Update
-----
12345          12345       09/05/2022 19:01:28
-----
EVI Information
=====
EVI            SvcId          Actv Timer Rem      DF
-----
20211         20211         0                   no
-----
Number of entries: 1
=====
DF Candidate list
-----
EVI            DF Address
-----
20211         2001:db8::2
20211         2001:db8::3
-----
Number of entries: 2
-----
```

**Output Example: show service system BGP EVPN ES information for unconfigured auto-ESI and ESI**

```
show service system bgp-evpn ethernet-segment name "ES-1"
```

```
=====
Service Ethernet Segment
=====
Name           : ES-1
Eth Seg Type   : None
Admin State    : Enabled      Oper State      : Up
ESI           : None
Oper ESI       : None
Auto-ESI Type  : None
AC DF Capability: Exclude
Multi-homing   : allActive   Oper Multi-homing : allActive
```

Table 134: BGP EVPN ES Field Descriptions describes BGP EVPN ES output fields.

Table 134: BGP EVPN ES Field Descriptions

Field	Description
Name	The Ethernet Segment name
Eth Seg Type	The Ethernet Segment type
Admin State	The administrative state for this service Ethernet Segment
Oper State	The operational state for this service Ethernet Segment
ESI	The Ethernet Segment Identifier
Oper ESI	The current operational Ethernet Segment Identifier
Auto-ESI Type	The auto-derived Ethernet Segment Identifier type
AC DF Capability	The AC-DF Capability status (Exclude or Include)
Multi-homing	The multi-homing information
Oper Multi-homing	The operational multi-homing state
ES SHG Label	The ES Split Horizon Group label
Source BMac LSB	The source BMac least significant bit
Vprn Next Hop	The IP address associated with an Ethernet Segment
PW Port Id	The PW port ID
PW Port Headend	The PW port headend status
ES BMac Tbl Size	The ES BMac table size

Field	Description
ES BMac Entries	The ES BMac entries
Lag Id	The LAG ID
ES Activation Timer	The ES activation timer
Svc Carving	The service carving type
Oper Svc Carving	The operational service carving type
Cfg Range Type	The configured range type
DF Pref Election Information	
Preference Mode	The preference mode
Preference Value	The preference value
Last Admin Change	The date and time of the last administrative change
Oper Pref Value	The operational preference value
Do No Preempt	The Do Not Preempt status
EVI Ranges	The EVI ranges
ISID Ranges	The ISID ranges
Vprn NextHop Evi Ranges	
From	The beginning point of the EVI range
To	The ending point of the EVI range
Last Update	The date and time of the last range update
EVI Information	
EVI	The EVPN instance
SvcId	The service ID
Actv Timer Rem	The active timer rem value
DF	The designated forwarder status
Number of entries:	The number of entries
EVI DF and Candidate List	
DF Last Change	The date and time of the last DF candidate change

Field	Description
DF Candidates	The DF candidate IP address
Time Added	The date and time of the DF candidate addition
Q-Tag Ranges	
Q-Tag Start	The Q-Tag start range value
Q-Tag End	The Q-Tag end range value
Last Changed	The date and time of the last change
VC-Id Ranges	
VC-Id Start	The VC-Id start range value
VC-Id End	The VC-Id end range value
S-Tag Ranges	
S-Tag Start	The S-Tag start value
S-Tag End	The S-Tag end value
S-Tag C-Tag Ranges	
C-Tag Start	The C-Tag start value
C-Tag End	The C-Tag end value
Vxlan Instance Service Ranges	
Svc Range Start	The service range start in this Vxlan instance
Svc Range End	The service range end in this Vxlan instance

## ethernet-segment

### Syntax

**ethernet-segment** *name evi evi df*  
**ethernet-segment** *name isid isid df*  
**ethernet-segment** *name local-bias*

### Context

[\[Tree\]](#) (tools>dump>service>system>bgp-evpn ethernet-segment)



## Full Context

tools dump service system bgp-evpn ethernet-segment

## Description

This command shows the computed DF PE for a specified EVI or ISID when the **evi** or **isid** parameters are selected, respectively. When the **local-bias** parameter is used, the output lists the PEs that are in the candidate DF Election list for the ES, and whether local bias procedures are enabled on them.

The PE can only enable local bias procedures on up to three PEs that are attached to the same ES and use multihomed VXLAN services. If more than three PEs exists, the PEs are ordered by either lowest IP (if **service-carving auto** is used in the ES) or lowest preference (if preference-based service-carving is used) and only the top three PEs are considered for local bias.

## Parameters

### *name*

Specifies the name of the Ethernet Segment, up to 32 characters.

### *evi*

Specifies the EVI.

**Values** 1 to 65535

### *isid*

Specifies the ISID.

**Values** 1 to 16777215

### **local-bias**

Specifies that output lists the PEs that are in the candidate DF Election list for the ES, and whether local bias procedures are enabled on them.

## Platforms

All

## Output

The following output is an example of Ethernet Segment information.

### Output Example

```
# tools dump service system bgp-evpn ethernet-segment "ESI-71" evi 1 df
[07/15/2015 21:52:08] Computed DF: 192.0.2.72 (Remote) (Boot Timer Expired: Yes)

# tools dump service system bgp-evpn ethernet-segment "ESI-71" isid 20001 df
[07/15/2015 21:52:21] Computed DF: 192.0.2.72 (Remote) (Boot Timer Expired: Yes)

# /tools dump service system bgp-evpn ethernet-segment "ESI-71" local-bias

-----
[02/05/2019 20:54:20] Vxlan Local Bias Information
-----+-----
Peer                                     | Enabled
-----+-----
220.0.0.1                               | Yes
220.0.0.2                               | Yes
```

```

220.0.0.3 | Yes
220.0.0.4 | No
-----+-----

# tools dump service system bgp-evpn ethernet-segment "eslag1" local-bias
-----+-----
[04/22/2018 15:40:22] Vxlan Local Bias Information
-----+-----
Peer | Enabled
-----+-----
10.20.1.1 | Yes
10.20.1.2 | Yes
10.20.1.4 | Yes
10.20.1.5 | No
-----+-----

# tools dump service system bgp-evpn ethernet-segment "ES23" evi 20211 df
[01/17/2022 17:00:39] Computed DF: 2001:db8::3 (Remote) (Boot Timer Expired: Yes)
[01/17/2022 17:00:39] Computed Backup: 2001:db8::2 (This Node)

# tools dump service system bgp-evpn ethernet-segment "ES23" evi 20212 df
[01/17/2022 17:00:46] Evi not active on ethernet-segment
    
```

## ethernet-segment

### Syntax

**ethernet-segment** [*name*]

### Context

[\[Tree\]](#) (show>service>sdp-using ethernet-segment)

### Full Context

show service sdp-using ethernet-segment

### Description

This command displays Ethernet Segment information associated with SDPs.

### Parameters

***name***

Specifies the Ethernet segment name, up to 32 characters.

### Platforms

All

## 8.38 etree

### etree

#### Syntax

etree

#### Context

[Tree] (show>service>id etree)

#### Full Context

show service id etree

#### Description

This command displays the same information shown in the show service ID base context, with the addition of the role of each object in the VPLS E-Tree service.

The following labels identify the configuration of the SAPs and SDP bindings:

- (L) indicates leaf-ac
- (RL) indicates root-leaf-tag

#### Platforms

All

#### Output

The following output is an example of VPLS E-Tree information.

#### Output Example

```
*A:PE-6# show service id 2005 etree

=====
Service Basic Information
=====
Service Id       : 2005                Vpn Id           : 0
Service Type    : VPLS
Name            : etree-2005
Description     : (Not Specified)
Customer Id     : 1                   Creation Origin  : manual
Last Status Change: 05/08/2018 09:49:54
Last Mgmt Change : 05/08/2018 09:51:09
Etree Mode      : Enabled
Admin State     : Up                  Oper State       : Up
MTU             : 1514
SAP Count       : 2                   SDP Bind Count  : 1
Snd Flush on Fail : Disabled          Host Conn Verify : Disabled
SHCV pol IPv4   : None
Propagate MacFlush: Disabled          Per Svc Hashing  : Disabled
Allow IP Intf Bind: Disabled
```

```

Fwd-IPv4-Mcast-To*: Disabled          Fwd-IPv6-Mcast-To*: Disabled
Mcast IPv6 scope  : mac-based
Def. Gateway IP   : None
Def. Gateway MAC  : None
Temp Flood Time   : Disabled          Temp Flood       : Inactive
Temp Flood Chg Cnt: 0
SPI load-balance  : Disabled
TEID load-balance : Disabled
Src Tep IP        : N/A
Vxlan ECMP       : Disabled

-----
Service Access & Destination Points
-----
Identifier                Type      AdmMTU  OprMTU  Adm  Opr
-----
sap:1/1/c1/1:2005 (L)     q-tag    9000    9000    Up   Up
sap:1/1/c1/1:2006 (RL)   q-tag    9000    9000    Up   Up
sdp:65:2005 (RL) S(192.0.2.5)  Spok     0       8974    Up   Down
-----
Legend: (L): Leaf-Ac, (RL): Root-Leaf-Tag
=====
* indicates that the corresponding row element may have been truncated.
    
```

## 8.39 eval-group-interface-template

### eval-group-interface-template

#### Syntax

**eval-group-interface-template** *name*

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt eval-group-interface-template)

#### Full Context

tools perform subscriber-mgmt eval-group-interface-template

#### Description

This command reapplies the specified group-interface template to all the group interfaces that were created using this template. This command can be used after changing the group-interface template, because not all the changed parameters are automatically applied to the existing group interfaces.

This command reports the total number of group interfaces linked to the template, the number of group interfaces that were changed or did not require a change, and the number of group interfaces for which a change was attempted but failed.

#### Parameters

***name***

Specifies a group-interface template name, up to 32 characters, as configured under **configure subscriber-mgmt group-interface-template**.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the command information.

### Output Example

```
A:BNG-UPF# /tools perform subscriber-mgmt eval-group-interface-template "default"
Group interface instances:
- total submitted : 1
- changed        : 1
- change failed  : 0
```

## 8.40 eval-ipoe-session

### eval-ipoe-session

#### Syntax

```
eval-ipoe-session [svc-id service-id] [sap sap-id] [mac mac-address] [circuit-id circuit-id] [remote-id remote-id] [subscriber sub-ident-string]
```

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt eval-ipoe-session)

#### Full Context

```
tools perform subscriber-mgmt eval-ipoe-session
```

#### Description

This command re-evaluates the mapping between authentication strings such as the SLA profile string and the actual profiles for the identified IPoE sessions.

#### Parameters

##### **service-id**

Specifies an existing subscriber service ID.

**Values** 1 to 2147483647

##### **sap-id**

Specifies a SAP ID, up to 255 characters.

##### **mac-address**

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers.

***circuit-id***

Specifies the circuit ID up to 127 characters.

***remote-id***

Specifies that information that goes into the remote-id sub-option in the DHCP relay packet, up to 255 characters.

***sub-ident-string***

Specifies an existing subscriber identification profile.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.41 eval-lease-state

### eval-lease-state

**Syntax**

**eval-lease-state** [**svc-id** *service-id*] [**sap** *sap-id*] [**subscriber** *sub-ident-string*] [**ip** *ip-address*] [**mac** *mac-address*]

**Context**

[\[Tree\]](#) (tools>perform>subscr-mgmt eval-lease-state)

**Full Context**

tools perform subscriber-mgmt eval-lease-state

**Description**

This command evaluates lease state.

**Parameters**

***sap-id***

Specifies the physical port identifier portion of the SAP definition.

***ip-address***

Specifies the server's IP address. This address must be unique within the subnet and specified in dotted decimal notation. Allowed values are IP addresses in the range 1.0.0.0 – 223.255.255.255 (with support of /31 subnets).

***sub-ident-string***

Specifies the subscriber ID string, up to 32 characters.

***service-id***

Specifies an existing service ID.

**Values** 1 to 2147483647

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.42 eval-msap

### eval-msap

#### Syntax

```
eval-msap {policy msap-policy-name | msap sap-id}
```

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt eval-msap)

#### Full Context

```
tools perform subscriber-mgmt eval-msap
```

#### Description

This command re-applies the managed SAP policy to the managed SAP identified by the specified *sap-id* or to all managed SAPs associated with the specified *msap-policy name*.

#### Parameters

##### *msap-policy-name*

Specifies an existing MSAP policy. The MSAP policy is re-applied to all associated managed SAPs.

##### *sap-id*

Specifies an MSAP SAP ID. The MSAP policy is re-applied to the specified MSAP.

**Values** *[port-id | lag-id]:qtag1*

*[port-id | lag-id]:qtag1.qtag2*

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.43 eval-ppp-session

### eval-ppp-session

#### Syntax

**eval-ppp-session** [**svc-id** *service-id*] [**user-name** *user-name*] [**sap** *sap-id*] [**ip** *ip-address*] [**subscriber** *sub-ident-string*]

**eval-ppp-session** [**svc-id** *service-id*] [**user-name** *user-name*] [**sap** *sap-id*] **mac** *mac-address* [**session-id** *session-id*] [**ip** *ip-address*] [**subscriber** *sub-ident-string*]

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt eval-ppp-session)

#### Full Context

tools perform subscriber-mgmt eval-ppp-session

#### Description

This command evaluates PPP sessions.

#### Parameters

##### **service-id**

Specifies an existing subscriber service ID.

**Values** 1 to 2147483647

##### **user-name**

Specifies the PPP user name up to 253 characters.

##### **sap-id**

Specifies a SAP ID up to 255 characters.

##### **ip-address**

Specifies the peer's IP address.

##### **sub-ident-string**

Specifies an existing subscriber identification profile.

##### **mac-address**

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers.

##### **session-id**

Specifies information about the ID of the PPP session.

**Values** 1 to 65535



## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.44 eval-rates

### eval-rates

#### Syntax

**eval-rates**

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>bonding eval-rates)

#### Full Context

tools perform subscriber-mgmt bonding eval-rates

#### Description

This command evaluates all bonding contexts and recalculates all reference rates. This command can be useful in handling changes that are not automatically tracked, such as adapting a scheduler rate in a QoS policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.45 eval-sap-template

### eval-sap-template

#### Syntax

**eval-sap-template** *name*

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt eval-sap-template)

#### Full Context

tools perform subscriber-mgmt eval-sap-template

## Description

This command reapplies the SAP template to all the SAPs that were created using this template. This command can be used after changing the SAP template because not all the changed parameters are automatically applied to the existing SAPs.

This command reports the total number of SAPs linked to the template, the number of SAPs that changed or did not require a change, and the number of SAPs for which a change was attempted but failed.

## Parameters

### *name*

Specifies a SAP template name, up to 32 characters, as configured under **configure subscriber-mgmt sap-template**.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the command information.

### Output Example

```
A:BNG-UPF# /tools perform subscriber-mgmt eval-sap-template "default"  
Sap instances:  
- total submitted : 1  
- changed         : 1  
- change failed   : 0
```

## 8.46 eval-slaac-host

### eval-slaac-host

## Syntax

```
eval-slaac-host [svc-id service-id] [sap sap-id] [subscriber sub-ident-string] [ipv6-address ipv6-prefix]  
[mac ieee-address]
```

## Context

[\[Tree\]](#) (tools>perform>subscr-mgmt eval-slaac-host)

## Full Context

```
tools perform subscriber-mgmt eval-slaac-host
```

## Description

This command evaluates the SLAAC host.

## Parameters

### *service-id*

Specifies an existing subscriber service ID.

**Values** 1 to 2147483647

### *sap-id*

Specifies a SAP ID, up to 255 characters.

### *sub-ident-string*

Specifies an existing subscriber identification profile.

### *ieee-address*

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers.

### *ipv6-prefix*

Specifies an IPv6 prefix and prefix length.

**Values**

ipv6-prefix	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.47 evaluate-script

### evaluate-script

#### Syntax

```
evaluate-script sap sap-id control-session acct-session-id action script-action [ dynsvc-policy name ]  
[param-string string]
```

#### Context

[\[Tree\]](#) (tools>perform>service>dynamic-services evaluate-script)

#### Full Context

tools perform service dynamic-services evaluate-script

#### Description

This tools command performs the execution of a dynamic service script action as if the corresponding RADIUS attributes were received from RADIUS. It is possible to setup, modify or teardown a dynamic service associated with the specified control channel.



**Note:**

This command is not available in the MD-CLI.

**Parameters**

***sap sap-id***

specifies the dynamic service SAP id.

***control-session acct-session-id***

Specifies the accounting session id of the control channel associated with this dynamic service.

***action script-action***

Specifies the requested action: setup, modify or teardown.

***dynsvc-policy name***

Specifies the dynamic services policy to use for this action. Mandatory parameter for setup and modify actions. In case of a modify action, the dynamic services policy must be the same as the policy used at setup.

***param-string string***

Specifies the dynamic service parameter list. Mandatory parameter for setup and modify actions.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 8.48 evc

evc

**Syntax**

**evc** [*port-id* [*vlan vlan-id*]]

**Context**

[\[Tree\]](#) (show>elmi evc)

**Full Context**

show elmi evc

**Description**

This command displays Ethernet Virtual Connections (EVC). No argument displays all the EVC on the service router. The port and VLAN arguments display information related to EVC associated with the port and VLAN.

## Parameters

### *port-id*

Displays information related to the EVCs configured on the port.

**Values** *slot/mda/port*

### *vlan-id*

Specifies the VLAN Identifier of the EVC.

**Values** 0 to 4094, \*

## Platforms

All

## Output

The following output is an example of E-LMI EVC information, and [Table 135: Output Fields: show elmi evc](#) describes the output fields.

### Output Example

```
*A:Dut-C# show elmi evc
=====
ELMI EVC Table
=====
Port      Vlan  Status  Type  Evc Id
-----
1/1/1     10    New-Act P2p   EVC11110
1/1/3     30    New-Act P2p   EVC11220
1/1/5     100   Act     P2p   EVC115100
1/1/5     200   Act     P2p   EVC115200
-----
Number of Evcs : 4
=====
*A:Dut-C#

A:Dut-C# show elmi evc 1/1/5
=====
ELMI EVC Table
=====
Port      Vlan  Status  Type  Evc Id
-----
1/1/5     100   Act     P2p   EVC115100
1/1/5     200   Act     P2p   EVC115200
-----
Number of Evcs : 2
=====
A:Dut-C#

*A:Dut-C# show elmi evc 1/1/5 vlan 100
=====
Evc Detailed Information
=====
Port      : 1/1/5          vlanId      : 100
Evc Status : Act            Evc Type    : P2p
Evc Identifier: EVC115100
=====
```

\*A:Dut - C#

Table 135: Output Fields: show elmi evc

Field	Description
Port	Port identifier.
Vlan	Vlan identifier.
Status	New-Act — New and active. Act — Active.
Type	Connection type.
EVC Id	EVC identifier.

## 8.49 event-control

### event-control

#### Syntax

**event-control** [*application-id* [*event-name* | *event-number*]]  
**event-control** *application-id* *event-name* **detail**

#### Context

[\[Tree\]](#) (show>log event-control)

#### Full Context

show log event-control

#### Description

This command displays event control settings for events including whether the event is suppressed or generated and the severity level for the event.

If no options are specified all events, alarms and traps are listed.

#### Parameters

##### **application-id**

Only displays event control for the specified application.

**Default** All applications.

The following are some sample applications:

**Values** anysec, application\_assurance, aps, atm, auto\_prov, bfd, bgp, bier, bmp, ccag, cflowd, chassis, cpmhwfilter, cpmhwqueue, debug, dhcp, dhcps, diameter, dot1x, dynsvc, efm\_oam, elmi, ering, eth\_cfm, etun, filter, fpe, gsmp, gtp, gtungrp, icl, igh, igmp, igmp\_snooping, ip, ipfix, ipsec, ipsec\_cpm, isis, l2tp, lag, ldap, ldp, li, lldp, logger, macsec, mcac, mcpath, mc\_redundancy, mgmt\_core, mirror, mld, mld\_snooping, mpls, mpls\_tp, mpls\_lmgr, mrp, msdp, nat, nge, ntp, oam, open\_flow, ospf, pcap, pcep, pfc, pim, im\_snooping, port, ppp, pppoe, pppoe\_clnt, profile, ptp, pxc, python, qos, radius, rib\_api, rip, rip\_ng, route\_next\_hop, route\_policy, rpki, rsvp, security, sflow, snmp, sr\_policy, stp, subscr\_mgmt, sub\_host\_trk, svcmgr, system, tip, tls, user, user\_db, video, vrrp, vrtr, wlan\_gw, wpp

**event-name**

Only displays event control for the named application event, up to 32 characters.

**Default** All events for the application.

**event-number**

Only displays event control for the specified application event number.

**Default** All events for the application.

**Platforms**

All

**Output**

The following output is an example of event control information.

[Table 136: Event-Control Output Field Descriptions](#) describes the output fields for the event control.

**Output Example**

```
A:gal171# show log event-control
=====
Log Events
=====
Application
ID#      Event Name                               P  g/s   Logged   Dropped
-----
BGP:
 2001  bgpEstablished                          MI  gen    0        0
 2002  bgpBackwardTransition                    WA  gen    0        0
 2003  tBgpMaxPrefix90                          WA  gen    0        0
 2004  tBgpMaxPrefix100                         CR  gen    0        0
L 2005  sendNotification                          WA  gen    0        0
L 2006  receiveNotification                       WA  gen    0        0
L 2007  bgpInterfaceDown                         WA  gen    0        0
L 2008  bgpConnNoKA                              WA  gen    0        0
L 2009  bgpConnNoOpenRcvd                        WA  gen    0        0
L 2010  bgpRejectConnBadLocAddr                   WA  gen    0        0
L 2011  bgpRemoteEndClosedConn                    WA  gen    0        0
L 2012  bgpPeerNotFound                           WA  gen    0        0
L 2013  bgpConnMgrTerminated                       WA  gen    0        0
L 2014  bgpTerminated                             WA  gen    0        0
L 2015  bgpNoMemoryPeer                           CR  gen    0        0
```

L	2016	bgpVariableRangeViolation	WA	gen	0	0
L	2017	bgpCfgViol	WA	gen	0	0
CFLOWD:						
	2001	cflowdCreated	MI	gen	0	0
	2002	cflowdCreateFailure	MA	gen	0	0
	2003	cflowdDeleted	MI	gen	0	0
	2004	cflowdStateChanged	MI	gen	0	0
	2005	cflowdCleared	MI	gen	0	0
	2006	cflowdFlowCreateFailure	MI	gen	0	0
	2007	cflowdFlowFlushFailure	MI	gen	0	0
	2008	cflowdFlowUnsuppProto	MI	sup	0	0
CCAG:						
CHASSIS:						
	2001	cardFailure	MA	gen	0	0
	2002	cardInserted	MI	gen	4	0
	2003	cardRemoved	MI	gen	0	0
	2004	cardWrong	MI	gen	0	0
	2005	EnvTemperatureTooHigh	MA	gen	0	0
...						
DEBUG:						
L	2001	traceEvent	MI	gen	0	0
DOT1X:						
FILTER:						
	2001	filterPBRPacketsDropped	MI	gen	0	0
IGMP:						
	2001	vRtrIcmpIfRxQueryVerMismatch	WA	gen	0	0
	2002	vRtrIcmpIfCModeRxQueryMismatch	WA	gen	0	0
IGMP_SNOOPING:						
IP:						
L	2001	clearRTMError	MI	gen	0	0
L	2002	ipEtherBroadcast	MI	gen	0	0
L	2003	ipDuplicateAddress	MI	gen	0	0
L	2004	ipArpInfoOverwritten	MI	gen	0	0
L	2005	fibAddFailed	MA	gen	0	0
L	2006	qosNetworkPolicyMallocFailed	MA	gen	0	0
L	2007	ipArpBadInterface	MI	gen	0	0
L	2008	ipArpDuplicateIpAddress	MI	gen	0	0
L	2009	ipArpDuplicateMacAddress	MI	gen	0	0
ISIS:						
	2001	vRtrIisisDatabaseOverload	WA	gen	0	0
	2002	vRtrIisisManualAddressDrops	WA	gen	0	0
	2003	vRtrIisisCorruptedLSPDetected	WA	gen	0	0
	2004	vRtrIisisMaxSeqExceedAttempt	WA	gen	0	0
	2005	vRtrIisisIDLenMismatch	WA	gen	0	0
	2006	vRtrIisisMaxAreaAdrsMismatch	WA	gen	0	0
....						
USER:						
L	2001	cli_user_login	MI	gen	2	0
L	2002	cli_user_logout	MI	gen	1	0
L	2003	cli_user_login_failed	MI	gen	0	0
L	2004	cli_user_login_max_attempts	MI	gen	0	0
L	2005	ftp_user_login	MI	gen	0	0
L	2006	ftp_user_logout	MI	gen	0	0
L	2007	ftp_user_login_failed	MI	gen	0	0
L	2008	ftp_user_login_max_attempts	MI	gen	0	0
L	2009	cli_user_io	MI	sup	0	48
L	2010	snmp_user_set	MI	sup	0	0
L	2011	cli_config_io	MI	gen	4357	0
VRRP:						
	2001	vrrpTrapNewMaster	MI	gen	0	0
	2002	vrrpTrapAuthFailure	MI	gen	0	0
	2003	tmnxVrrpIPListMismatch	MI	gen	0	0
	2004	tmnxVrrpIPListMismatchClear	MI	gen	0	0



```

    2005 tmnxVrrpMultipleOwners      MI gen      0      0
    2006 tmnxVrrpBecameBackup        MI gen      0      0
L  2007 vrrpPacketDiscarded          MI gen      0      0
VTR:
    2001 tmnxVRtrMidRouteTCA         MI gen      0      0
    2002 tmnxVRtrHighRouteTCA        MI gen      0      0
    2003 tmnxVRtrHighRouteCleared    MI gen      0      0
    2004 tmnxVRtrIllegalLabelTCA     MA gen      0      0
    2005 tmnxVRtrMcastMidRouteTCA    MI gen      0      0
    2006 tmnxVRtrMcastMaxRoutesTCA   MI gen      0      0
    2007 tmnxVRtrMcastMaxRoutesCleared MI gen      0      0
    2008 tmnxVRtrMaxArpEntriesTCA    MA gen      0      0
    2009 tmnxVRtrMaxArpEntriesCleared MI gen      0      0
    2011 tmnxVRtrMaxRoutes            MI gen      0      0
=====
A:ALA-1#
    
```

```

A:ALA-1# show log event-control ospf
=====
Log Events
=====
Application
ID#   Event Name                P   g/s   Logged   Dropped
-----
    2001 ospfVirtIfStateChange    WA gen      0      0
    2002 ospfNbrStateChange      WA gen      1      0
    2003 ospfVirtNbrStateChange  WA gen      0      0
    2004 ospfIfConfigError       WA gen      0      0
    2005 ospfVirtIfConfigError   WA gen      0      0
    2006 ospfIfAuthFailure       WA gen      0      0
    2007 ospfVirtIfAuthFailure   WA gen      0      0
    2008 ospfIfRxBadPacket       WA gen      0      0
    2009 ospfVirtIfRxBadPacket   WA gen      0      0
    2010 ospfTxRetransmit        WA sup      0      0
    2011 ospfVirtIfTxRetransmit   WA sup      0      0
    2012 ospfOriginateLsa        WA sup      0     404
    2013 ospfMaxAgeLsa           WA gen      3      0
    2014 ospfLsdbOverflow         WA gen      0      0
    2015 ospfLsdbApproachingOverflow WA gen      0      0
    2016 ospfIfStateChange       WA gen      2      0
    2017 ospfNssaTranslatorStatusChange WA gen      0      0
    2018 vRtrOspfSpfRunsStopped   WA gen      0      0
    2019 vRtrOspfSpfRunsRestarted WA gen      0      0
    2020 vRtrOspfOverloadEntered  WA gen      1      0
    2021 vRtrOspfOverloadExited  WA gen      0      0
    2022 ospfRestartStatusChange  WA gen      0      0
    2023 ospfNbrRestartHelperStatusChange WA gen      0      0
    2024 ospfVirtNbrRestartHelperStsChg WA gen      0      0
=====
    
```

```

A:ALA-1#
A:ALA-1# show log event-control ospf ospfVirtIfStateChange
=====
Log Events
=====
Application
ID#   Event Name                P   g/s   Logged   Dropped
-----
    2001 ospfVirtIfStateChange    WA gen      0      0
=====
    
```

A:ALA-1#

```
A:dut-c# show log event-control "BGP" tBgpMaxNgPfxLmtThresholdReached detail
```

```
=====
Log event "tBgpMaxNgPfxLmtThresholdReached"
=====
```

```
Severity                : major
Generated               : true
Count                  : 0
Drop count              : 1
Throttle                : false
Specific throttle      : false
Specific throttle limit : 0
Specific throttle interval (s) : 0
Specific throttle by default : false
Specific throttle limit default : 0
Specific throttle interval default(s) : 0
Repeat                  : false
Source stream          : main
```

```
A:node-2# show log event-control "mgmt_core"
```

```
=====
Log Events
=====
```

```
Application
ID#   Event Name                P   g/s   Logged   Dropped
-----
L 2001 mdConfigChange         MI  sup    0        197
L 2002 mdOcConfigChange       MI  sup    0         0
L 2003 mdBofConfigChange      MI  sup    0         23
L 2004 mdDebugConfigChange    MI  sup    0         0
=====
```

Table 136: Event-Control Output Field Descriptions

Label	Description
Application	The application name.
ID#	The event ID number within the application. L ID# An "L" in front of an ID represents event types that do not generate an associated SNMP notification. Most events do generate a notification, only the exceptions are marked with a preceding "L".
Event Name	The event name.
P	CL — The event has a cleared severity or priority. CR — The event has critical severity or priority. IN — The event has indeterminate severity or priority. MA — The event has major severity or priority. MI — The event has minor severity or priority.

Label	Description
	WA — The event has warning severity or priority.
g/s	gen — The event will be generated or logged by event control. sup — The event will be suppressed or dropped by event control. thr — Specifies that throttling is enabled.
Logged	The number of events logged or generated.
Dropped	The number of events dropped/suppressed.
Severity	The severity level of the event (cleared, indeterminate, critical, major, minor, or warning).
Generated	Indicates whether the log event is enabled (true) or suppressed (false).
Count	The number of events logged or generated.
Drop count	The number of events dropped/suppressed.
Throttle	Indicates whether the event is subject to global throttling (true or false).
Specific throttle	Indicates whether the event is subject to specific per event throttling (true or false).
Specific throttle limit	The configured number of events per interval for specific throttling.
Specific throttle interval (s)	The configured interval over which the specific throttling limit is applied.
Specific throttle by default	Indicates whether the specific throttling is enabled or not when it has not been explicitly configured.
Specific throttle limit default	The default number of events per-interval for specific throttling of this event.
Specific throttle interval default (s)	The default interval over which the specific default throttling limit is applied.
Repeat	Specifies that the log event should be repeated every minute until the underlying condition is cleared.
Source stream	Specifies the event source (main, security, change, debug or li).

## 8.50 event-handling

### event-handling

#### Syntax

**event-handling**

#### Context

[\[Tree\]](#) (show>log event-handling)

#### Full Context

show log event-handling

#### Description

Commands in this context display Event Handling System (EHS) information.

#### Platforms

All

### event-handling

#### Syntax

**event-handling**

#### Context

[\[Tree\]](#) (clear>log event-handling)

#### Full Context

clear log event-handling

#### Description

Commands in this context clear Event Handling System (EHS) information.

#### Platforms

All

## 8.51 event-log

### event-log

#### Syntax

**event-log** *event-log-name* **syslog**

#### Context

[\[Tree\]](#) (show>app-assure>group event-log)

#### Full Context

show application-assurance group event-log

#### Description

This command displays event log information.

#### Parameters

##### **event-log-name**

Specifies the event log name, up to 32 characters.

##### **syslog**

Specifies to display syslog information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following is an output example displaying event log information:

#### Output Example

```
*A:Dut-B# show application-assurance group 1:1 event-log "sampleLog" syslog
=====
Application Assurance Group 1:1 Event Log "sampleLog" Syslog
=====
Event-log admin status : down
Description            : (Not Specified)
Address                : (Not Specified)
Port                  : 514
VLAN ID               : (Not Specified)
Facility              : local7
Severity              : info
-----
ISA                    Events Sent          Events Failed
-----
1/2                    0                      0
2/1                    0                      0
2/2                    0                      0
=====
```

\*A:Dut - B#

## event-log

### Syntax

**event-log** *log-event url file-url*

**event-log** *log-event isa mda-id [ url file-url]*

### Context

**[Tree]** (tools>dump>app-assure>group event-log)

### Full Context

tools dump application-assurance group event-log

### Description

This command displays application-assurance event-log information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## event-log

### Syntax

**event-log** *event-log-name*

### Context

**[Tree]** (clear>app-assure>group event-log)

### Full Context

clear application-assurance group event-log

### Description

This command clears the application assurance event log.

### Parameters

***event-log-name***

Specifies the event log name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 8.52 event-logs

### event-logs

#### Syntax

**event-logs** [**failure** | **degrade**] [**active** | **cleared**]

#### Context

[\[Tree\]](#) (show>port>ethernet>efm-oam event-logs)

#### Full Context

show port ethernet efm-oam event-logs

#### Description

This command displays all event logs.

#### Parameters

**failure** | **degrade**

Only show logs with the specified severity.

**active** | **cleared**

Only show logs with the specified state.

#### Platforms

All

## 8.53 event-parameters

### event-parameters

#### Syntax

**event-parameters** [*application-id* [*event-name* | *event-number*]]

#### Context

[\[Tree\]](#) (show>log event-parameters)

#### Full Context

show log event-parameters

## Description

This command displays an event's (or all events) common parameters and specific parameters. This allows a user to know what parameters can be passed from a triggering event to the triggered EHS script.

There is a common event parameter for all log events called 'timestamp' that contains the same information as 'gentime', but in a different format and unit. The 'timestamp' parameter is only available to python3 applications.

## Parameters

### *application-id*

Displays event parameters for the specified application.

**Default** All applications.

The following are some sample applications:

**Values** anysec, application\_assurance, aps, atm, bfd, bgp, calltrace, ccag, cflowd, chassis, cpmhwfilter, cpmhwqueue, debug, dhcp, dhcps, diameter, dot1x, dynsvc, efm\_oam, elmi, ering, eth\_cfm, etun, filter, fpe, gsmp, gtungrp, icl, igh, igmp, igmp\_snooping, ip, ipfix, ipsec, ipsec\_cpm, isis, l2tp, lag, ldap, ldp, li, lldp, logger, mcac, mcpath, mc\_redundancy, mirror, mld, mld\_snooping, mpls, mpls\_tp, mrp, msdp, nat, ntp, oam, open\_flow, ospf, pcep, pim, pim\_snooping, port, ppp, pppoe, ptp, pxc, python, qos, radius, rip, rip\_ng, route\_next\_hop, route\_policy, rpki, rsvp, security, sflow, snmp, stp, subscr\_mgmt, sub\_host\_trk, svcmgr, system, tip, tls, user, user\_db, video, vrrp, vrtr, wlan\_gw, wpp

### *event-name*

Displays event parameters for the named application event up to 32 characters in length.

**Default** All events for the application.

### *event-number*

Displays event parameters for the specified application event number.

**Default** All events for the application.

**Values** 0 — 4294967295

## Platforms

All

## Output

The following output is an example of log event parameter information.

### Output Example

```
# show log event-parameters "oam" 2001
```

```
=====
Common Event Parameters
appid
```



```
name
eventid
severity
subject
gentime
Event Specific Parameters
tmnx0amPingCtlOwnerIndex
tmnx0amPingCtlTestIndex
tmnx0amPingCtlTgtAddrType
tmnx0amPingCtlTgtAddress
tmnx0amPingResultsTestRunIndex
tmnx0amPingResultsOperStatus
tmnx0amPingResultsMinRtt
tmnx0amPingResultsMaxRtt
tmnx0amPingResultsAverageRtt
tmnx0amPingResultsRttSumOfSquares
tmnx0amPingResultsRtt0FSumSquares
tmnx0amPingResultsMtuResponseSize
tmnx0amPingResultsSvcPing
tmnx0amPingResultsProbeResponses
tmnx0amPingResultsSentProbes
tmnx0amPingResultsLastGoodProbe
tmnx0amPingCtlTestMode
tmnx0amPingHistoryIndex
=====
```

## 8.54 events

### events

#### Syntax

**events** [**local** | **remote**]

#### Context

**[Tree]** (clear>port>eth>efm-oam events)

#### Full Context

clear port ethernet efm-oam events

#### Description

This command clears all link monitoring events on the port.

#### Parameters

##### local

Clears the local events only.

##### remote

Clears the remote events only.

## Platforms

All

## 8.55 evpn

```
evpn
```

### Syntax

```
evpn mac-dup-detect ieee-address
```

```
evpn mac-dup-detect all
```

### Context

[\[Tree\]](#) (clear>service>id evpn)

### Full Context

```
clear service id evpn
```

### Description

This command clears a duplicate MAC and restarts the MAC duplication process. It also clears black-hole MACs.

### Parameters

***ieee-address***

Specifies the MAC address, up to 30 characters.

***all***

Specifies that the **clear** command applies to all duplicate MACs.

## Platforms

All

```
evpn
```

### Syntax

```
evpn usage
```

### Context

[\[Tree\]](#) (tools>dump>service evpn)

### Full Context

```
tools dump service evpn
```

## Description

This command displays the consumed EVPN resources in the system. The VXLAN destinations include static VXLAN destinations as well as Ethernet Segment (ES) VXLAN destinations.

## Platforms

All

## Output

The following output is an example of consumed EVPN resources information and, [Table 137: EVPN Usage Information Fields](#) describes the output fields.

### Output Example

```
A:PE-2# tools dump service evpn usage
vxlan-srv6-evpn-mpls usage statistics at 05/24/2024 11:23:38:
MPLS-TEP                :          0
VXLAN-TEP                :          0
SRV6-TEP                 :          5
Total-TEP                :       5/ 16383

Mpls Dests (TEP, Egress Label + ES + ES-BMAC) :          0
Mpls Etree Leaf Dests   :          0
Vxlan Dests (TEP, Egress VNI + ES)           :          0
Srv6 Dests (TEP, SID + ES)                   :          7
Total-Dest                :     7/196607

Sdp Bind + Evpn Dests   :     7/245759
ES L2/L3 PBR            :     0/ 32767
Evpn Etree Remote BUM Leaf Labels           :          0
Evpn Etree MLDP Leaf Intf                   :     0/ 4096
EVPN ES Labels on MLDP Leaf Intf            :     0/ 16380
```

Table 137: EVPN Usage Information Fields

Label	Description
MPLS-TEP	Specifies the number of MPLS tunnel endpoints (TEPs)
VXLAN-TEP	Specifies the number of VXLAN TEPs
SRV6-TEP	Specifies the number of SRv6 TEPs
Total-TEP	Specifies the total number of TEPs
Mpls Dests (TEP, Egress Label + ES + ES-BMAC)	Specifies the number of MPLS destinations
Mpls Etree Leaf Dests	Specifies the number of MPLS E-Tree leaf destinations
Vxlan Dests (TEP, Egress VNI + ES)	Specifies the number of VXLAN destinations

Label	Description
Srv6 Dests (TEP, SID + ES)	Specifies the number of SRv6 destinations
Total-Dest	Specifies the total number of destinations
Sdp Bind + Evpn Dests	Specifies the number of SDP bind and EVPN destinations
ES L2/L3 PBR	Specifies the number of elementary stream (ES) Layer 2 or Layer 3 policy-based routing (PBR)
Evpn Etree Remote BUM Leaf Labels	Specifies the number of EVPN E-Tree remote BUM leaf labels
EVPN Etree MLDP Leaf Intf	<p>Specifies the number of mLDP interfaces on an mLDP Leaf (receiving P2MP traffic) where the interfaces are part of EVPN E-Tree services. Leaf, in this context, refers to mLDP leaf.</p> <p>This number also refers to the number of roots in E-Tree services that are joinable from an mLDP leaf (for example, the number of mLDP leaf interfaces). Since each root joined potentially causes an E-Tree leaf label from that root to be programmed against the mLDP leaf, it implicitly also indicates the number of programable labels.</p> <p>An entry here is counted as soon as an mLDP leaf is created in an E-Tree service.</p>
EVPN ES Labels on MLDP Leaf Intf	Specifies the number of upstream ES labels programmed against mLDP leafs. This does not include unique upstream ES labels since these labels must be programmed on all mLDP leafs joining a specific root PE.

## evpn

### Syntax

`evpn evpn-type`

### Context

**[Tree]** (show>router>bgp>routes evpn)

### Full Context

show router bgp routes evpn

### Description

Commands in this context displays BGP EVPN routes.

## Platforms

All

evpn

## Syntax

evpn usage

## Context

[\[Tree\]](#) (tools>dump>service>id evpn)

## Full Context

tools dump service id evpn

## Description

This command shows the maximum number of EVPN-tunnel interface IP next hops per R-VPLS as well as the current usage for a specified R-VPLS service.

## Platforms

All

## Output

The following output is an example of tools dump EVPN usage information.

## Output Example

```
*A:PE71# tools dump service id 504 evpn usage
Evpn Tunnel Interface IP Next Hop: 1/8189
```

## 8.56 evpn-l2-oper-attrs

evpn-l2-oper-attrs

## Syntax

evpn-l2-oper-attrs

## Context

[\[Tree\]](#) (show>service>id>bgp-evpn evpn-l2-oper-attrs)

## Full Context

show service id bgp-evpn evpn-l2-oper-attrs

### Description

This command displays information of all the TEPs for which the peer advertised a Layer 2 extended community.

### Platforms

All

### Output

The following command displays an example of all the TEPs for which the peer advertised a Layer 2 extended community and [Table 138: Show EVPN L2 TEP Information Fields](#) describes the output fields.

### Output Example

```
show service id 110 bgp-evpn evpn-l2-oper-attrs
```

```
=====
EVPN P2MP L2 Attributes
=====
TEP Address                               Oper State Oper Flags
-----
192.0.2.4                                 Down       no-L2-comm
2001:db8::2                               Up         None
-----
Number of entries : 2
=====
```

Table 138: Show EVPN L2 TEP Information Fields

Label	Description
EVPN P2MP L2 Attributes	
TEP Address	The TEP address
Oper State	The operational state
Oper Flags	The operational flags
Number of entries	The total number of matching entries

## 8.57 evpn-mcast-gateway

```
evpn-mcast-gateway
```

### Syntax

```
evpn-mcast-gateway {all | pim | mvpn}
```

## Context

[\[Tree\]](#) (show>service>id evpn-mcast-gateway)

## Full Context

```
show service id evpn-mcast-gateway
```

## Description

This command displays the EVPN multicast gateway information.

## Parameters

### *all*

Displays EVPN mulitcast gateway information for the MVPN-to-EVPN Gateway (MEG) and PIM-to-EVPN Gateway (PEG) cases.

### *pim*

Displays EVPN mulitcast gateway information for the PEG case.

### *mvpn*

Displays EVPN mulitcast gateway information for the MEG case.

## Platforms

All

## Output

The following output is an example of EVPN multicast gateway information, and [Table 139: Show EVPN Multicast Gateway Information Fields](#) describes the output fields.

### Output Example

```
# show service id 2 evpn-mcast-gateway {all|pim|mvpn}
```

```
=====
Service Evpn Multicast Gateway
=====
```

```
Type           : mvpn-pim
Admin State    : Disabled
DR Activation Timer : 3 secs (default)
Mvpn Evpn Gateway DR : Yes
Pim Evpn Gateway DR  : No
=====
```

The following output is an example of information displayed when the **all** or **mvpn** options are specified.

```
=====
Mvpn Evpn Gateway
=====
```

```
DR Activation Timer Remaining : 1 sec
DR                           : Yes
DR Last Change                : 10/30/2019 14:03:30
=====
```

```
-----
Candidate list
-----
```

```
Orig-IP                                     Time Added
```

```
-----
10.20.1.2                               10/30/2019 14:03:30
10.20.1.3                               10/30/2019 14:14:12
-----
Number of entries: 2
-----
```

The following output is an example of information displayed when the **all** or **pim** options are specified.

```
=====
Pim Evpn Gateway
=====
DR Activation Timer Remaining : 0 sec
DR                           : No
DR Last Change                : 10/30/2019 14:03:30
=====
Candidate list
-----
Orig-IP                        Time Added
-----
10.20.1.2                      10/30/2019 14:03:30
10.20.1.3                      10/30/2019 14:14:12
-----
Number of entries: 2
-----
```

[Table 139: Show EVPN Multicast Gateway Information Fields](#) describes the EVPN multicast gateway output fields.

*Table 139: Show EVPN Multicast Gateway Information Fields*

Label	Description
Service Evpn Multicast Gateway	
Type	Displays the EVPN multicast gateway type
Admin State	Displays the administrative state
DR Activation Timer	Displays the DR activation timer value
Mvpn Evpn Gateway	Displays MVPN EVPN gateway designated router type
Pim Evpn Gateway DR	Displays the PIM EVPN gateway designated router type
Mvpn Evpn Gateway/Pim Evpn Gateway	
DR Activation Timer Remaining	Displays the number of seconds remaining for the DR activation timer
DR	Indicates DR status
DR Last Change	Displays the date and time of the last DR change
Candidate list	



Label	Description
Orig-Ip	Displays the originating IP address
Time Added	Displays the date and time of the candidate list entry
Number of entries	Displays the number of entries

## 8.58 evpn-mpls

### evpn-mpls

#### Syntax

**evpn-mpls** [*tep-ip-address*]

#### Context

[\[Tree\]](#) (show>service evpn-mpls)

#### Full Context

show service evpn-mpls

#### Description

This command shows the remote EVPN-MPLS tunnel endpoints in the system.

#### Parameters

***tep-ip-address***

Specifies the IP address of a tunnel endpoint.

**Values** a.b.c.d

#### Platforms

All

#### Output

##### Output Example

```
*A:PE70(4)# show service evpn-mpls
=====
EVPN MPLS Tunnel Endpoints
=====
EvpnMplsSTEP Address EVPN-MPLS Dest      ES Dest      ES BMac Dest
-----
192.0.2.69     3           1           1
192.0.2.71     2           0           0
192.0.2.72     3           1           1
```

```

192.0.2.73      2      1      0
192.0.2.254    1      0      0
-----
Number of EvpnMpls Tunnel Endpoints: 5
-----
=====
*A:PE70(4)# show service evpn-mpls
<TEP ip-address>
 192.0.2.69  192.0.2.71  192.0.2.72  192.0.2.73  192.0.2.254

*A:PE70(4)# show service evpn-mpls 192.0.2.69
=====
BGP EVPN-MPLS Dest
=====
Service Id          Egr Label
-----
1                   262140
1                   262141
20000               262138
-----
=====
BGP EVPN-MPLS Ethernet Segment Dest
=====
Service Id          Eth Seg Id          Egr Label
-----
1                   01:00:00:00:00:71:00:00:00:01  262141
-----
=====
BGP EVPN-MPLS ES BMac Dest
=====
Service Id          ES BMac             Egr Label
-----
20000               00:00:00:00:71:71  262138
-----
=====

```

## evpn-mpls

### Syntax

```

evpn-mpls esi esi [detail]
evpn-mpls esi esi instance instance-id [detail]
evpn-mpls es-bmac ieee-address
evpn-mpls [detail]
evpn-mpls instance instance-id [detail]

```

### Context

[\[Tree\]](#) (show>service>id evpn-mpls)

## Full Context

```
show service id evpn-mpls
```

## Description

This command displays the existing EVPN-MPLS destinations for a specified service and all related information. The command allows filtering based on **esi** (for EVPN multi-homing) and **es-bmac** (for PBB-EVPN multi-homing) to display the EVPN-MPLS destinations associated to an Ethernet Segment Identifier (ESI).

## Parameters

### *esi*

Specifies a 10-byte ESI by which to filter the displayed information. For example, ESI-0 | ESI-MAX or 00-11-22-33-44-55-66-77-88-99 with any of these separators ('-',':','.')

### *ieee-address*

Specifies a 48-bit MAC address for which to display information. The parameter is entered in the form xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx, where xx represents a hexadecimal number.

### *instance-id*

Specifies the instance ID.

**Values** 1,2

### *detail*

Displays detailed information.

## Platforms

All

## Output

### Output Example

```
show service id 110 evpn-mpls
```

```
BGP EVPN-MPLS Dest (Instance 1)
```

TEP Address	Transport:Tnl	Egr Label	Oper State	Mcast	Num MACs
2001:db8::2	ldp:65542	524244	Up	bum	0
2001:db8::3	ldp:65540	524250	Up	bum	0

```
Number of entries : 2
```

```
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
```

Eth SegId	Num. Macs	Last Update
01:b6:47:ff:00:00:00:00:01:00	1	02/02/2023 12:48:43

```
Number of entries: 1
```

```
show service id 110 evpn-mpls detail
```

```
=====
```

```
BGP EVPN-MPLS Dest (Instance 1)
```

```
=====
```

TEP Address	Transport:Tnl	Egr Label	Oper State	Mcast	Num MACs
2001:db8::2	ldp:65542	524244	Up	bum	0
Oper Flags : None					
Sup BCast Domain : No					
Last Update : 02/02/2023 12:44:07					
2001:db8::3	ldp:65540	524250	Up	bum	0
Oper Flags : None					
Sup BCast Domain : No					
Last Update : 02/02/2023 12:44:07					

```
-----
```

```
Number of entries : 2
```

```
=====
```

```
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
```

```
=====
```

Eth SegId	Num. Macs	Last Update
01:b6:47:ff:00:00:00:00:01:00	1	02/02/2023 12:48:43

```
-----
```

```
Number of entries: 1
```

```
=====
```

```
show service id 110 evpn-mpls esi 01:b6:47:ff:00:00:00:00:01:00 detail
```

```
=====
```

```
BGP EVPN-MPLS Ethernet Segment Dest (Instance: 1)
```

```
=====
```

Eth SegId	Num. Macs	Last Update
01:b6:47:ff:00:00:00:00:01:00	1	02/02/2023 12:48:43

```
=====
```

```
BGP EVPN-MPLS Dest TEP Info (Instance 1)
```

```
=====
```

TEP Address	Egr Label	Transport:Tnl-Id	Oper State
2001:db8::2	524246	ldp:65542	Up
Oper Flags : None			
Last Update : 02/02/2023 12:48:43			

```
-----
```

```
Number of entries : 1
```

```
=====
```

```
show service id 20000 evpn-mpls es-bmac 00:00:00:00:71:71
```

```

BGP EVPN-MPLS ES BMAC Dest
=====
vBmacAddr                Num. Macs                Last Change
-----
00:00:00:00:71:71        1                        07/15/2015 19:44:10
=====

BGP EVPN-MPLS ES BMAC Dest TEP Info
=====
TEP Address              Egr Label                Last Change
                        Transport
-----
192.0.2.69              262138                   07/15/2015 19:44:10
                        ldp
-----

Number of entries : 1
=====
    
```

The following table describes the EVPN-MPLS output fields.

*Table 140: Show EVPN-MPLS Information Fields*

Label	Description
vBmacAddr	Displays the vBmac address
Num. Macs	Displays the number of MACs
Last Change	Indicates the time of the most recent state changes
TEP Address	Displays the TEP address
Egr Label	Displays the egress label
Transport	Displays the transport type
Number of entries	Indicates the number of entries
Eth SegId	Displays the Ethernet Segment ID
Transport:Tnl-Id	Displays the tunnel type and tunnel ID of the EVPN-MPLS entry
Transport:Tnl	Displays the transport tunnel
Num. MAC	Displays the number of MACs
Oper State	Displays the operational state
Oper Flags	Displays the operational flags
Mcast	Displays the multicast information
Sup BCast Domain	Displays the Sup BCast Domain

## 8.59 evpn-proxy-db

### evpn-proxy-db

#### Syntax

**evpn-proxy-db** [**detail**]

**evpn-proxy-db** [**group** *grp-ip-address*]

#### Context

**[Tree]** (show>service>id>igmp-snooping evpn-proxy-db)

**[Tree]** (show>service>id>mld-snooping evpn-proxy-db)

#### Full Context

show service id igmp-snooping evpn-proxy-db

show service id mld-snooping evpn-proxy-db

#### Description

This command displays the EVPN proxy database that is created when **config>service>vpls>igmp/mld-snooping>evpn-proxy** is enabled in the service. The EVPN proxy database is populated with local reports received on SAP or SDP binds but not with the received SMET routes. The output shows the IGMP and MLD versions of the database entries that are conveyed in the SMET routes advertised for the entries.

#### Parameters

##### *grp-ip-address*

Specifies the group IP address, in dotted decimal notation.

##### *detail*

Specifies detailed information for the EVPN proxy database.

#### Platforms

All

#### Output

The following output is an example of EVPN proxy database information.

#### Output Example

```
A:PE-2# show service id 4000 igmp-snooping evpn-proxy-db
```

```
=====
IGMP Snooping Evpn-Proxy-reporting DB for service 4000
=====
```

Group Address	Mode	Up Time	Num Sources	V1	V2	V3
239.0.0.1	exclude	0d 00:53:55	0			V3

```
239.0.0.2      include 0d 00:53:55 1 V3
-----
Number of groups: 2
=====
```

Table 141: [EVPN Proxy Field Descriptions](#) describes EVPN proxy output fields.

Table 141: *EVPN Proxy Field Descriptions*

Field	Description
Group Address	Group IP address
Mode	IGMPv3 or MLDv2 mode
Up Time	Time that the group is added
Num Sources	Number of sources
V1	IGMP/MLD version of the database
V2	IGMP/MLD version of the database
V3	IGMP version of the database

## 8.60 excessive-sources

### excessive-sources

#### Syntax

**excessive-sources** [**service-id** *service-id* **sap-id** *sap-id*]

#### Context

[\[Tree\]](#) (show>system>security>cpu-protection excessive-sources)

#### Full Context

show system security cpu-protection excessive-sources

#### Description

This command displays sources exceeding their per-source rate limit.

#### Parameters

##### **service-id**

Displays information for services exceeding their per-source rate limit.

##### **sap-id**

Displays information for SAPs exceeding their per-source rate limit.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## excessive-sources

### Syntax

**excessive-sources**

### Context

[\[Tree\]](#) (clear>cpu-protection excessive-sources)

### Full Context

clear cpu-protection excessive-sources

### Description

This command clears the records of sources exceeding their per-source rate limit.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## 8.61 exercise

## exercise

### Syntax

**exercise** *aps-id* {**protect** | **working**}

### Context

[\[Tree\]](#) (tools>perform>aps exercise)

### Full Context

tools perform aps exercise

### Description

This command performs an exercise request on the protection or working circuit.

### Parameters

***aps-id***

Specifies the APS ID.



Values	<i>aps-id</i>	<i>aps-group-id</i>
	aps	keyword
	group-id	1 to 128

#### **protect**

This command clears a physical port that is acting as the protection circuit for the APS group.

#### **working**

This command clears a physical port that is acting as the working circuit for this APS group.

#### **Platforms**

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## 8.62 expand-wildcard-path

### expand-wildcard-path

#### **Syntax**

**expand-wildcard-path** *path*

#### **Context**

[\[Tree\]](#) (tools>dump>system>telemetry expand-wildcard-path)

#### **Full Context**

tools dump system telemetry expand-wildcard-path

#### **Description**

This command expands XML Paths (XPath) to include multiple wildcards.

#### **Parameters**

***path***

Specifies the XPath that contains the wildcards.

#### **Platforms**

All

#### **Output**

### Output Example

```
# tools dump system telemetry expand-wildcard-path "/state/card/.../oper-state"  
=====
```

Expanded paths
/state/card[slot-number=]/hardware-data/oper-state
/state/card[slot-number=]/mda[mda-slot=]/hardware-data/oper-state
/state/card[slot-number=]/mda[mda-slot=]/flex[group-index=]/oper-state

```
=====
```

## 8.63 explicit-subscriber-map

### explicit-subscriber-map

#### Syntax

**explicit-subscriber-map**

#### Context

[\[Tree\]](#) (show>subscr-mgmt explicit-subscriber-map)

#### Full Context

show subscriber-mgmt explicit-subscriber-map

#### Description

This command displays explicit subscriber mappings.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of subscriber management explicit subscriber map information.

#### Output Example

```
B:Dut-A>show>subscr-mgmt# explicit-subscriber-map  
=====
```

Explicit Subscriber Map	
Key	Sub profile SLA profile
-----	-----
sub_ident_A_1	sub_prof80 sla_prof80
-----	-----
Number of Explicit Subscriber Mappings : 1	

```
=====
```

B:Dut-A>show>subscr-mgmt#

[Table 142: Explicit Subscriber Map Field Descriptions](#) describes subscriber management explicit subscriber map output fields.

*Table 142: Explicit Subscriber Map Field Descriptions*

Field	Description
Key	The explicit subscriber mapping
Number of Explicit Subscriber Mappings	The number of configured explicit subscriber mappings

## 8.64 export

export

### Syntax

export

### Context

[\[Tree\]](#) (clear>router>isis export)

### Full Context

clear router isis export

### Description

This command re-evaluates route policies participating in the export mechanism, either as importers or exporters of routes.

### Platforms

All

export

### Syntax

export

### Context

[\[Tree\]](#) (clear>router>ospf3 export)

[\[Tree\]](#) (clear>router>ospf export)

### Full Context

```
clear router ospf3 export  
clear router ospf export
```

### Description

This command re-evaluates all effective export policies.

### Platforms

All

export

### Syntax

```
export
```

### Context

[\[Tree\]](#) (clear>router>rip export)

### Full Context

```
clear router rip export
```

### Description

This command re-evaluates RIP export policies.

### Platforms

All

export

### Syntax

```
export
```

### Context

[\[Tree\]](#) (clear>router>ripng export)

### Full Context

```
clear router ripng export
```

### Description

This command re-evaluates RIPng export policies.

## Platforms

All

## 8.65 extranet-interface

### extranet-interface

#### Syntax

**extranet-interface**

#### Context

[\[Tree\]](#) (show>router>pim extranet-interface)

#### Full Context

show router pim extranet-interface

#### Description

This command displays extranet interface information.

## Platforms

All

## 9 f Commands

### 9.1 failover

#### failover

##### Syntax

failover

##### Context

[\[Tree\]](#) (tools>perform>router>dhcp>server failover)

[\[Tree\]](#) (tools>perform>router>dhcp6>server>pool failover)

[\[Tree\]](#) (tools>perform>router>dhcp6>server failover)

[\[Tree\]](#) (tools>perform>router>dhcp>server>pool failover)

##### Full Context

tools perform router dhcp local-dhcp-server failover

tools perform router dhcp6 local-dhcp-server pool failover

tools perform router dhcp6 local-dhcp-server failover

tools perform router dhcp local-dhcp-server pool failover

##### Description

Commands in this context perform local DHCP or DHCP6 server failover tasks.

##### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### 9.2 failover-pool-stats

#### failover-pool-stats

##### Syntax

failover-pool-stats [*pool-name*]

## Context

[Tree] (show>router>dhcp6>local-dhcp-server failover-pool-stats)

[Tree] (show>router>dhcp>local-dhcp-server failover-pool-stats)

## Full Context

show router dhcp6 local-dhcp-server failover-pool-stats

show router dhcp local-dhcp-server failover-pool-stats

## Description

This command displays failover pool statistics.

## Parameters

### *pool-name*

Specifies the pool name which is defined in the system.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of failover pool stats information

### Output Example

```
*A:cses-V22>show>router>dhcp>server# failover-pool-stats
=====
Failover config for pool      test
=====
Failover Admin State         outOfService
Failover Oper State          shutdown
Failover Persist Key         0xFFFFFFFF
Administrative MCLT          0h10m0s
Operational MCLT             0h10m0s
Startup Wait Time            0h2m0s
Partner Down Delay           23h59m59s
Ignore MCLT                  disabled
Failover statistics for pool test
-----
Dropped Invalid Packets      0
Failover Shutdown            0
Lease Already Expired        0
Maximum Lease Count Reached  0
Subnet Not Found             0
Range Not Found              0
Host Conflict                 0
Address Conflict             0
Peer Conflict                 0
Persistence Congestion       0
No Lease Hold Time Configured 0
Invalid Prefix Length         0
Lease Not Found              0
-----
Number of pools found        1
=====
```

```
*A:cses-V22>show>router>dhcp>server#

*A:vsim-2# show router 500 dhcp6 local-dhcp-server "d6" failover-pool-stats
=====
Failover config for pool          v6-1
=====
Failover Admin State              inService
Failover Oper State               preNormal
Failover Persist Key              0xFFFFFFFF
Administrative MCLT               0h10m0s
Operational MCLT                  0h10m0s
Startup Wait Time                  0h2m0s
Partner Down Delay                 23h59m59s
  Ignore MCLT                       disabled
Failover statistics for pool      v6-1
-----
Dropped Invalid Packets           0
Failover Shutdown                  0
Lease Already Expired              0
Maximum Lease Count Reached        0
Subnet Not Found                   0
Range Not Found                    0
Host Conflict                       0
Address Conflict                    0
Peer Conflict                       0
Persistence Congestion              0
No Lease Hold Time Configured       0
Lease Not Found                     0
-----
Number of pools found              1
=====
```

Table 143: Failover Pool Statistics Field Descriptions describes failover pool statistics output fields.

Table 143: Failover Pool Statistics Field Descriptions

Field	Description
Failover Admin State	Identifies the failover state of the DHCP server instance inService — The failover admin state is in service outOfService — The failover admin state is out of service
Failover Oper State	The operational state of a DHCP server instance
Failover Persist Key	The maximum amount of time that one server can extend a lease for a client's binding beyond the time known by the partner server
Administrative MCLT	The administrative Maximum Client Lead Time (MCLT)
Operational MCLT	Indicates the operational MCLT
Startup Wait Time	The startup wait time. The startup wait time is the time that one IP address pool attempts to contact the partner IP address pool. During this time, the IP address pool is unresponsive to DHCP client requests.



Field	Description
Partner Down Delay	The minimum safe-time after the beginning of COMMUNICATIONS-INTERRUPTED state. After the expiry of this time, the server enters the PARTNER-DOWN state.
Ignore McLT	The ignore McLT status. If, after the transition COMMUNICATIONS-INTERRUPTED-to-PARTNER-DOWN state, the DHCP server instance ignores the safety period with a duration of Maximum Client Lead Time; a 'true' value has the effect that the DHCP server starts offering IP addresses from the partner's scope immediately after this transition, without waiting for existing leases allocated by the partner and not known by this system to time out.  A 'true' value increases the risk that duplicate addresses are offered; if the transition to PARTNER-DOWN state is likely to be caused by a failure of the partner system rather than a communications problem, this risk is reduced.
Failover statistics for pool	The failover statistics for each pool
Dropped Invalid Packets	The number of BNDUPD packets that were dropped because the packet was malformed
Failover Shutdown	The number of BNDUPD packets that were dropped because the failover state if the DHCP server instance is shut down
Lease Already Expired	The number of BNDUPD packets that were dropped because the corresponding lease has expired
Maximum Lease Count Reached	The number of BNDUPD packets that were dropped because the maximum number of leases were reached
Subnet Not Found	The number of BNDUPD packets that were dropped because a valid subnet could not be found for the lease
Range Not Found	The number of BNDUPD packets that were dropped because a valid include range could not be found for the lease
Host Conflict	The number of BNDUPD packets that were dropped because this DHCP server instance has already leased this address to another host
Address Conflict	The number of BNDUPD packets that were dropped because this DHCP server instance has already leased another address to this host
Peer Conflict	The number of BNDUPD packets that were dropped because the failover peer has leased an address within a

Field	Description
	subnet range of which the failover control is set to <b>local</b> on this local DHCP server instance
Persist Congestion	The number of BNDUPD packets that were dropped because of persistence congestion on this DHCP server instance
No Lease Hold Time Configured	The number of BNDUPD packets that were dropped because the lease hold time is zero on this DHCP server instance
Lease Not Found	The number of Binding Database Update (BNDUPD) remove packets were dropped because the corresponding lease could not be found.
Number of pools found	The total number of pools found

## failover-pool-stats

### Syntax

**failover-pool-stats** [*pool-name*]

### Context

[\[Tree\]](#) (clear>router>dhcp6>server failover-pool-stats)

[\[Tree\]](#) (clear>router>dhcp>server failover-pool-stats)

### Full Context

clear router dhcp6 local-dhcp-server failover-pool-stats

clear router dhcp local-dhcp-server failover-pool-stats

### Description

This command clears failover pool statistics.

### Parameters

***pool-name***

Clears information about the pool name which is defined in the system.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 9.3 failover-server-stats

### failover-server-stats

#### Syntax

**failover-server-stats**

#### Context

**[Tree]** (show>router>dhcp6>local-dhcp-server failover-server-stats)

**[Tree]** (show>router>dhcp>local-dhcp-server failover-server-stats)

#### Full Context

show router dhcp6 local-dhcp-server failover-server-stats

show router dhcp local-dhcp-server failover-server-stats

#### Description

This command displays failover server statistics.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of failover server stats information.

#### Output Example

```
show>router>dhcp# local-dhcp-server "y" failover-server-stats
=====
Failover config for server      y
=====
Failover Admin State           outOfService
Failover Oper State            shutdown
Failover Persist Key           0xFFFFFFFF
Administrative MCLT            0h10m0s
Operational MCLT               0h10m0s
Startup Wait Time              0h2m0s
Partner Down Delay             23h59m59s
Ignore MCLT                    disabled

Failover statistics for server y
-----
Dropped Invalid Packets       0
Failover Shutdown              0
Lease Already Expired          0
Maximum Lease Count Reached   0
Subnet Not Found               0
Range Not Found                0
Host Conflict                   0
Address Conflict                0
```

```

Peer Conflict          0
Persistence Congestion 0
No Lease Hold Time Configured 0
Invalid Prefix Length  0
Lease Not Found       0
=====

*A:cses-V26>show>router>dhcp6>server# failover-server-stats
=====
Failover config for server      test1
=====
Failover Admin State          outOfService
Failover Oper State           shutdown
Failover Persist Key          0xFFFFFFFF
Administrative MCLT           0h10m0s
Operational MCLT              0h10m0s
Startup Wait Time             0h2m0s
Partner Down Delay            23h59m59s
    Ignore MCLT                disabled
Failover statistics for server test1
-----
Dropped Invalid Packets      0
Failover Shutdown            0
Lease Already Expired        0
Maximum Lease Count Reached  0
Subnet Not Found             0
Range Not Found              0
Host Conflict                 0
Address Conflict             0
Peer Conflict                 0
Persistence Congestion       0
No Lease Hold Time Configured 0
Invalid Prefix Length         0
Lease Not Found              0
=====
*A:cses-V26>show>router>dhcp6>server#
    
```

Table 144: Failover Server Statistics Field Descriptions describes failover server stats fields.

Table 144: Failover Server Statistics Field Descriptions

Field	Description
Failover Admin State	Identifiers the failover state of the DHCP server instance inService — The failover admin state is in service outOfService — The failover admin state is out of service
Failover Oper State	The operational state of a DHCP server instance
Failover Persist Key	The maximum amount of time that one server can extend a lease for a client's binding beyond the time known by the partner server
Administrative MCLT	The administrative Maximum Client Lead Time (MCLT)
Operational MCLT	Indicates the operational MCLT

Field	Description
Startup Wait Time	The startup wait time. The startup wait time is the time that one IP address pool attempts to contact the partner IP address pool. During this time, the IP address pool is unresponsive to DHCP client requests.
Partner Down Delay	The minimum safe-time after the beginning of COMMUNICATIONS-INTERRUPTED state.  After the expiry of this time, the server enters the PARTNER-DOWN state.
Ignore McLT	The ignore McLT status. If, after the transition COMMUNICATIONS-INTERRUPTED-to-PARTNER-DOWN state, the DHCP server instance ignores the safety period with a duration of Maximum Client Lead Time; a 'true' value has the effect that the DHCP server starts offering IP addresses from the partner's scope immediately after this transition, without waiting for existing leases allocated by the partner and not known by this system to time out.  A 'true' value increases the risk that duplicate addresses are offered; if the transition to PARTNER-DOWN state is likely to be caused by a failure of the partner system rather than a communications problem, this risk is reduced.
Failover statistics for server	The failover statistics for each pool
Dropped Invalid Packets	The number of BNDUPD packets that were dropped because the packet was malformed
Failover Shutdown	The number of BNDUPD packets that were dropped because the failover state if the DHCP server instance is shut down
Lease Already Expired	The number of BNDUPD packets that were dropped because the corresponding lease has expired
Maximum Lease Count Reached	The number of BNDUPD packets that were dropped because the maximum number of leases were reached
Subnet Not Found	The number of BNDUPD packets that were dropped because a valid subnet could not be found for the lease
Range Not Found	The number of BNDUPD packets that were dropped because a valid include range could not be found for the lease.
Host Conflict	The number of BNDUPD packets that were dropped because this DHCP server instance has already leased this address to another host

Field	Description
Address Conflict	The number of BNDUPD packets that were dropped because this DHCP server instance has already leased another address to this host
Peer Conflict	The number of BNDUPD packets that were dropped because the failover peer has leased an address within a subnet range of which the failover control is set to <b>local</b> on this local DHCP server instance
Persist Congestion	The number of BNDUPD packets that were dropped because of persistence congestion on this DHCP server instance
No Lease Hold Time Configured	The number of BNDUPD packets that were dropped because the lease hold time is zero on this DHCP server instance
Lease Not Found	The number of Binding Database Update (BNDUPD) remove packets were dropped because the corresponding lease could not be found.

## 9.4 failure-recovery

### failure-recovery

#### Syntax

**failure-recovery** {**start** | **abort** | **clear-hold-down**}

#### Context

[\[Tree\]](#) (tools>perform>system>switch-fabric failure-recovery)

#### Full Context

tools perform system switch-fabric failure-recovery

#### Description

This command controls the automatic switch-fabric failure recovery.

#### Parameters

##### **start**

Forces the initiation of the recovery process.

##### **abort**

Terminates a running recovery process.

### clear-hold-down

Clears the hold-down condition and allows the recovery to run immediately when the trigger condition occurs.

### Platforms

7450 ESS, 7750 SR-7, 7750 SR-12e, 7950 XRS

## 9.5 fate-sharing

### fate-sharing

#### Syntax

fate-sharing

#### Context

[\[Tree\]](#) (show>service>id>spb fate-sharing)

#### Full Context

show service id spb fate-sharing

#### Description

This command displays SPB fate-sharing information on User B-VPLS service, in correspond to associated Control B-VPLS service.

#### Platforms

All

#### Output

The following output is an example of service SPB fate sharing information.

#### Output Example

```
*A:Dut-A# Node show service id spb fate-sharing
=====
User service fate-shared sap/sdp-bind information
=====
Control  Control Sap/      FID      User      User Sap/
SvcId    SdpBind
-----
500      1/1/20:500          502      502      1/1/20:502
=====
```

## 9.6 fdb

fdb

### Syntax

```
fdb [sap sap-id [expiry]] | [ sdp sdp-id [expiry]] | [mac ieee-address [expiry]] | endpoint endpoint | [
  detail] [expiry] [pbb]
```

### Context

[\[Tree\]](#) (show>service>id fdb)

### Full Context

```
show service id fdb
```

### Description

This command displays FDB entries for a specified MAC address.

### Parameters

#### **sap-id**

Specifies the physical port identifier portion of the SAP

#### **detail**

Displays detailed information

#### **expiry**

Displays time until MAC is aged out

#### **pbb**

Displays PBB related information. This keyword is only applicable to B-VPLS or I-VPLS services. This parameter applies to the 7450 ESS or 7750 SR only.

#### **endpoint-name**

Specifies an endpoint name up to 32 characters in length. This parameter applies to the 7450 ESS or 7750 SR only.

### Platforms

All

### Output

The following output is an example of service FDB information.

```
show service id 1 fdb
```

### Output Example

```
=====
```



```

Service Id      : 1           Mac Move       : Disabled
Primary Factor  : 3           Secondary Factor : 2
Mac Move Rate   : 2           Mac Move Timeout : 10
Mac Move Retries : 3
Table Size      : 250        Allocated Count : 4
Total In Use    : 4
Learned Count   : 2           Static Count     : 0
OAM MAC Count   : 0           DHCP MAC Count   : 0
Host MAC Count  : 0           Intf MAC Count   : 0
Spb Count       : 0           Cond MAC Count   : 0
BGP EVPN Count  : 0           EVPN Static Cnt  : 2
EVPN Dup Det Cnt : 0
Remote Age      : 900        Local Age        : 300
High Watermark  : 95%        Low Watermark    : 90%
Mac Learning    : Enabled    Discard Unknown  : Disabled
Mac Aging       : Enabled    Relearn Only     : False
Mac Subnet Len  : 48
Sel Learned FDB : Disabled
=====
    
```

The following output is an example of service FDB details information.

```
show service id 1 fdb detail
```

### Output Example

```

=====
Forwarding Database, Service 1
=====
ServId  MAC                Source-Identifier      Type      Last Change
-----  -
1       00:00:00:00:00:01  sap:1/1/1             LP/0      02/24/12 11:40:07
-----  -
No. of MAC Entries: 1
-----  -
Legend:  L=Learned O=Oam P=Protected-MAC C=Conditional S=Static Lf=Leaf
         T=Trusted
=====
    
```

The following output is an example of service FDB details information.

```
show service id 510 fdb detail
```

### Output Example

```

=====
Forwarding Database, Service 510
=====
ServId  MAC                Source-Identifier      Type      Last Change
-----  -
510     00:00:00:aa:aa:aa  sap:1/1/22:510       CStatic   06/14/13 20:16:19
510     00:00:00:bb:bb:bb  sap:1/1/22:510       CStatic   06/14/13 20:14:49
510     00:00:00:dd:dd:dd  sdp:7:2               Spb       06/14/13 20:03:23
510     d8:da:ff:00:00:00  sap:1/1/22:510       CStatic   06/14/13 21:06:38
510     d8:e0:ff:00:00:00  sdp:7:2               Spb       06/14/13 21:09:29
-----  -
No. of MAC Entries: 5
-----  -
Legend:  L=Learned O=Oam P=Protected-MAC C=Conditional S=Static Lf=Leaf
    
```

```
T=Trusted
```

The following output is an example of service FDB MAC details information.

```
show service id fdb mac detail
```

### Output Example

```
=====
Service Forwarding Database
=====
ServId   MAC                Source-Identifier  Type/Age  Last Change
-----
6        00:aa:00:00:00:00  sap:lag-2         L/0       06/27/2006 15:04:31
6        00:aa:00:00:00:01  sap:lag-2         L/0       06/27/2006 15:04:31
6        00:aa:00:00:00:02  sap:lag-2         L/0       06/27/2006 15:04:31
6        00:aa:00:00:00:03  sap:lag-2         L/0       06/27/2006 15:04:31
6        00:aa:00:00:00:04  sap:lag-2         L/0       06/27/2006 15:04:31
10       12:12:12:12:12:12  sap:1/1/1:100    S         06/26/2006 10:03:29
=====
```

The following output is an example of service FDB details information.

```
show service id 1 fdb detail
```

### Output Example

```
=====
Forwarding Database, Service 1
=====
ServId   MAC                Source-Identifier  Type      Age      Last Change
-----
1        00:ca:ca:ba:ca:01  eES:              Evpn      06/29/15 23:21:34
                01:00:00:00:00:71:00:00:00:01
1        00:ca:ca:ba:ca:06  eES:              Evpn      06/29/15 23:21:34
                01:74:13:00:74:13:00:00:74:13
1        00:ca:00:00:00:00  sap:1/1/1:2       CStatic   06/29/15 23:20:58
1        00:ca:fe:ca:fe:00  black-hole        EvpnD:P   06/29/15 23:20:00
1        00:ca:fe:ca:fe:69  eMpls:           EvpnS     06/29/15 20:40:13
                192.0.2.69:262133
1        00:ca:fe:ca:fe:70  eMpls:           EvpnS     06/29/15 20:43:29
                192.0.2.70:262132
1        00:ca:fe:ca:fe:72  eMpls:           EvpnS     06/29/15 20:47:39
                192.0.2.72:262132
-----
No. of MAC Entries: 7
-----
Legend:  L=Learned O=Oam P=Protected-MAC C=Conditional S=Static Lf=Leaf
         T=Trusted
=====
```

The following output is an example of service FDB details information.

```
show service id 200 fdb detail
```

### Output Example

```

=====
Forwarding Database, Service 200
=====
ServId      MAC                Source-Identifier      Type      Last Change
      Transport:Tnl-Id
-----
200         00:ca:ca:ba:ca:61  eMpls:                EvpnS:P   02/25/19  21:13:27
              192.0.2.6:524278
              sr-policy:917509
200         00:ca:ca:ba:ca:62  eMpls:                EvpnS:P   02/25/19  21:13:27
              192.0.2.6:524278
              sr-policy:917506
200         00:ca:fe:ca:fe:01  sap:1/1/c1/1:200      L/30      02/25/19  21:13:22
200         00:ca:fe:ca:fe:06  eMpls:                Evpn       02/25/19  21:13:27
              192.0.2.6:524278
              sr-policy:917507
-----
No. of MAC Entries: 4
-----
Legend:  L=Learned  O=0am  P=Protected-MAC  C=Conditional  S=Static  Lf=Leaf
          T=Trusted
=====
    
```

The following output is an example of service FDB details information.

```
show service id "900" fdb detail
```

### Output Example

```

=====
Forwarding Database, Service 900
=====
ServId      MAC                Source-Identifier      Type      Last Change
      Transport:Tnl-Id
-----
900         00:ca:ca:de:ba:ca  sap:pxc-3.a:900       LT/0      05/12/22  19:25:03
900         00:ca:ca:de:ba:cb  mpls-1:                Evpn       05/12/22  19:24:58
              192.0.2.5:524249
              ldp:65538
-----
No. of MAC Entries: 1
-----
Legend:  L=Learned  O=0am  P=Protected-MAC  C=Conditional  S=Static  Lf=Leaf
          T=Trusted
=====
    
```

The following output is an example of service FDB PBB information.

```
show service id 2000 fdb pbb
```

### Output Example

```

=====
Forwarding Database, bVpls Service 2000
=====
MAC                Source-Identifier      iVplsMACs  Type/Age  Last Change
-----
00:f4:f4:f4:f4:f4  sdp:100:2000          10          L/0       09/25/2007  15:34:19
    
```

The following output is an example of service FDB PBB information.

```
show service id 2100 fdb pbb
```

### Output Example

```
=====
Forwarding Database, iVpls Service 2100
=====
MAC                Source-Identifier  B-Svc    bVpls MAC        Type/Age
-----
76:55:ff:00:01:a4 b-sdp:100:2000    2000     00:f4:f4:f4:f4:ff L/0
76:55:ff:00:01:bb sap:1/1/1:2100    2000     N/A               Static
=====
```

The following output is an example of service FDB PBB information.

```
show service id 2100 fdb pbb
```

### Output Example

```
=====
Forwarding Database, iVpls Service 2100
=====
MAC                Source-Identifier  B-Svc    bVpls MAC        Type/Age
-----
00:f4:f4:f4:00:00 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:01 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:02 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:03 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:04 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:05 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:06 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:07 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:08 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f4:f4:f4:00:09 b-sdp:100:2000    2000     00:f4:f4:f4:f4:f4 L/0
00:f7:f7:f7:00:00 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:01 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:02 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:03 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:04 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:06 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:07 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:08 sap:lag-1:2100    2000     N/A               L/0
00:f7:f7:f7:00:09 sap:lag-1:2100    2000     N/A               L/0
=====
```

The following output is an example of service FDB PBB information.

```
show service id 2100 fdb pbb
```

### Output Example

```
=====
Forwarding Database, iVpls Service 2100
=====
MAC                Source-Identifier  B-Svc    bVpls MAC        Type/Age
```

```
-----
76:55:ff:00:01:a4 b-sdp:100:2000      2000      00:f4:f4:f4:f4:ff L/0
76:55:ff:00:01:bb sap:1/1/1:2100    2000      N/A        Static
=====
```

Table 145: Show FDB Information Fields describes service FDB output fields.

Table 145: Show FDB Information Fields

Label	Description
ServID	Displays the service ID.
MAC	Displays the associated MAC address.
Transport:Tnl-Id	Displays the tunnel type and tunnel ID of the FDB entry.
Source Identifier	Displays the id of the source MAC.
Type/Age	Type — Specifies the number of seconds used to age out TLS FDB entries learned on local SAPs. Age — Specifies the number of seconds used to age out TLS FDB entries learned on an SDP. These entries correspond to MAC addresses learned on remote SAPs. L — Learned - Dynamic entries created by the learning process. OAM — Entries created by the OAM process. P — Indicates the MAC is protected by the MAC protection feature. H — Host, the entry added by the system for a static configured subscriber host. D or DHCP — DHCP-installed MAC. Learned addresses can be temporarily frozen by the DHCP snooping application for the duration of a DHCP lease. Static — Statically configured. T — Trusted.
Last Change	Indicates the time of the most recent state changes.

## fdb

### Syntax

```
fdb {all | mac ieee-address | sap sap-id | mesh-sdp sdp-id [: vc-id] | spoke-sdp sdp-id [:vc - id] |
    vxlan-instance instance [vtep ip- address]}
```

### Context

[Tree] (clear>service>id fdb)

## Full Context

```
clear service id fdb
```

## Description

This command clears the FDB entries for the service.

## Parameters

### **all**

Clears all FDB entries.

### **ieee-address**

Clears only FDB entries in the FDB table with the specified 48-bit address. The MAC address can be expressed in the form aa:bb:cc:dd:ee:ff or aa-bbcc-dd-ee-ff where aa, bb, cc, dd, ee and ff are hexadecimal numbers.

### **sap-id**

Clears the physical port identifier portion of the SAP definition.

### **mesh-sdp**

Clears only the service FDB entries associated with the specified mesh SDP ID. For a mesh SDP, the VC ID is optional.

### **spoke-sdp**

Clears only the service FDB entries associated with the specified spoke-SDP ID. For a spoke-SDP, the VC ID must be specified.

### **sap-id**

Specifies the SDP ID for which the associated FDB entries will be cleared.

### **vc-id**

Specifies the virtual circuit ID on the SDP ID for which the associated FDB entries are cleared.

<b>Values</b>	sdp-id[:vc-id] sdp-id: 1 to 32767
	vc-id: 1 to 4294967295
	sdp-id:vc-id sdp-id: 1 to 32767
	vc-id: 1 to 4294967295

### **instance**

Clears only the service FDB entries associated with the specified static VXLAN instance.

<b>Values</b>	1, 2
---------------	------

### **vtep ip-address**

Specifies, optionally and along with the VXLAN instance, a specific configured static egress VTEP to clear the FDB entries associated only with the VTEP.

## Platforms

All

## fdb

### Syntax

**fdb**

### Context

[\[Tree\]](#) (show>service>id>spb fdb)

### Full Context

show service id spb fdb

### Description

This command displays SPB Forwarding database information (FDB).

### Platforms

All

### Output

The following output is an example of service SPB FDB information.

### Output Example

```
*A:Dut-A# show service id 100001 spb fdb
=====
User service FDB information
=====
MacAddr           UCast Source      State  MCast Source      State
-----
00:10:00:01:00:02 1/2/2:1.1         ok     1/2/2:1.1         ok
00:10:00:01:00:03 1/2/3:1.1         ok     1/2/3:1.1         ok
00:10:00:01:00:04 1/2/2:1.1         ok     1/2/2:1.1         ok
-----
Entries found: 3
=====
```

## fdb

### Syntax

**fdb**

### Context

[\[Tree\]](#) (tools>dump>service>id fdb)

### Full Context

tools dump service id fdb

## Description

Commands in this context dump selective learned FDB information.

## Platforms

All

## 9.7 fdb-info

### fdb-info

## Syntax

**fdb-info**

## Context

[\[Tree\]](#) (show>service fdb-info)

## Full Context

show service fdb-info

## Description

Displays global FDB usage information.

## Platforms

All

## Output

The following output is an example of service FDB information.

### Output Example

```
*A:PE1# show service fdb-info
=====
Forwarding Database(FDB) Information
=====
Service Id       : 1                Mac Move       : Disabled
Primary Factor   : 3                Secondary Factor : 2
Mac Move Rate    : 2                Mac Move Timeout : 10
Mac Move Retries : 3
Table Size       : 250              Allocated Count : 3
Total In Use     : 3
Learned Count    : 2                Static Count    : 0
OAM MAC Count    : 0                DHCP MAC Count  : 0
Host MAC Count   : 0                Intf MAC Count  : 0
Spb Count        : 0                Cond MAC Count  : 0
BGP EVPN Count   : 0                EVPN Static Cnt : 2
EVPN Dup Det Cnt : 0
Remote Age       : 900              Local Age       : 300
High Watermark   : 95%              Low Watermark   : 90%
```



```

Mac Learning      : Enabled          Discard Unknown   : Disabled
Mac Aging         : Enabled          Relearn Only     : False
Mac Subnet Len   : 48
Sel Learned FDB  : Disabled
Service Id       : 2                Mac Move         : Disabled
Primary Factor   : 3                Secondary Factor  : 2
Mac Move Rate    : 2                Mac Move Timeout : 10
Mac Move Retries : 3
Table Size       : 250              Allocated Count  : 2
Total In Use     : 2
Learned Count    : 4                Static Count     : 0
OAM MAC Count   : 0                DHCP MAC Count   : 0
Host MAC Count   : 0                Intf MAC Count   : 0
Spb Count        : 0                Cond MAC Count   : 0
BGP EVPN Count   : 0                EVPN Static Cnt  : 0
EVPN Dup Det Cnt : 0
Remote Age       : 900              Local Age        : 300
High Watermark   : 95%             Low Watermark    : 90%
Mac Learning     : Enabled          Discard Unknown   : Disabled
Mac Aging        : Enabled          Relearn Only     : False
Mac Subnet Len   : 48
Sel Learned FDB  : Disabled
-----
Total Service FDBs : 2
Total FDB Configured Size : 500
Total FDB Entries In Use : 5
PBB MAC Address Indices In Use : 0
-----
=====
*A:PE1#
    
```

Table 146: Show FDB Information Fields describes show FDB-Info command output.

Table 146: Show FDB Information Fields

Label	Description
ServID	Displays the service ID.
MAC	Displays the associated MAC address.
Mac Move	Displays the administrative state of the MAC movement feature associated with this service.
Primary Factor	Displays a factor for the primary ports defining how many MAC-relearn periods should be used to measure the MAC-relearn rate.
Secondary Factor	Displays a factor for the secondary ports defining how many MAC-relearn periods should be used to measure the MAC-relearn rate.
Mac Move Rate	Displays the maximum rate at which MACs can be re-learned in this service, before the SAP where the moving MAC was last seen is automatically disabled in order to protect the system against undetected loops or duplicate MAs.  The rate is computed as the maximum number of re-learns

Label	Description
	allowed in a 5 second interval: for example, the default rate of 2 re-learns per second corresponds to 10 re-learns in a 5 second period.
Mac Move Timeout	Displays the time in seconds to wait before a SAP that has been disabled after exceeding the maximum re-learn rate is re-enabled.  A value of zero indicates that the SAP will not be automatically re-enabled after being disabled. If after the SAP is re-enabled it is disabled again, the effective retry timeout is doubled in order to avoid thrashing.
Mac Move Retries	Displays the number of times retries are performed for re-enabling the SAP/SDP.
Table Size	Specifies the maximum number of learned and static entries allowed in the FDB of this service.
Allocated Count	Displays the total number of allocated entries in the FDB of this service.
Total In Use	Displays the total number of entries in use in the FDB of this service.
Learned Count	Displays the current number of learned entries in the FDB of this service.
Static Count	Displays the current number of static entries in the FDB of this service.
OAM MAC Count	Displays the current number of OAM entries in the FDB of this service.
DHCP MAC Count	Displays the current number of DHCP-learned entries in the FDB of this service.
Host MAC Count	Displays the current number of host-learned entries in the FDB of this service.
Intf MAC Count	Displays the total number of interface MAC entries in the FDB of this service.
SPB Count	Displays the total number of SPB entries in the FDB of this service.
Cond MAC Count	Displays the total number of conditional static MAC entries in the FDB of this service.
BGP EVPN Count	Displays the total number of BGP EVPN entries in the FDB of this service.

Label	Description
EVPN Static Cnt	Displays the total number of BGP EVPN MAC entries with the sticky bit set in the FDB of this service.
EVPN Dup Det Cnt	Displays the total number of times a BGP EVPN duplicate MAC address has been detected in this service.
Remote Age	Displays the number of seconds used to age out FDB entries learned on an SDP. These entries correspond to MAC addresses learned on remote SAPs.
Local Age	Displays the number of seconds used to age out FDB entries learned on local SAPs.
High Watermark	Displays the utilization of the FDB table of this service at which a table full alarm will be raised by the agent.
Low Watermark	Displays the utilization of the FDB table of this service at which a table full alarm will be cleared by the agent.
Mac Learning	Specifies whether the MAC learning process is enabled.
Discard Unknown	Specifies whether frames received with an unknown destination MAC are discarded.
Mac Aging	Indicates whether the MAC aging process is enabled.
Relearn Only	When one of the FDB table size limits (service, line card, system) has been reached, the learning of new MAC addresses is temporary disabled and only MAC relearns are allowed. When in this state, the Relearn Only flag is True, otherwise it is False.
Mac Subnet Len	Displays the number of bits to be considered when performing MAC-learning or MAC-switching.
Source-Identifier	The location where the MAC is defined.
Type/Age	<p>Type — Specifies the number of seconds used to age out TLS FDB entries learned on local SAPs.</p> <p>Age — Specifies the number of seconds used to age out TLS FDB entries learned on an SDP. These entries correspond to MAC addresses learned on remote SAPs.</p> <p>L — Learned - Dynamic entries created by the learning process.</p> <p>OAM — Entries created by the OAM process.</p> <p>H — Host, the entry added by the system for a static configured subscriber host.</p> <p>D or DHCP — DHCP-installed MAC. Learned addresses can be temporarily frozen by the DHCP snooping application for the duration of a DHCP lease.</p>

Label	Description
	P — Indicates the MAC is protected by the MAC protection feature. Static — Statically configured.
Last Change	Indicates the time of the most recent state changes.
Sel Learned FDB	Displays the administrative state of the selective learned FDB feature associated with this service.

## 9.8 fdb-mac

### fdb-mac

#### Syntax

**fdb-mac** *ieee-address* [**expiry**]

#### Context

[\[Tree\]](#) (show>service fdb-mac)

#### Full Context

show service fdb-mac

#### Description

This command displays the FDB entry for a specified MAC address.

#### Parameters

##### *ieee-address*

The 48-bit MAC address for which the FDB entry will be displayed in the form *aa:bb:cc:dd:ee:ff* or *aa-bb-cc-dd-ee-ff* where *aa*, *bb*, *cc*, *dd*, *ee* and *ff* are hexadecimal numbers.

##### **expiry**

Shows the time until the MAC is aged out.

#### Platforms

All

#### Output

The following output is an example of FDB MAC information.

#### Output Example

```
*A:ian2# show service fdb-mac
=====
```

```

Service Forwarding Database
=====
ServId   MAC                Source-Identifier      Type   Last Change
          Age
-----
1        00:00:00:00:00:01  sap:1/1/1             LP/0   01/07/2011 20:25:34
1        00:00:00:00:00:02  sap:1/1/2             L/0    01/07/2011 20:26:25
1        00:00:00:00:00:03  sap:1/1/1             A/0    01/07/2011 20:25:34
-----
No. of Entries: 2
-----
Legend: L=Learned; P=MAC is protected; A=Auto learn protected
=====
*A:ian2#
    
```

The following shows the protected MACs in the FDB.

```

A:term17>config>service>vpls>sap>arp-host# show service id 12 fdb detail
=====
Forwarding Database, Service 12
=====
ServId   MAC                Source-Identifier      Type   Last Change
          Age
-----
12       00:00:07:00:00:00  sdp:8:1               LP/0   10/03/11 10:46:00
12       00:00:07:00:00:01  sdp:8:1               LP/0   10/03/11 10:46:00
12       00:00:07:00:00:62  sdp:8:1               LP/0   10/03/11 10:46:01
12       00:00:07:00:00:63  sdp:8:1               LP/0   10/03/11 10:46:01
12       00:11:11:11:11:11  sap:lag-100:12        Static:P 10/03/11 09:42:02
12       00:11:11:11:11:22  sap:lag-1:123         Static   10/03/11 09:42:02
12       00:11:11:11:11:33  sdp:8:1               Static:P 10/03/11 09:42:02
12       00:11:11:11:11:44  sap:2/1/3:13          Static   10/03/11 09:42:02
12       00:11:11:11:11:55  a(8:80)               Static   10/03/11 09:42:02
12       00:11:11:11:11:66  sdp:8:10              Static   10/03/11 09:42:02
12       00:11:11:11:11:77  sap:2/1/3:15          Static   10/03/11 09:42:02
12       00:11:11:11:11:88  sap:2/1/3:14          Static   10/03/11 09:42:02
12       76:1e:ff:00:00:b2  cpm                   Host     10/03/11 09:42:02
-----
No. of MAC Entries: 109
    
```

The following output is an example of whether restrict-protected-src is enabled on an SDP.

```

*A:PE# show service id 1 sdp 1:1 detail
=====
Service Destination Point (Sdp Id : 1:1) Details
=====
-----
Sdp Id 1:1  -(1.1.1.2)
-----
...
RestMacProtSrc Act : SDP-oper-down
    
```

[Table 147: Show FDB-MAC Command Output Fields](#) describes the show FDB-MAC command output fields.

Table 147: Show FDB-MAC Command Output Fields

Label	Description
Service ID	The service ID number.
MAC	The specified MAC address.
Source-Identifier	The location where the MAC is defined.
Type/Age	Static — FDB entries created by management.
	Learned — Dynamic entries created by the learning process.
	OAM — Entries created by the OAM process.
	H — Host, the entry added by the system for a static configured subscriber host.
	D or DHCP — DHCP-installed MAC. Learned addresses can be temporarily frozen by the DHCP snooping application for the duration of a DHCP lease.
	P — Indicates the MAC is protected by the MAC protection feature.

## 9.9 fdb-usage

### fdb-usage

#### Syntax

**fdb-usage** [*card slot-id*]

#### Context

[\[Tree\]](#) (show>service>system fdb-usage)

#### Full Context

show service system fdb-usage

#### Description

This command displays the FDB usage, excluding the pending updates (which can be seen using the tools `dump service id id fdb {card-status | mac-status}` command) for the system and all line cards.

## Parameters

### *slot-id*

Displays the information for the line card in the specified slot IDs, expressed as an integer.

**Values** 1 to 20

## Platforms

All

## Output

The following output is an example of FDB usage information.

### Output Example

```
*A:PE1# show service system fdb-usage
=====
FDB Usage
=====
System
-----
Limit:      511999
Allocated:  8
Free:       511991
Global:     2
-----
Line Cards
-----
Card        Selective      Allocated      Limit          Free
-----
1           0              2              511999         511997
2           4              6              511999         511993
5           2              4              511999         511995
-----
=====
*A:PE1#
*A:PE1# show service system fdb-usage card 1
=====
FDB Usage
=====
Card        Selective      Allocated      Limit          Free
-----
1           0              2              511999         511997
-----
=====
*A:PE1#
```

## 9.10 fec

### fec

## Syntax

**fec** *vc-type* *vc-type* *agi* *agi*

```
fec p2mp-id identifier root ip-address  
fec prefix ip-address[/mask]  
fec root ip-address source ip-address group mcast-address [rd rd]  
fec root ip-address source ip-address group mcast-address inner-root ip-address  
fec vc-type vc-type vc-id vc-id  
fec vc-type vc-type agi agi saii-type2 global-id:prefix:ac-id taii-type2 global-id:prefix:ac-id
```

## Context

[\[Tree\]](#) (tools>dump>router>ldp fec)

## Full Context

```
tools dump router ldp fec
```

## Description

This command dumps information for an LDP FEC.

## Parameters

### **p2mp-id** *identifier*

Dumps LDP active P2MP identifier bindings information.

**Values** 0 to 4294967295

### **inner-root** *ip-address*

Dumps inner root IP address information.

### **root** *ip-address*

Dumps root IP address information.

### **prefix** *ip-address[/mask]*

Dumps LDP active prefix and mask information.

**Values** ip-address[/mask]:

ipv4-prefix	a.b.c.d
ipv4-prefix- le	0 to 32
ipv6-prefix	x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF] H
	d: [0 to 255] D
ipv6-prefix- le	0 to 128



**source ip-address**

Dumps source IP address information.

**group mcast-address**

Dumps the group multicast address bindings.

**rd rd**

Dumps information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

**vc-type vc-type**

Dumps information for the specified VC type.

**Values** ethernet, vlan, framerelay, atm-all5, atm-cell, hdlc, ppp, cem, atm-vcc, atm-vpc, ipipe, atm-vcc-1-1, atm-vpc-1-1, atm-aal5-pdu, fr, cep, e1-satop, t1-satop, e3-satop, t3-satop, cesopsn, tdmop, cesopsn-cas, tdmop-cas, fr-dlci, mirror

**vc-id vc-id**

Dumps information for the specified VC-ID.

**Values** 1 to 4294967295

**agi agi**

Specifies the Attachment Group identifier TLV associated with this service FEC.

**Values** <ip-addr:comm-val> | <2byte-asnumber:ext-comm-val> | <4byte-asnumber:comm-val>  
ip-addr - a.b.c.d  
comm-val - [0 to 65535]  
2byte-asnumber - [1 to 65535]  
ext-comm-val - [0 to 4294967295]  
4byte-asnumber - [1 to 4294967295]  
null - means all value is 0

**saii-type2 global-id:prefix:ac-id**

Dumps Source Attachment Individual Identifier (SAII) information.

**Values** <number>:<number> | <a.b.c.d>:<number>

**taii-type2 global-id:prefix:ac-id**

Dumps Target Attachment Individual Identifier (TAII)

**svc-fec-type**

Specifies the FEC type.

**Values** fec128, fec129

## Platforms

All

## Output

LDP FEC Output

### Output Example

```
A:Dut-A# tools dump router ldp fec root 10.20.1.3 source 10.0.101.10 group
192.168.1.1 inner-root 10.20.1.6
P2MP: root: 10.20.1.3, T: 7, L: 21 (InnerRoot: 10.20.1.6 T: 3, L:8, Src:
10.0.101.10, Grp: 192.168.1.1)
  Create Time   : 01/27/16 16:39:04.097 (elapsed: 0d 03:20:24)
  Last Mod. Time: 01/27/16 16:39:04.097 (elapsed: 0d 03:20:24)
  FEC Flags    : Pop UprStitched
  TunlIfId: 73728 (OperState : up)
  LSP ID      : 0
  LSP ID Acct. : 0
  isIngressMtm : No          HasLeaf      : Yes
  isIngrItermdte: No
  CanProgIngress: No
  InPhopFrr   : No
  isStitchedUpr : Yes
  RslvdPhop(p) : 10.20.1.2:0 (seqNum 2)
  RslvdPhop(b) : 0.0.0.0:0 (seqNum 0)
  pri Upstream : 10.20.1.2:0, AdvLabel 262139
  mbb Upstream : None
  bkp Upstream : None
  AdvInLabel(p) : 262139
  AdvInLabel(b) : 0
  PrgInLabel(p) : 1
  Num Resolved  Nhops : 1
  Num MBB Req.  Nhops : 0
  Num Programmed Nhops : 1
    Programmed Nhop[01] : 0.0.0.0:0, OutLabel 0 (Leaf)(StitchedFec)
  Metric       : 0          Mtu       : 0
  Num of Peers : 1
  FEC Peer: 10.20.1.2:0
    Peer Flags: none (0x0)
    ModTime   : 01/27/16 16:39:04.097 (elapsed.: 0d 03:20:24)
    ->Num Egress Labels:
      None
    <-Num Ingress Labels:
      <- (Label: 262139   Status: UsePop)
      Rej Status: OK
      Flow Label Tx: no, Rx: no
      Flow Label Tx Sent: no, Rx Sent: no
    <Resolved as CUR Upstream>
```

### Output Example

```
tools dump router ldp fec prefix 10.20.1.1/32
Prefix: 10.20.1.1/32
  Create Time   : 06/08/20 13:06:49.980 (elapsed: 0d 00:13:42)
  Last Mod. Time: 06/08/20 13:19:51.740 (elapsed: 0d 00:00:40)
  FEC Flags    : Push Swap Ttm PropTtlLcl PropTtlTra Frr
  FEC typedFlags: NeedTtm
  default label : 524283
  LSP ID      : 65537
  LSP ID Acct. : 13
  IsResolved  : Yes IsLocal: No IsLocalMHSec: No RsvldAsNLStitch: No
```

```

        isStatic: No isMate: No
        IsOverTunnel/Direct/Shortcut/CBF: No/No/No/none
        inFrr: No
    inLabel      : 524283 metric: 100 bkp-metric: 200 mtu: 1556
    Route        : IPv4: 10.20.1.1/32 owner: ISIS(12)
                  : R-LFA PQ RtrId: 10.20.1.4 nhop: 1.0.35.5 ifIdx: 3 metric: 200
    Resolution   :
        [01]: Next Hop: 1.0.35.5   Interface: 3 Inner Label: 524283 (Bkp)
              owner   : 10.20.1.5:0 egress label: 524281
        [02]: Next Hop: 1.0.13.1   Interface: 2 Inner Label: 0
              owner   : 10.20.1.1:0 egress label: 524287
    
```

Table 148: LDP FEC Output Fields describes the LDP FEC parameters output fields.

Table 148: LDP FEC Output Fields

Label	Description
LSP ID	Specifies the LSP identifier.
Metric	Specifies the metric type of the LSP.
inLabel	Specifies the incoming MPLS label on which to match.
egress Label	Specifies the egress label associated with this next-hop entry.

## 9.11 fec-egress-stats

### fec-egress-stats

#### Syntax

**fec-egress-stats** [*ip-prefix/mask*]

**fec-egress-stats** [**active**] [**family**]

#### Context

[\[Tree\]](#) (show>router>ldp fec-egress-stats)

#### Full Context

show router ldp fec-egress-stats

#### Description

This command displays LDP prefix FECs egress statistics.

#### Parameters

***ip-prefix***

Specify information for the specified IP prefix. Host bits must be 0.

**mask**

Specifies the address mask used to indicate the bits of an IP address that are being used for the subnet address.

**Values** IPv4: 0 to 32  
 IPv6: 0 to 128

**family**

Displays either IPv4 or IPv6 LDP session information.

**Platforms**

All

**Output**

The following output is an example of LDP FEC egress statistics information.

**Output Example**

```
*A:Dut-C>config>router>ldp# show router ldp fec-egress-stats 3ffe::a14:101/128
=====
LDP IPv6 FEC Egress Statistics
=====
-----
FEC Prefix/Mask      : 3ffe::a14:101/128
-----
Collect Stats       : Enabled           Accounting Plcy.    : Default
Admin State        : Up
FC BE
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC L2
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC AF
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC L1
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC H2
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC EF
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC H1
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC NC
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0

Aggregate Packets  : 0
Aggregate Octets   : 0
=====
LDP IPv6 FEC Egress Statistics: 1
=====
*A:Dut-C>config>router>ldp#
```

```

*A:Dut-C>config>router>ldp# show router ldp fec-egress-stats active
=====
LDP IPv4 FEC Egress Statistics
=====
No Matching Entries Found
=====

LDP IPv6 FEC Egress Statistics
=====
-----
FEC Prefix/Mask      : 3ffe::a14:101/128
-----
Collect Stats       : Enabled           Accounting Plcy.    : Default
Admin State        : Up
FC BE
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC L2
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC AF
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC L1
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC H2
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC EF
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC H1
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC NC
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
=====
LDP IPv6 FEC Egress Statistics: 1
=====

*A:Dut-C>config>router>ldp# show router ldp fec-egress-stats active ipv6
=====
LDP IPv6 FEC Egress Statistics
=====
-----
FEC Prefix/Mask      : 3ffe::a14:101/128
-----
Collect Stats       : Enabled           Accounting Plcy.    : Default
Admin State        : Up
FC BE
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC L2
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC AF
InProf Pkts        : 0                 OutProf Pkts       : 0
InProf Octets      : 0                 OutProf Octets     : 0
FC L1
InProf Pkts        : 0                 OutProf Pkts       : 0
    
```

```

InProf Octets      : 0                OutProf Octets    : 0
FC H2
InProf Pkts       : 0                OutProf Pkts     : 0
InProf Octets     : 0                OutProf Octets   : 0
FC EF
InProf Pkts       : 0                OutProf Pkts     : 0
InProf Octets     : 0                OutProf Octets   : 0
FC H1
InProf Pkts       : 0                OutProf Pkts     : 0
InProf Octets     : 0                OutProf Octets   : 0
FC NC
InProf Pkts       : 0                OutProf Pkts     : 0
InProf Octets     : 0                OutProf Octets   : 0
=====
LDP IPv6 FEC Egress Statistics: 1
=====
*A:Dut-C>config>router>ldp#

*A:Dut-C>config>router>ldp# show router ldp statistics-summary
=====
Statistics Summary
=====
LDP FEC IPv4 Prefix Egress statistics : 0
LDP FEC IPv6 Prefix Egress statistics : 1
=====
*A:Dut-C>config>router>ldp#
    
```

## fec-egress-stats

### Syntax

**fec-egress-stats** *ip-prefix/mask* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>router>ldp fec-egress-stats)

### Full Context

monitor router ldp fec-egress-stats

### Description

This command monitors egress statistics for LDP FEC prefixes.

### Parameters

#### *ip-prefix/mask*

Specifies information for the specified IP prefix and mask length.

#### Values

ipv4-prefix	a.b.c.d
ipv4-prefix- le	0 to 32

ipv6-prefix x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x: [0 to FFFF] H  
d: [0 to 255] D  
ipv6-prefix-  
le 0 to 128

### **seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic instead of the delta.

## **Platforms**

All

## **9.12 fec-originate**

### fec-originate

#### **Syntax**

**fec-originate** [*ip-prefix/mask*] [*operation-type*]

#### **Context**

**[Tree]** (show>router>ldp fec-originate)

## Full Context

```
show router ldp fec-originate
```

## Description

This command displays LDP static prefix FECs.

## Parameters

### *ip-prefix*

Specify information for the specified IP prefix. Host bits must be 0.

### *mask*

Specifies the 32-bit address mask used to indicate the bits of an IP address that are being used for the subnet address.

**Values** 0 to 32

### *operation-type*

Specify the operation type to display.

**Values** pop, swap

## Platforms

All

## Output

FEC Originate Output

[Table 149: FEC Originate Output Fields](#) describes the FEC originate parameters output fields.

*Table 149: FEC Originate Output Fields*

Label	Description
Prefix	Specifies the static prefix FEC.
NHType	Specifies the type of next-hop represented by this row entry: unknown — The next-hop type has not been set. IP Addr — The next-hop is an IP address. pop — There is no next-hop (pop the label and route).
NextHop	The IP address of the next-hop.
NHIfName	The name of the next-hop.
IngLabel	Specifies the label that is advertised to the upstream peer. If this variable is set to the default value of 4294967295, the ingress label will be dynamically assigned by the label manager.
EgrLabel	Specifies the egress label associated with this next-hop entry. The LSR will swap the incoming label with the configured egress label. If this



Label	Description
	egress label has a value of 4294967295, the LSR will pop the incoming label.
OprInLbl OperIngLabel	Specifies the actual or operational value of the label that was advertised to the upstream peer.

### Output Example

```
*A:SRU4>config>router>ldp# show router ldp fec-originate
=====
LDP Static Prefix FECs
=====
Prefix                NHType  NextHop      IngLabel    EgrLabel    OperIngLabel
-----
10.1.0.0/16           Pop     n/a         --         --         0
10.1.0.1/32          Pop     n/a         --         --         0
10.1.0.2/32          Pop     n/a         --         --         0
10.1.0.3/32          Pop     n/a         --         --         0
10.1.0.4/32          Pop     n/a         --         --         0
10.1.0.5/32          Pop     n/a         --         --         0
10.1.0.6/32          Pop     n/a         --         --         0
10.1.0.7/32          Pop     n/a         --         --         0
10.1.0.8/32          Pop     n/a         --         --         0
10.1.0.9/32          Pop     n/a         --         --         0
...
10.251.0.0/16        Pop     n/a         --         --         0
10.252.0.0/16        Pop     n/a         --         --         0
10.253.0.0/16        Pop     n/a         --         --         0
10.254.0.0/16        Pop     n/a         --         --         0
-----
No. of FECs: 508
=====
*A:SRU4>config>router>ldp#

*A:Dut-C>config>router>ldp# show router ldp fec-originate 3ffe::0b0b:0101/128
=====
LDP IPv6 Static Prefix FECs
=====
Prefix                NHType  IngLbl    EgrLbl    OprInLbl
NextHop
NHIfName
-----
3ffe::b0b:101/128    Pop     --         --         0
n/a
--
-----
No. of IPv6 Static Prefix FECs: 1
=====
*A:Dut-C>config>router>ldp#

*A:Dut-C>config>router>ldp# show router ldp fec-originate 3ffe::0b0b:0101/128 pop
=====
LDP IPv6 Static Prefix FECs
=====
Prefix                NHType  IngLbl    EgrLbl    OprInLbl
NextHop
NHIfName
-----
3ffe::b0b:101/128    Pop     --         --         0
```

```

n/a
--
-----
No. of IPv6 Static Prefix FECs: 1
=====
*A:Dut-C>config>router>ldp#

*A:Dut-C>config>router>ldp# show router ldp fec-originate pop
=====
LDP IPv4 Static Prefix FECs
=====
Prefix          NHType  NextHop          IngLbl  EgrLbl  OprInLbl
NHIfName
-----
No Matching Entries Found
=====

LDP IPv6 Static Prefix FECs
=====
Prefix          NHType  IngLbl  EgrLbl  OprInLbl
NextHop
NHIfName
-----
3ffe::b0b:101/128  Pop      --      --      0
n/a
--
-----
No. of IPv6 Static Prefix FECs: 1
=====
*A:Dut-C>config>router>ldp# show router ldp fec-originate pop ipv6
=====
LDP IPv6 Static Prefix FECs
=====
Prefix          NHType  IngLbl  EgrLbl  OprInLbl
NextHop
NHIfName
-----
3ffe::b0b:101/128  Pop      --      --      0
n/a
--
-----
No. of IPv6 Static Prefix FECs: 1
=====
*A:Dut-C>config>router>ldp# show router ldp fec-originate pop ipv4
=====
LDP IPv4 Static Prefix FECs
=====
Prefix          NHType  NextHop          IngLbl  EgrLbl  OprInLbl
NHIfName
-----
No Matching Entries Found
=====
*A:Dut-C>config>router>ldp#
    
```

## 9.13 fetch-ahs-log

### fetch-ahs-log

#### Syntax

**fetch-ahs-log** **period** *days* **file-url** *file-url*

#### Context

[\[Tree\]](#) (tools>perform>esa fetch-ahs-log)

#### Full Context

tools perform esa fetch-ahs-log

#### Description

This command retrieves the ESA instance AHS log for a specified number of past days and copies it to a local or remote destination.



**Note:** To retrieve an AHS log that includes all AHS log events saved on the ESA, configure the **period** keyword to use a value of *all*. This is helpful when trying to retrieve a record of AHS log events occurring over 31 days ago.

#### Parameters

**period** *days*

Specifies the number of past days for which AHS log events are retrieved.

**Values** 1 to 31, all

**file-url** *file-url*

Specifies a local or remote destination for the AHS log.

**Values**

*local-url* | *remote-url*

*local-url*

*[cflash-id]/file-path* 200 characters maximum, including cflash-id

directory length 99 characters maximum each

*remote-url*

{ftp | tftp}://[login:pswd@]remote-locn/[filepath]

255 characters maximum, *filepath* 199 characters maximum

*remote-locn*

{hostname | ipv4-address | "[ipv6-address]" }[:port]

<i>ipv4-address</i>	<i>a.b.c.d</i>
<i>ipv6-address</i>	<i>x:x:x:x:x:x:x[-interface]</i> <i>x:x:x:x:x:x:d.d.d.d[-interface]</i> <i>x</i> - [0 to FFFF]H <i>d</i> - [0 to 255]D interface - 32 characters maximum, for link local addresses
<i>port</i>	[0 to 65535]
<i>cflash-id</i>	cf1:   cf1-A:   cf1-B:   cf2:   cf2-A:   cf2-B:   cf3:   cf3-A:   cf3-B:

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s

## Output

Use the following command to copy the AHS log to a local destination.

```
tools perform esa 1 fetch-ahs-log period 1 file-url cf3:/test.ahs
```

## Output Example

```
Updating (1 day) AHS Log @09/19/2022 21:28:25 on esa-1 ... DONE @ 09/19/2022  
21:30:50 - File Name: /tmp/HPE_CZ21520FD6_20220919.ahs Size: 54104161 bytes  
  
Transferring file /tmp/HPE_CZ21520FD6_20220919.ahs from esa-1 to cf3:/test.ahs ...  
  
100%... DONE @09/19/2022 21:32:21 File Size: 54104161 bytes md5 cksum:  
3f761a3a3d9c15b8ce3079ecb2015c3d
```

Use the following command to copy the AHS log to a remote destination.

```
tools perform esa 1 fetch-ahs-log period 1 file-url ftp://exuser:expassword@192.0.2.1/exuser/  
Public/esa.ahs
```

## Output Example

```
Updating (1 day) AHS Log @09/19/2022 21:34:45 on esa-1 ... DONE @ 09/19/2022  
21:37:10 - File Name: /tmp/HPE_CZ21520FD6_20220919.ahs Size: 54110350 bytes  
  
Transferring file /tmp/HPE_CZ21520FD6_20220919.ahs from esa-1 to  
ftp://exuser:expassword@192.0.2.1/exuser/Public/esa.ahs ...  
  
100%... DONE @09/19/2022 21:38:37 File Size: 54110350 bytes md5 cksum:  
ddf47e27b40dbd9f87a9348e6bb9b55d
```

## 9.14 fib

### fib

#### Syntax

**fib** *slot-number* [*family*] [*ip-prefix/prefix-length* [ **longer**]] [**secondary**] [**qos**] [**accounting-class**] [ **all**]

**fib** *slot-number* **extensive** [*ip-prefix/prefix-length*] [*family*] [ **all**]

**fib** *slot-number* [*family*] **summary**

**fib** *slot-number* **nh-table-usage**

**fib** **all** **summary**

#### Context

**[Tree]** (show>router fib)

#### Full Context

show router fib

#### Description

This command displays the active FIB entries for a specific IOM or line card.

#### Parameters

##### *slot-number*

Displays routes only matching the specified chassis slot number.

**Values** 1 to 20



##### **Note:**

The actual range can be less depending on the platform.

##### *family*

Displays the router IP interface table.

**Values** **ipv4** — Displays IPv4 routes installed in the FIB.

**ipv6** — Displays IPv6 routes installed in the FIB.

##### *ip-prefix/prefix-length*

Displays FIB entries only matching the specified *ip-prefix* and length.

<b>Values</b>	ipv4-prefix:	a.b.c.d (host bits must be 0)
	ipv4-prefix-length:	0 to 32
	ipv6-prefix:	x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d  
 x: [0 to FFFF]H  
 d: [0 to 255]D  
 ipv6-prefix-length: 0 to 128



**Note:**

It is possible that a specific platform only supports a subset of the above values.

**longer**

Displays FIB entries matching the *ip-prefix/mask* and routes with longer masks.

**secondary**

Displays secondary VRF ID information.

**qos**

Displays the QoS priority and fc values.

**accounting-class**

Displays the accounting class information.



**Note:**

Not all platforms support this parameter.

**all**

Displays all information.

**summary**

Displays summary FIB information for the specified slot number.

**nh-table-usage**

Displays next-hop table usage.

**Platforms**

All

**Output**

The following output is an example of FIB information and [Table 150: FIB Fields](#) describes the output fields for the router FIB settings.

**Output Example**

```
*A:Dut-C# show router fib 1 10.132.133.134/32
=====
FIB Display
=====
Prefix                                Protocol
  NextHop
-----
10.132.133.134/32                      OSPF
   10.66.66.66 (loop7)
   Next-hop type: tunneled, Owner: RSVP, Tunnel-ID: <out-ifindex-from-route>
```

```

-----
Total Entries : 1
=====

*A:Dut-C# show router fib 1 10.1.1.1/32
=====
FIB Display
=====
Prefix                                Protocol
  NextHop
-----
10.1.1.1/32                            BGP
  10.20.1.1 (Transport:RSVP LSP:1)
-----
Total Entries : 1
=====

*A:Dut-C# show router fib 1
=====
FIB Display
=====
Prefix                                Protocol
  NextHop
-----
10.1.2.0/24                            ISIS
  10.1.3.1 (to_Dut-A)
  10.2.3.2 (to_Dut-B)
10.1.3.0/24                            LOCAL
  10.1.3.0 (to_Dut-A)
10.1.9.0/24                            ISIS
  10.1.3.1 (to_Dut-A)
10.2.3.0/24                            LOCAL
  10.2.3.0 (to_Dut-B)
10.2.9.0/24                            ISIS
  10.2.3.2 (to_Dut-B)
10.12.0.0/24                           LOCAL
  10.12.0.0 (itfToArborCP_02)
10.20.1.1/32                           ISIS
  10.1.3.1 (to_Dut-A)
10.20.1.2/32                           ISIS
  10.2.3.2 (to_Dut-B)
10.20.1.3/32                           LOCAL
  10.20.1.3 (system)
10.12.0.43/32                          STATIC
  vprn1:mda-1-1
10.12.0.44/32                          STATIC
  vprn1:mda-2-1
10.12.0.45/32                          STATIC
  vprn1:mda-2-2
10.12.0.46/32                          STATIC
  vprn1:mda-3-1
10.203.71.202/32                       STATIC
  10.12.0.2 (itfToArborCP_02)
-----
Total Entries : 15
=====

```

```
*A:Dut-C>config>router>mpls>lsp# show router fib 1 10.3.0.1/32 extensive
```

```
=====
FIB Display (Router: Base)
=====
Dest Prefix      : 10.3.0.1/32
Protocol         : BGP
Indirect Next-Hop : 10.0.0.1
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 1
Resolving Next-Hop : 10.0.0.2 (RSVP tunnel:115)
  ECMP-Weight    : 1
Resolving Next-Hop : 10.0.0.2 (RSVP tunnel:61443)
  ECMP-Weight    : 1
Indirect Next-Hop : 10.0.1.2
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 30
Resolving Next-Hop : 10.0.0.3 (RSVP tunnel:94)
  ECMP-Weight    : 20
Resolving Next-Hop : 10.0.0.3 (RSVP tunnel:61442)
  ECMP-Weight    : 1
=====
Total Entries : 1
=====
```

```
*A:Dut-C> show router fib 1 10.0.0.2/32 extensive
```

```
=====
FIB Display (Router: Base)
=====
Dest Prefix      : 10.0.0.2/32
Protocol         : OSPF
Next-Hop         : 10.0.0.3 (RSVP tunnel:94)
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 20
Next-Hop         : 10.0.0.3 (RSVP tunnel:61442)
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 1
=====
Total Entries : 1
=====
```

```
*A:Dut-C> show router route-table 10.1.0.5/32 extensive
```

```
=====
Route Table (Router: Base)
=====
Dest Prefix      : 10.1.0.5/32
Protocol         : STATIC
Age              : 00h01m37s
Preference      : 5
Next-Hop        : 10.0.0.2 (RSVP tunnel:128)
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  Metric         : 1
  ECMP-Weight    : 10
Next-Hop        : 10.0.0.2 (RSVP tunnel:132)
=====
```



```

    QoS          : Priority=n/c, FC=n/c
    Source-Class : 0
    Dest-Class   : 0
    Metric       : 1
    ECMP-Weight  : 1
    -----
    No. of Destinations: 1
    =====

*A:Dut-C> show router fib 1 10.1.0.5/32 extensive
=====
FIB Display (Router: Base)
=====
Dest Prefix      : 10.1.0.5/32
Protocol         : STATIC
Next-Hop         : 10.0.0.2 (RSVP tunnel:128)
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 10
Next-Hop         : 10.0.0.2 (RSVP tunnel:132)
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 1
=====
Total Entries : 1
=====

*A:Dut-B# show router fib 1 10.15.1.0/24
=====
FIB Display
=====
Prefix [Flags]          Protocol
NextHop
-----
10.15.1.0/24            BGP
  10.20.1.3 (Transport:SR)
-----
Total Entries : 1
=====

*A:Dut-B# show router fib 1 10.15.1.0/24 extensive
=====
FIB Display (Router: Base)
=====
Dest Prefix      : 10.15.1.0/24
Protocol         : BGP
Installed        : Y
Indirect Next-Hop : 10.20.1.3
  Label          : 262123
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 1
  Resolving Next-Hop : 10.20.1.3 (SR tunnel)
    ECMP-Weight  : 1
=====
Total Entries : 1
=====
    
```

```
=====  
*A:Dut-C# show router fib 1 3ffe::100:100:100:6/128  
=====
```

```
FIB Display  
=====
```

Prefix [Flags] NextHop	Protocol
3ffe::100:100:100:6/128 10.20.1.4 (Transport:RSVP LSP:1)	OSPF3

```
-----  
Total Entries : 1  
-----  
=====
```

```
=====  
*A:Dut-C# show router fib 1 3ffe::100:100:100:6/128 extensive  
=====
```

```
FIB Display (Router: Base)  
=====
```

```
Dest Prefix      : 3ffe::100:100:100:6/128  
Protocol         : OSPF3  
Installed        : Y  
Next-Hop         : 10.20.1.4 (RSVP tunnel:1)  
Label            : 2  
QoS              : Priority=n/c, FC=n/c  
Source-Class     : 0  
Dest-Class       : 0  
ECMP-Weight      : 1
```

```
-----  
Total Entries : 1  
=====
```

```
=====  
*A:Dut-C# show router fib 1 extensive 200.200.200.200/32  
=====
```

```
FIB Display (Router: Base)  
=====
```

```
Dest Prefix      : 200.200.200.200/32  
Protocol         : BGP  
Indirect Next-Hop : 10.0.0.2  
QoS              : Priority=n/c, FC=n/c  
Source-Class     : 0  
Dest-Class       : 0  
ECMP-Weight      : 9  
Resolving Next-Hop : 10.0.0.2  
Interface        : to_bridge_br2  
ECMP-Weight      : 1  
Indirect Next-Hop : 192.0.2.2  
QoS              : Priority=n/c, FC=n/c  
Source-Class     : 0  
Dest-Class       : 0  
ECMP-Weight      : 5  
Resolving Next-Hop : 192.0.2.2  
Interface        : to_bridge_br3  
ECMP-Weight      : 1
```

```
-----  
Total Entries : 1  
=====
```

```
=====  
*A:Dut-C# show router fib 1 20.20.20.20/32  
=====
```

```

=====
FIB Display
=====
Prefix [Flags]                                Protocol
NextHop
-----
20.20.20.20/32                                BGP
  3ffe::a14:102 (Transport:SRV6-Policy:917510)
-----
Total Entries : 1
=====

*A:Dut-C# show router fib 1 20.20.20.20/32 extensive
=====
FIB Display (Router: Base)
=====
Dest Prefix      : 20.20.20.20/32
Protocol         : BGP
Installed        : Y
Indirect Next-Hop : 3ffe::a14:102
Label           : 67
QoS              : Priority=n/c, FC=n/c
Source-Class     : 0
Dest-Class       : 0
ECMP-Weight      : 1
Resolving Next-Hop : 3ffe::a14:102 (SRV6-Policy tunnel:917510)
ECMP-Weight      : 1
=====
Total Entries : 1
=====
    
```

Table 150: FIB Fields

Label	Description
Prefix [Flags]	The prefix
Protocol	The routing protocol
NextHop	The next-hop IP address
Total Entries	The total number of entries
Dest Prefix	The destination prefix
Installed	The installed indicator (Y or N)
Label	The label number
QoS	The QoS value
Source-Class	The source class
Dest-Class	The destination class value
ECMP-Weight	The ECMP weight value

## fib

### Syntax

**fib** *slot-number* [{**ipv4** | **ipv6**}] **summary**

### Context

[\[Tree\]](#) (tools>dump>router fib)

### Full Context

tools dump router fib

### Description

This command configures the dump tools for FIB information for a specific IOM.

### Parameters

#### **slot-number**

Specifies the slot number.

**Values** 1 to 10

#### **ipv4 | ipv6**

Specifies the IPv4 or IPv6 addresses.

**Default** ipv4

#### **summary**

Displays summary FIB information for the specified slot number.

### Platforms

All

### Output

The following output is an example of FIB summary information.

#### Output Example

```
*A:Dut-F# tools dump router fib 1 summary
=====
FIB Summary
=====
-----
Active
-----
Static          0
Direct          3
HOST            0
BGP             0
BGP VPN         0
BGP EVPN        0
BGP LABEL       0
OSPF            0
```

```
OSPFv3          0
ISIS            1
RIP             0
RIP_NG         0
LDP            0
Aggregate      0
Sub Mgmt       0
VPN Leak       0
TMS            0
NAT            0
Managed       0
Periodic       0
-----
Total Installed 4
=====
```

## 9.15 fib-telemetry

### fib-telemetry

#### Syntax

- fib-telemetry label** [*label*]
- fib-telemetry route** [*family*]
- fib-telemetry route** [*ip-prefix/prefix-length*]
- fib-telemetry tunnel** [*family*]
- fib-telemetry tunnel** [*ip-prefix/prefix-length*]

#### Context

[\[Tree\]](#) (show>router fib-telemetry)

#### Full Context

show router fib-telemetry

#### Description

This command displays FIB telemetry information.

#### Parameters

##### *label*

Specifies the label value.

**Values** 0 to 1048575

##### *family*

Specifies the IPv4 or IPv6 address FIB telemetry route or tunnel family.

**Values** ipv4, ipv6

### ***ip-prefix/prefix-length***

Displays FIB telemetry route or tunnel entries only matching the specified IP prefix and length.

<b>Values</b>			
ipv4-prefix:	a.b.c.d	(host bits must be 0)	
ipv4-prefix-length	0 to 32		
ipv6-prefix:	x:x:x:x:x:x:x	(eight 16-bit pieces)	
	x:x:x:x:x:d.d.d.d		
	x:		[0 to FFFF]H
	d:		[0 to 255]D
ipv6-prefix-length:	0 to 128		

### **Platforms**

All

### **Output**

The following output is an example of FIB telemetry information.

#### **Output Example**

```
*A:Dut-B>config>service# /show router fib-telemetry label
=====
FIB Telemetry Labels
=====
Label          Owner          LastUpdt
Primary NextHop[Iif]/TnlId  Weight      GrpId PriActv
Pushed Labels
Backup NextHop[Iif]/TnlId
Pushed Labels
-----
30044          RIB-API        02/07/2020 23:44:51
1.2.3.3        1              2      Yes
30055
1.2.3.33
30255
-----
Number of Entries : 1
=====
```

```
*A:Dut-C>config>system# /show router fib-telemetry route
=====
Legend -
Flags : b - backup, i - indirect, l - LFA
=====
FIB Telemetry Routes
=====
Dest Prefix          Owner
FIB Update Time
NextHop [Iif/TnlId]  Flags
-----
1.1.2.0/24          OSPF
```

```

02/07/2020 23:43:53
1.2.3.2 [to_Dut-B]
-----
Number of Entries : 1
=====
*A:Dut-C>config>system#
*A:Dut-C>config>system# /show router fib-telemetry route 3ffe::101:200/120
=====
Legend -
Flags : b - backup, i - indirect, l - LFA
=====
FIB Telemetry Routes
=====
Dest Prefix                               Owner
FIB Update Time
NextHop [If/TnId]                         Flags
-----
3ffe::101:200/120                         OSPF3
02/07/2020 23:43:55
fe80::200:ff:fe00:2 [to_Dut-B]
-----
Number of Entries : 1
=====
*A:Dut-C>config>system#
    
```

```

*A:Dut-A# /show router fib-telemetry tunnel
=====
Legend -
Flags : a - active, b - backup, l - LFA
=====
FIB Telemetry Tunnels
=====
Dest Prefix                               Owner          Pref
FIB Update Time                         TnId           TnInst
NextHop [If/TnId]                       GrpId          Weight  Flg
-----
10.20.1.3/32                             RSVP           7
02/07/2020 23:44:07                       1              0
1.1.2.2 [to_Dut-B]                       0              0      a
10.21.1.3/32                             RIB-API        102
02/07/2020 23:44:42                       1015813        0
1.1.2.2 [to_Dut-B]                       4              0      a
1.1.2.22 [to_Dut-B]                      4              0      b
-----
Number of Entries : 2
=====
*A:Dut-A# /show router fib-telemetry tunnel 10.21.1.3/32
=====
Legend -
Flags : a - active, b - backup, l - LFA
=====
FIB Telemetry Tunnels
=====
Dest Prefix                               Owner          Pref
FIB Update Time                         TnId           TnInst
NextHop [If/TnId]                       GrpId          Weight  Flg
-----
10.21.1.3/32                             RIB-API        102
02/07/2020 23:44:42                       1015813        0
1.1.2.2 [to_Dut-B]                       4              0      a
1.1.2.22 [to_Dut-B]                      4              0      b
-----
Number of Entries : 1
    
```

-----  
 \*A:Dut - A#

Table 151: FIB Telemetry Fields

Label	Description
Label	The label number of the FIB entry
Owner	The owner (protocol name) of the label entry
LastUpdt	The time stamp of when the entry was last updated
Primary NextHop[I/f]/TnIId	The primary path next-hop IP or tunnel ID or interface
Weight	The normalized ECMP weight associated with the next-hop
GrpId	The next-hop group ID
PriActv	The boolean value (YES or NO) that indicates whether the primary path is active or not
Pushed Labels	The pushed labels number
Backup NextHop[I/f]/TnIId	The backup path next-hop IP or tunnel ID or interface
Number of Entries	The total number of displayed labels
Flags	The flags: <ul style="list-style-type: none"> <li>• b — backup</li> <li>• i — indirect</li> <li>• l — LFA</li> </ul>
Dest Prefix	The destination IP prefix of the route FIB entry
Owner	The protocol owner (routing protocol) of the FIB entry
FIB Update Time	The time stamp of when the route was last updated in FIB
NextHop [I/f]/TnIId]	The IP address of the next-hop and interface name or tunnel ID
Number of Entries	The total number of displayed routes
Flags	The flags: <ul style="list-style-type: none"> <li>• a — active</li> <li>• b — backup</li> <li>• l — LFA</li> </ul>
Dest Prefix	The destination IP prefix of the FIB tunnel entry



Label	Description
Owner	The protocol owner of the FIB tunnel entry
Pref	The preference number that indicates the priority of the tunnel
FIB Update Time	The time stamp of when the tunnel was last updated in FIB
TnId	The global tunnel ID
TnInst	The tunnel instance of the type indicated by protocol
Number of Entries	The total number of displayed tunnels

## 9.16 fid

fid

### Syntax

fid [*fid*] fate-sharing

fid [*fid*] user-service

fid [*fid*] fdb

fid [*fid*] mfib [group-mac *ieee-address*]

fid [*fid*] mfib [isid *isid*]

### Context

[\[Tree\]](#) (show>service>id>spb fid)

### Full Context

show service id spb fid

### Description

This command displays SPB control service FID information.

### Parameters

*fid*

A user service FID may be specified. All user service FIDs are displayed if the FID is not specified.

**Values** 1 to 4095

**fate-sharing**

Displays fate-sharing information

**user-service**

Specifies user VPLS information for each control VPLS per forwarding data-base identifier. A user service FID may be specified. All user service FIDs are displayed if the FID is not specified.

**fdb**

Displays forwarding database (FDB) information

**mfib**

Displays multicast forwarding information base (MFIB) information

**ieee-address**

Specifies the 48-bit IEEE 802.3 group MAC address

**isid**

Specifies the value of ISID of the group MAC address of this entry

**Values** 0 to 16777215

**Platforms**

All

**Output**

The following output is an example of service SPB FID fare sharing information.

**Output Example**

```
*A:Dut-A# show service id 100001 spb fid fate-sharing
=====
Control service fate-shared sap/sdp-bind information
=====
Control  Control Sap/      FID      User      User Sap/
SvcId    SdpBind                SvcId     SdpBind
-----
500      1/1/20:500            502      502      1/1/20:502
=====

*A:Dut-A# show service id 100001 spb fid fdb
=====
Control service FDB information
=====
Fid      MacAddr                UCast Source      MCast Source
Last Update                Last Update
-----
1        00:10:00:01:00:01    local              local
                                04/04/2012 15:11:24    04/04/2012 15:11:24
1        00:10:00:01:00:02    1/2/2:1.1         1/2/2:1.1
                                04/04/2012 15:51:45    04/04/2012 15:51:45
1        00:10:00:01:00:03    1/2/3:1.1         1/2/3:1.1
                                04/04/2012 15:51:56    04/04/2012 15:51:56
1        00:10:00:01:00:04    1/2/2:1.1         1/2/2:1.1
                                04/04/2012 15:52:11    04/04/2012 15:52:11
-----
Entries found: 4
=====
```

```
*A:Dut-A# show service id 100001 spb fid mfib
=====
Control service MFIB information
=====
FID   MacAddr           ISID   Source           Last Update
-----
1     01:1E:83:00:27:11 10001  1/2/2:1.1       04/04/2012 15:51:45
      1/2/3:1.1       04/04/2012 15:51:56
      local           04/04/2012 15:42:44
100   01:1E:83:00:27:12 10002  1/2/2:1.1       04/04/2012 15:51:45
      1/2/3:1.1       04/04/2012 15:51:56
      local           04/04/2012 15:43:09
-----
Entries found: 6
=====
```

## 9.17 field

### field

#### Syntax

**field** *field-name*

#### Context

[\[Tree\]](#) (show>app-assure>group>http-enrich field)

[\[Tree\]](#) (show>app-assure>http-enrich field)

#### Full Context

show application-assurance group http-enrich field

show application-assurance http-enrich field

#### Description

This command displays HTTP enrichment field information.

#### Parameters

***field-name***

Specifies the field name, up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 9.18 fields

### fields

#### Syntax

**fields**

#### Context

[\[Tree\]](#) (show>app-assure>http-enrich fields)

#### Full Context

show application-assurance http-enrich fields

#### Description

This command displays HTTP enrichment fields.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 9.19 file

### file

#### Syntax

**file** *provisioning-file-url* [**save-provision-file-destination** *file-url*] [**reboot-on-success**]

#### Context

[\[Tree\]](#) (tools>perform>system>auto-node-provisioning file)

#### Full Context

tools perform system auto-node-provisioning file

#### Description

This command executes the auto-provisioning process. When the auto-provisioning process is executed using the **file** command, DHCP discovery and solicitation is not performed.

#### Parameters

***provisioning-file-url***

Specifies the location of the provisioning file.

**Values** *local-url, remote-url*

*local-url* — [*cflash-id*]/*file-path*; 200 characters max

*remote-url* — {ftp | http | https}://[*login:password@*]*remote-locn*/*file-path*

*remote-locn* — {*hostname* | *ipv4-address* | *ipv6-address*][:*port*]

*ipv4-address* — a.b.c.d

*ipv6-address* — x:x:x:x:x:x:x[-*interface*]

x:x:x:x:x:d.d.d.d[-*interface*]

x — 0 to FFFF (hexadecimal)

d — 0 to 255 (decimal)

*port* — 0 to 65535

*cflash-id* — cf1:m cf1-A:, cf1-B:, cf2:, cf2-A:, cf2-B:, cf3:, cf3-A:, cf3-B:

#### **file-url**

Specifies the location to save the provisioning file.

**Values** [*cflash-id*]/*file-path*

*cflash-id* — cf1:m cf1-A:, cf1-B:, cf2:, cf2-A:, cf2-B:, cf3:, cf3-A:, cf3-B:

#### **reboot-on-success**

Reboots the router when the auto-provisioning process completes successfully.

### **Platforms**

All

## **9.20 file-id**

### **file-id**

#### **Syntax**

**file-id** [*log-file-id*]

#### **Context**

[\[Tree\]](#) (show>log file-id)

#### **Full Context**

show log file-id

#### **Description**

This command displays event file log information.

If no command line parameters are specified, a summary output of all event log files is displayed.  
 Specifying a file ID displays detailed information on the event file log.

## Parameters

### *log-file-id*

Displays detailed information on the specified event file log.

## Platforms

All

## Output

The following output is an example of log file summary information.

The following table describes the output fields for a log file summary.

### Output Example

```
A:ALA-1# show log file-id
=====
File Id List
=====
name
file-id  rollover  retention  admin      backup      oper
          location   location   location
-----
3
3         60         4         cf1:       cf2:        cf1:
event-logs-abc
7         1440      12        cf1:       none        none
some-logs
10        1440      12        cf3:       cf2:        cf1:
=====
A:ALA-1#
A:ALA-1# show log file-id 10
=====
File Id List
=====
name
file-id  rollover  retention  admin      backup      oper
          location   location   location
-----
some-logs
10        1440      12        cf3:       cf2:        cf1:
=====
Description : logs of certain special events
=====
File Id 10 Location cf1:
=====
file name expired state
-----
cf1:\log\log0310-20210501-012205 yes complete
cf1:\log\log0310-20210501-014049 yes complete
cf1:\log\log0310-20210501-015344 yes complete
cf1:\log\log0310-20210501-015547 yes in progress
=====
A:ALA-1#
```

Table 152: Output fields: log file

Label	Description
name	Displays the string name of the log file policy
file-id	Displays the log file ID
rollover	Displays the rollover time for the log file, which is how long in between partitioning of the file into a new file
retention	Displays the retention time for the file in the system, which is how long the file will be retained in the file system
admin location	Displays the primary flash device specified for the file location none — indicates no specific flash device is specified
oper location	Displays the actual flash device on which the log file exists
file name	Displays the complete pathname of the file associated with the log ID
expired	Indicates whether the retention period for this file has passed
state	in progress — Indicates the current open log file complete — Indicates the old log file

## 9.21 file-transmission-profile

### file-transmission-profile

#### Syntax

**file-transmission-profile**

**file-transmission-profile** *name*

**file-transmission-profile** *name associations*

#### Context

**[Tree]** (show>system file-transmission-profile)

#### Full Context

show system file-transmission-profile

#### Description

This command displays file transmission profile information.

## Parameters

### *name*

Specifies the file transmission profile name, up to 32 characters.

## Platforms

All

## 9.22 files

### files

## Syntax

**files** [**running** | **finished**] [**detail**]

## Context

[\[Tree\]](#) (show>call-trace files)

## Full Context

show call-trace files

## Description

This command gives an overview of all the files in use by the call-trace module, either for running or finished jobs.

## Parameters

### **running**

Displays the active jobs that are tracing events triggered by the host being monitored.

### **finished**

Displays the jobs that have already finished and not tracing events generated by the host anymore.

### **detail**

Displays detailed information about the files.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of call trace local log files information.

### Output Example

```
Node# show call-trace files
```



```

=====
Call trace files of running jobs
=====
File path                                     File size
                                           (bytes)
-----
cf1-A:/calltrace/running/mac_00-02-00-00-00-19_160119_1557.pcap      1575
-----
No. of call trace files of running jobs: 1
=====
Call trace files of finished jobs
=====
File path                                     File size
                                           (bytes)
-----
-----
No. of call trace files of finished jobs: 0
=====
    
```

Table 153: Call Trace Field Descriptions describes call trace output fields.

Table 153: Call Trace Field Descriptions

Field	Description
File path	The compact flash (CF) configuration to store call trace files.
File size	The total size of call-trace files on the specified compact flash card
No. of call trace files running jobs	The total number of active trace call files running jobs
No. of call trace files of finished jobs	The total number of finished trace call files jobs

## 9.23 filter

### filter

#### Syntax

**filter** [**subscriber** *sub-ident-string*] [**origin** *origin*]

#### Context

[\[Tree\]](#) (show>service>active-subscribers filter)

#### Full Context

show service active-subscribers filter

## Description

This command displays active subscriber filter information.

## Parameters

### *sub-ident-string*

Specifies the subscriber ID of the active subscriber, up to 32 characters.

### *origin*

Specifies the origin of the active subscriber.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of active subscriber's filter information.

### Output Example

```
*A:eng-BNG-2# show service active-subscribers filter
=====
Active Subscribers
=====
-----
Subscriber user_1
          (no-prof)
-----
(1) SLA Profile Instance sap:1/1/20:841 - sla:no-prof
-----
IP Address
-----
          MAC Address          Session          Origin          Svc          Fwd
-----
192.168.0.14
          00:00:10:10:12:13  N/A              DHCP              1000          Y
=====
IP Filter (ingress)
=====
Filter Id          : 50              Applied          : Yes
Scope              : Template        Def. Action      : Forward
Type               : Normal
System filter      : Unchained
Radius Ins Pt      : n/a
CrCtl. Ins Pt      : n/a
RadSh. Ins Pt      : n/a
PccRl. Ins Pt      : n/a
Entries            : 2
Description        : (Not Specified)
Filter Name        : 50
-----
Filter Match Criteria : IP
-----
No Match Criteria Found for this host
=====
-----
Number of active subscribers : 1
=====
```

## filter

### Syntax

filter

### Context

[\[Tree\]](#) (show filter)

### Full Context

show filter

### Description

Commands in this context display IP/MAC filter and counter related information.

### Platforms

All

## filter

### Syntax

filter

### Context

[\[Tree\]](#) (show>li filter)

### Full Context

show li filter

### Description

This command displays LI mirror filter configuration and operation information.

### Platforms

All

## filter

### Syntax

filter

## Context

**[Tree]** (clear filter)

## Full Context

clear filter

## Description

Commands in this context clear the filter entities.

## Platforms

All

filter

## Syntax

filter

## Context

**[Tree]** (clear>li filter)

## Full Context

clear li filter

## Description

This command clears LI mirror filter configuration and operation information.

## Platforms

All

filter

## Syntax

filter

## Context

**[Tree]** (tools>dump filter)

## Full Context

tools dump filter

## Description

Commands in this context dump filter information.

## Platforms

All

filter

## Syntax

filter

## Context

[\[Tree\]](#) (tools>perform filter)

## Full Context

tools perform filter

## Description

Commands in this context perform filter operations.

## Platforms

All

filter

## Syntax

filter

## Context

[\[Tree\]](#) (monitor filter)

## Full Context

monitor filter

## Description

Commands in this context configure criteria to monitor IP and MAC filter statistics.

## Platforms

All

## 9.24 filter-id

filter-id

### Syntax

**filter-id** [*filter-id*]

### Context

[\[Tree\]](#) (show>service>id>log filter-id)

### Full Context

show service id log filter-id

### Description

This command displays event file log information.

If no command line parameters are specified, a summary output of all event log files is displayed.

Specifying a file ID displays detailed information on the event file log.

### Parameters

***filter-id***

Specifies the filter policy.

**Values** 1 to 65535

### Platforms

All

### Output

[Table 154: Filter-ID Field Descriptions](#) describes the output fields for a log file summary.

*Table 154: Filter-ID Field Descriptions*

Label	Description
file-id	The log file ID.
rollover	The rollover time for the log file which is how long in between partitioning of the file into a new file.
retention	The retention time for the file in the system which is how long the file should be retained in the file system.
admin location	The primary flash device specified for the file location.

Label	Description
	n/a — Indicates no specific flash device was specified.
backup location	The secondary flash device specified for the file location if the admin location is not available. n/a — Indicates that no backup flash device was specified.
oper location	The actual flash device on which the log file exists.
file-id	The log file ID.
rollover	The rollover time for the log file which is how long in between partitioning of the file into a new file.
retention	The retention time for the file in the system which is how long the file should be retained in the file system.
file name	The complete pathname of the file associated with the log ID.
expired	Indicates whether or not the retention period for this file has passed.
state	In progress — Indicates the current open log file. Complete —Indicates the old log file.

## filter-id

### Syntax

**filter-id** [*filter-id*]

### Context

[\[Tree\]](#) (show>log filter-id)

### Full Context

show log filter-id

### Description

This command displays event log filter policy information.

### Parameters

***filter-id***

Displays detailed information on the specified event filter policy ID.

**Values** 1 to 1500, or up to 64 characters

## Platforms

All

## Output

The following output is an example of event filter log information.

[Table 155: Event Log Filter Detail Output Fields](#) describes the output fields for event log filter summary information.

### Output Example

```
*A:ALA-48>config>log# show log filter-id
=====
Log Filters
=====
Filter Applied Default Description
Name/         Action
Id
-----
1
1      no      forward
5
5      no      forward
10
10     no      forward
1001
1001  yes      drop    Collect events for Serious Errors Log
=====
*A:ALA-48>config>log#
```

### Output Example

```
*A:ALA-48>config>log# show log filter-id 1001
=====
Log Filter
=====
Filter-id      : 1001      Applied      : yes      Default Action: drop
Filter-name    : 1001
Description    : Collect events for Serious Errors Log
-----
Log Filter Match Criteria
-----
Entry-id      : 10          Action       : forward
Application   :             Operator    : off
Event Number  : 0          Operator    : off
Severity      : major      Operator    : greaterThanOrEqual
Subject       :             Operator    : off
Match Type    : exact string
Router        :             Operator    : off
Match Type    : exact string
Description   : Collect only events of major severity or higher
-----
*A:ALA-48>config>log#
```

### Event Log Filter Detailed Output

[Table 155: Event Log Filter Detail Output Fields](#) describes the output fields for detailed event log filter information.



Table 155: Event Log Filter Detail Output Fields

Label	Description
Filter Name/Id	The event log filter name or ID.
Applied	no — The event log filter is not currently in use by a log ID. yes — The event log filter is currently in use by a log ID.
Default Action	drop — The default action for the event log filter is to drop events not matching filter entries. forward — The default action for the event log filter is to forward events not matching filter entries.
Description (Filter-id)	The description string for the filter ID.

Table 156: Log Filter Match Criteria Output Fields describes the output fields for log filter match criteria information.

Table 156: Log Filter Match Criteria Output Fields

Label	Description
Entry-id	The event log filter entry ID.
Action	default — There is no explicit action for the event log filter entry and the filter's default action is used on matching events. drop — The action for the event log filter entry is to drop matching events. forward — The action for the event log filter entry is to forward matching events.
Description (Entry-id)	The description string for the event log filter entry.
Application	The event log filter entry application match criterion.
Event Number	The event log filter entry application event ID match criterion.
Severity	cleared — The log event filter entry application event severity cleared match criterion. indeterminate — The log event filter entry application event severity indeterminate match criterion. critical — The log event filter entry application event severity critical match criterion. major — The log event filter entry application event severity cleared match criterion.

Label	Description
	minor — The log event filter entry application event severity minor match criterion.  warning — The log event filter entry application event severity warning match criterion.
Subject	Displays the event log filter entry application event ID subject string match criterion.
Router	Displays the event log filter entry application event ID <b>router</b> <i>router-instance</i> string match criterion.
Operator	There is an operator field for each match criteria: application, event number, severity, and subject. equal — Matches when equal to the match criterion. greaterThan — Matches when greater than the match criterion. greaterThanOrEqualTo — Matches when greater than or equal to the match criterion. lessThan — Matches when less than the match criterion. lessThanOrEqualTo — Matches when less than or equal to the match criterion. notEqual — Matches when not equal to the match criterion. off — No operator specified for the match criterion.

## 9.25 firewall

### firewall

#### Syntax

**firewall**

#### Context

[\[Tree\]](#) (show>router firewall)

#### Full Context

show router firewall

#### Description

This command displays firewall information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 9.26 firewall-hosts

### firewall-hosts

#### Syntax

```
firewall-hosts [subscriber sub-ident] [ ip ipv6-address/prefix-length] [mac ieee-address] [firewall-policy  
policy-name] [router router-instance]
```

#### Context

[\[Tree\]](#) (show>service>nat firewall-hosts)

#### Full Context

```
show service nat firewall-hosts
```

#### Description

This command lists ESM hosts that have an active firewall. Configuring the optional parameters will narrow the scope of the list.

#### Parameters

##### *ieee-address*

Specifies the MAC address of a host, in the format xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx.

##### *ipv6-address/prefix-length*

Specifies the IPv6 prefix of a host.

**Values** *ipv6-address* — x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (in hexadecimal)  
d — 0 to 255 (in decimal)  
*prefix-length* — 1 to 128

##### *policy-name*

Specifies the name of a firewall policy, up to 32 characters.

##### *router-instance*

Specifies the ID of the router that contains the firewall domain.

**Values** *router-name* | *vprn-svc-id*  
*router-name* — "Base", "management"  
*vprn-svc-id* — 1 to 2147483647

***sub-ident***

Specifies the subscriber identity string, up to 32 characters.

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 9.27 firewall-policy

### firewall-policy

**Syntax**

**firewall-policy** [*policy-name* [ **associations**]]

**Context**

[\[Tree\]](#) (show>service>nat firewall-policy)

**Full Context**

show service nat firewall-policy

**Description**

This command lists the firewall policies that are present in the system.

Configuring the *policy-name* parameter will display all information for the specified policy.

**Parameters**

**associations**

Keyword to display all configuration objects that use the specified firewall policy.

***policy-name***

Specifies the name of a firewall policy, up to 32 characters.

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of firewall policy information.

**Output Example**

```
Node# show service nat firewall-policy
=====
Firewall policies
=====
Firewall policy          Description
-----
firewall_dhcp6_0        IPv6 Firewall policy for DHCP6 on service Base
```

```
firewall_dhcp6_300      IPv6 Firewall policy for DHCP6 on service 300
firewall_dhcp6_4       IPv6 Firewall policy for DHCP6 on service 4
firewall_slaac_0       IPv6 Firewall policy for SLAAC on service Base
firewall_slaac_300     IPv6 Firewall policy for SLAAC on service 300
firewall_slaac_4       IPv6 Firewall policy for SLAAC on service 4
-----
```

```
No. of firewall policies: 6
=====
```

```
Node# show service nat firewall-policy "firewall_slaac_4"
=====
```

```
Firewall policy firewall_slaac_4
=====
```

```
Description                : IPv6 Firewall policy for SLAAC on
                             service 4
Domain                      : domain_slaac_4
Router                     : vprn4
Filtering                   : endpointIndependent
Port forwarding range end   : 1023
Session limit               : 65535
Reserved sessions          : 0
Session usage High Watermark (%) : (Not Specified)
Session usage Low Watermark (%) : (Not Specified)
ALG enabled                 : ftp
Prioritized forwarding classes : (Not Specified)
Timeout TCP established (s)  : 7440
Timeout TCP transitory (s)  : 240
Timeout TCP SYN (s)         : 15
Timeout TCP TIME-WAIT (s)   : 0
Timeout TCP RST (s)         : 0
Timeout UDP mapping (s)     : 300
Timeout UDP initial (s)     : 15
Timeout UDP DNS (s)         : 15
Timeout ICMPv6 Query (s)    : 60
Timeout SIP Inactive Media (s) : 120
Timeout unknown protocol (s) : 300
UDP inbound refresh         : false
TCP MSS Adjust              : (Not Specified)
Unknown protocols           : (Not Specified)
Last Mgmt Change            : 01/23/2017 14:32:27
=====
```

```
Node# show service nat firewall-policy "firewall_slaac_4" associations
=====
```

```
Subscriber profile associations
=====
```

```
Subprof_1
-----
```

```
No. of subscriber profiles: 1
=====
```

## 9.28 flap-statistics

### flap-statistics

#### Syntax

**flap-statistics** [{*ip-prefix/mask* [**neighbor** *ip-addr*] | **group** *group-name* | **regex** *reg-exp* | [**policy** *policy-name*]}]

#### Context

[\[Tree\]](#) (clear>router>bgp flap-statistics)

#### Full Context

clear router bgp flap-statistics

#### Description

This command clears route flap statistics.

#### Parameters

##### *ip-prefix/mask*

Clears route flap statistics for entries that match the specified IP prefix and mask length.

**Values** ipv4-prefix: a.b.c.d (host bits must be 0)  
ipv4-prefix-le: 0 to 32  
ipv6-prefix:  
• x:x:x:x:x:x:x (eight 16-bit pieces)  
• x:x:x:x:x:d.d.d.d  
• x: [0 to FFFF] H  
• d: [0 to 255] D  
ipv6-prefix-le: 0 to 128

##### *ip-addr*

Clears route flap statistics for entries received from the specified BGP neighbor.

**Values** ipv4-prefix: a.b.c.d (host bits must be 0)  
ipv6-prefix:  
• x:x:x:x:x:x:x (eight 16-bit pieces)  
• x:x:x:x:x:d.d.d.d  
• x: [0 to FFFF] H  
• d: [0 to 255] D  
interface: 32 chars max, mandatory for link local addresses

***group-name***

Clears route flap statistics for entries received from any BGP neighbors in the specified peer group. 32 characters maximum.

***reg-exp***

Clears route flap statistics for all entries which have the regular expression and the AS path that matches the regular expression. 80 characters maximum.

***policy-name***

Clears route flap statistics for entries that match the specified route policy. 32 characters maximum.

**Platforms**

All

## 9.29 flex-algo

### flex-algo

**Syntax**

**flex-algo** [*flex-algo-id*] [*level level*] [*detail*]

**Context**

[\[Tree\]](#) (show>router>isis flex-algo)

**Full Context**

show router isis flex-algo

**Description**

This command displays the IS-IS flexible algorithm information.

This command displays the flexible algorithms, the winning FAD for which the router is enabled and whether the local router is advertising a FAD.

When the keyword **detail** is used, all other FADs (beyond the winning FAD) advertised by any other router in the area are also displayed.

The displayed output can be filtered by using the *flex-algo-id* or *level* keywords.

**Parameters**

***flex-algo-id***

Specifies the keyword filter to display output for the requested algorithm only.

**level**

Displays the IS-IS area level information constrained to IS-IS level-1 or level-2 only.

**level**

Specifies the IS-IS area level, it filters the displayed information constrained to IS-IS level-1 or level-2 only.

**detail**

Displays not only the winning FAD information, but also all other FADs that the router has advertised in IS-IS.

**Platforms**

All

**Output**

The following output is an example of flexible algorithm information, and [Table 157: Flexible Algorithm Output Fields](#) describes the output fields.

**Output Example**

```
*A:Dut-B# show router isis 0 flex-algo 128
=====
Rtr Base ISIS Instance 0 Flex-Algos
=====
-----
Flex-Algo : 128
-----
Advertising FAD      : My128
Participating       : Yes
Loop-Free-Alternate : Disabled
L1 Oper state       : UP
L2 Oper state       : UP
Displaying Level 1 FAD Info
-----
FADs-count          : 2
Selected FAD
  Fad-Owner         : 4900.0000.0002
  Supported          : Yes
  Priority           : 100
  Metric Type       : delay
  Calculation Type   : spf(0)
  Exclude           : 0x0
  Include Any       : 0x0
  Include All       : 0x0
  Fad Flags         : M
  Level             : L1
Displaying Level 2 FAD Info
-----
FADs-count          : 1
Selected FAD
  Fad-Owner         : 4900.0000.0002
  Supported          : Yes
  Priority           : 100
  Metric Type       : delay
  Calculation Type   : spf(0)
  Exclude           : 0x0
  Include Any       : 0x0
  Include All       : 0x0
  Fad Flags         : M
  Level             : L2
-----
FAD: Flexible Algorithm Definition
Fad Flags:  M = Prefix Metric
```



```
=====
*A:Dut-B#
*A:Dut-B#show router isis 0 flex-algo detail
=====
Rtr Base ISIS Instance 0 Flex-Algos (detail)
=====
-----
Flex-Algo : 128
-----
Advertising FAD          : My128
Participating           : Yes
Loop-Free-Alternate     : Disabled
L1 Oper state           : UP
L2 Oper state           : UP
Displaying Level 1 FAD Info
-----
FADs-count              : 2
Selected FAD
  Fad-Owner              : 4900.0000.0002
  Supported               : Yes
  Priority                : 100
  Metric Type            : delay
  Calculation Type       : spf(0)
  Exclude                 : 0x0
  Include Any            : 0x0
  Include All            : 0x0
  Fad Flags              : M
  Level                  : L1
Other FADs
  Fad-Owner              : 4900.0000.0004
  Supported               : Yes
  Priority                : 50
  Metric Type            : delay
  Calculation Type       : spf(0)
  Exclude                 : 0x0
  Include Any            : 0x0
  Include All            : 0x0
  Fad Flags              : M
  Level                  : L1
Displaying Level 2 FAD Info
-----
FADs-count              : 1
Selected FAD
  Fad-Owner              : 4900.0000.0002
  Supported               : Yes
  Priority                : 100
  Metric Type            : delay
  Calculation Type       : spf(0)
  Exclude                 : 0x0
  Include Any            : 0x0
  Include All            : 0x0
  Fad Flags              : M
  Level                  : L2
Other FADs
-----
FAD: Flexible Algorithm Definition
Fad Flags:  M = Prefix Metric
=====
*A:Dut-B>show>router>isis#
```

Table 157: Flexible Algorithm Output Fields

Label	Description
Flex-Algo	The flexible algorithm number
Advertising FAD	The FAD name when the local router is advertising a FAD
Participating	The flexible algorithm participation is enabled
Loop-Free-Alternate	Displays Loop-Free-Alternates; if enabled, then the configuration is inherited from base SPF
L1 Oper State	Displays the L1 operational flexible algorithm state
L2 Oper State	Displays the L2 operational flexible algorithm state
FADs-Count	Displays the number of FADs in the area available to the router
FAD-Owner	Displays the winning FAD owner
Supported	Displays local router support for the flexible algorithm definition that is advertised in the FAD
Priority	Displays the FAD priority; It is the tiebreaker when multiple FADs are received
Metric Type	The metric used by the winning FAD igp — the IGP metric is used te-metric — the TE metric is used delay — the delay metric is used
Calculation Type	Displays the calculation type; for SPF a zero value is only defined
Exclude	The list of administrative groups for links to be excluded from the flexible algorithm topology graph
Include Any	The list of administrative groups for links to be included in the flexible algorithm topology graph
Include All	The list of administrative groups for links where all administrative groups have to match to be included in the flexible algorithm topology graph
Fad Flags	Displays the FAD Flags; the M-flag is used for inter-area; when set, the metric must be used for inter-area traffic to avoid loops and blackhole traffic on ABR/ASBR
Level	The IS-IS area level where the FAD is received

## flex-algo

### Syntax

**flex-algo** [*flex-algo-id*] [**area** *area-id*] [**detail**]

### Context

[\[Tree\]](#) (show>router>ospf flex-algo)

### Full Context

show router ospf flex-algo

### Description

This command displays OSPFv2 flexible algorithm information, which includes the flexible algorithms, the winning FAD for which the router is enabled, and whether the local router is advertising a FAD.

The displayed output can be filtered using either the *area-id* or *flex-algo-id* keywords.

### Parameters

#### *flex-algo-id*

Specifies the keyword filter to display output for the requested algorithm only.

#### *area-id*

Specifies the OSPFv2 area to display output.

#### **area**

Displays the information constrained to a particular OSPFv2 area.

#### **detail**

Displays the winning FAD information and all other FADs that the router has advertised in OSPFv2.

### Platforms

All

### Output

The following output is an example of flexible algorithm information, and [Table 158: Flexible Algorithm Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-C# show router ospf flex-algo detail
=====
Rtr Base OSPFv2 Instance 0 Flex-Algos (detail)
=====
-----
Flex-Algo : 128
-----
Advertising FAD       : Algo_OSPF_128
Participating        : Yes
Loop-Free-Alternate   : Disabled
```

```

Oper state
  Area 0.0.0.0      : UP
  Displaying Area 0.0.0.0 FAD Info
-----
FADs-count          : 1
Selected FAD
  Fad-Owner         : 3.3.3.3
  Supported          : Yes
  Priority           : 50
  Metric Type       : igp (0)
  Calculation Type   : spf (0)
  Exclude           : 0x0
  Include Any       : 0x0
  Include All       : 0x0
  Fad Flags         : M
-----
FAD: Flexible Algorithm Definition
Fad Flags:  M = Prefix Metric
=====
*A:Dut-C#
    
```

Table 158: Flexible Algorithm Output Fields

Label	Description
Flex-Algo	The flexible algorithm number
Advertising FAD	The FAD name when the local router is advertising a FAD
Participating	The flexible algorithm participation is enabled
Loop-Free-Alternate	Displays Loop-Free-Alternates; if enabled, then the configuration is inherited from base SPF
Oper state Area	The operational area state
FADs-count	Displays the number of FADs in the area available to the router
FAD-Owner	Displays the winning FAD owner
Supported	Displays local router support for the flexible algorithm definition that is advertised in the FAD
Priority	Displays the FAD priority which is the tiebreaker when multiple FADs are received
Metric Type	The metric used by the winning FAD igp — the IGP metric is used te-metric — the TE metric is used delay — the delay metric is used
Calculation Type	Displays the calculation type; for SPF, only a zero value is defined

Label	Description
Exclude	The list of administrative groups for links to be excluded from the flexible algorithm topology graph
Include Any	The list of administrative groups for links to be included in the flexible algorithm topology graph
Include All	The list of administrative groups for links where all administrative groups must match to be included in the flexible algorithm topology graph
Fad Flags	Displays the FAD flags. The M-flag is used for inter-area; when set, the metric must be used for inter-area traffic to avoid loops and blackhole traffic on ABR/ASBR.

## 9.30 flexible-algorithm-definitions

### flexible-algorithm-definitions

#### Syntax

**flexible-algorithm-definitions** [**flex-algo** *fad-name*]

#### Context

[\[Tree\]](#) (show>router flexible-algorithm-definitions)

#### Full Context

show router flexible-algorithm-definitions

#### Description

This command displays information about the locally configured FADs.

If **flex-algo** *fad-name* is specified as the output filter, only filtered FAD definitions are shown. If no output filter is specified, all configured FADs are shown.

#### Parameters

**flex-algo** *fad-name*

Displays the configuration information for the specified FAD name.

#### Platforms

All

## Output

The following output is an example of FAD information, and [Table 159: FAD Fields](#) describes the output fields.

### Output Example

```
*A:Dut-B# show router flexible-algorithm-definitions
=====
Flexible Algorithm Definitions
=====
-----
Flex-Algo: My128
-----
Admin State   : Up
Description   : This-is-My128-algo
Metric Type   : delay
Priority      : 100
Exclude       : N.A.
Include Any   : N.A.
Include All   : N.A.
-----
Flex-Algo: MyFAD
-----
Admin State   : Up
Description   : (Not Specified)
Metric Type   : igp
Priority      : 100
Exclude       : N.A.
Include Any   : N.A.
Include All   : N.A.
=====
*A:Dut-B#
*A:Dut-B# show router flexible-algorithm-definitions flex-algo "My128"
=====
Flexible Algorithm Definitions
=====
-----
Flex-Algo: My128
-----
Admin State   : Up
Description   : This-is-My128-algo
Metric Type   : delay
Priority      : 100
Exclude       : N.A.
Include Any   : N.A.
Include All   : N.A.
=====
*A:Dut-B#
```

Table 159: FAD Fields

Label	Description
Flex-Algo	FAD name
Admin State	Displays the administrative state of the FAD
Description	Displays a short description of the FAD
Metric Type	The metric type of the FAD

Label	Description
	igp — the IGP metric is used for the flexible algorithm graph te-metric — the TE metric is used for the flexible algorithm graph delay — the delay metric is used for the flexible algorithm graph
Priority	Displays the priority of the FAD; if the FAD is advertised, the priority is the tie-breaker used to determine the winning FAD; the higher the value the higher the priority
Exclude	Displays the list of link administrative groups to exclude from the construction of the flexible algorithm topological graph
Include Any	Displays the list of link administrative groups to include when constructing the flexible algorithm topological graph
Include All	Displays the list of link administrative groups that must be assigned to a single link to include in the construction of the flexible algorithm topological graph

## 9.31 flood-table

### flood-table

#### Syntax

```
flood-table [class class] [detail]
```

#### Context

```
[Tree] (tools>dump>wlan-gw>lanext>bd flood-table)
```

#### Full Context

```
tools dump wlan-gw lanext bd flood-table
```

#### Description

This command dumps the specified flood table entries for the specified HLE BD.

#### Parameters

##### *class*

Specifies the source on which to filter the flood table entries.

**Values** access, network, remote

##### *detail*

Dumps detailed information for the flood table.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of flood table information.

### Output Example

```
tools>dump>wlan-gw>lanext>bd# flood-table detail
=====
MATCHED 2 FLOOD ENTRIES ON SLOT #2 MDA #1
=====
TUNNEL MDA      : 2/1                VLAN      : 100
TUNNEL PORT    : 2/1/NAT-IN-IP      TUNNEL ENCAP : 2049.1
TUNNEL SRC IP  : 11.3.3.100
TUNNEL DST IP  : 4.4.4.4
TUNNEL TYPE    : GRE                TUNNEL CLASS : ACCESS
GRE RAW HEADER : 1483014144
-----
TUNNEL MDA      : 2/1                VLAN      : N/A
TUNNEL PORT    : 2/1/NAT-OUT-IP     TUNNEL ENCAP : 2081.3
TUNNEL SRC IP  : 2.2.2.2
TUNNEL DST IP  : 44.44.44.1
TUNNEL TYPE    : VXLAN              TUNNEL CLASS : NETWORK
VXLAN VNI      : 102
VXLAN PORT     : 4789
-----
=====
```

## 9.32 flow-attribute

### flow-attribute

#### Syntax

**flow-attribute**

#### Context

[\[Tree\]](#) (show>app-assure flow-attribute)

#### Full Context

show application-assurance flow-attribute

#### Description

This command displays flow attribute information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR



## flow-attribute

### Syntax

**flow-attribute detail**

**flow-attribute summary**

### Context

[\[Tree\]](#) (show>app-assure>group flow-attribute)

### Full Context

show application-assurance group flow-attribute

### Description

This command displays flow attribute information.

### Parameters

#### detail

Displays detailed information.

#### summary

Displays summary information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following outputs are examples of flow attribute information.

[Table 160: Flow Attributes Output Field Descriptions](#) describes the flow attribute output fields.

### Output Example

```
show application-assurance group 1:0 flow-attribute detail
=====
Application-Assurance Flow Attribute Detailed Statistics
=====
Type                               Octets           Packets           Flows
-----
Flow attribute : audio
Confidence  : 0-19
  From sub           1494             1                 1
  To sub              0                 0                 0
Confidence  : 20-39
  From sub              0                 0                 0
  To sub              0                 0                 0
Confidence  : 40-59
  From sub              0                 0                 0
  To sub              0                 0                 0
Confidence  : 60-79
  From sub              0                 0                 0
  To sub              0                 0                 0
```

```

Confidence : 80-100
  From sub      118251      1146      1
  To sub       136584      1314      1
...

show application-assurance group 1:0 flow-attribute summary
=====
Application-Assurance Flow Attribute Statistics Summary
=====
Type                Confidence
                   0-19      20-39     40-59     60-79     80-100
-----
Flow attribute : audio
Total bytes         0.5%      0%       0%       0%       99.5%
Total packets       0%       0%       0%       0%       100%
Total flows        33.3%     0%       0%       0%       66.7%
-----
Flow attribute : video
Total bytes        100%      0%       0%       0%       0%
Total packets     100%      0%       0%       0%       0%
Total flows       100%      0%       0%       0%       0%
-----
Flow attribute : upload
Total bytes        100%      0%       0%       0%       0%
Total packets     100%      0%       0%       0%       0%
Total flows       100%      0%       0%       0%       0%
-----
Flow attribute : download
Total bytes        100%      0%       0%       0%       0%
Total packets     100%      0%       0%       0%       0%
Total flows       100%      0%       0%       0%       0%
-----
Flow attribute : encrypted
Total bytes         0%       0%       0%       0%       100%
Total packets       0%       0%       0%       0%       100%
Total flows        20.6%     0%       0%       0%       79.4%
-----
Flow attribute : abr_service
Total bytes         0%       0%       0%       0%       100%
Total packets       0%       0%       0%       0%       100%
Total flows         1.7%     0%       0%       0%       98.3%
-----
Flow attribute : real_time_communication
Total bytes         0%       0%       0%       0%       100%
Total packets       0%       0%       0%       0%       100%
Total flows         1.7%     0%       0%       0%       98.3%
=====
    
```

Table 160: Flow Attributes Output Field Descriptions

Label	Description
Flow attribute	Displays information for a specific flow attribute.
Confidence	An indication of the certainty that an attribute applies to a flow. Displays the percentage of flows within each range of confidence levels for the attribute.
Octets	Number of octets in the confidence level range.

Label	Description
Packets	Number of packets in the confidence level range.
Flows	Number of flows in the confidence level range.
Total bytes	Percentage of the total bytes per confidence range for a specific flow attribute.
Total packets	Percentage of the total packets per confidence range for a specific flow attribute.
Total flows	Percentage of the total flows per confidence range for a specific flow attribute.

## 9.33 flow-distribution

### flow-distribution

#### Syntax

**flow-distribution**

#### Context

[\[Tree\]](#) (show>lag flow-distribution)

#### Full Context

show lag flow-distribution

#### Description

This command displays the allocated distribution of traffic flows.

#### Platforms

All

## 9.34 flow-ipv4

### flow-ipv4

#### Syntax

**flow-ipv4** [hunt] [aspath-regex *reg-exp*] [ **community** *comm-id*]

## Context

[\[Tree\]](#) (show>router>bgp>routes flow-ipv4)

## Full Context

```
show router bgp routes flow-ipv4
```

## Description

This command displays BGP flow IPv4 routes.

## Parameters

### *reg-exp*

Displays routes matching the specified regular expression, up to 80 characters.

### *comm-id*

Specifies the community ID, up to 72 characters.

**Values** `[as-num:comm-val | ext-comm | well-known-comm | large-comm]`

where:

- *as-num* — 0 to 65535
  - *comm-val* — 0 to 65535
  - *ext-comm* — the extended community, defined as one of the following:
    - `{target | origin}:ip-address:comm-val`
    - `{target | origin}:asnum:ext-comm-val`
    - `{target | origin}:ext-asnum:comm-val`
    - **bandwidth**:*asnum:val-in-mbps*
    - **ext:4300**:*ovstate*
    - **ext** *t:value1:value2*
    - **flowspec-set**:*ext-asnum:group-id*
- where:
- *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)

- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

## Platforms

All

## 9.35 flow-ipv6

### flow-ipv6

#### Syntax

**flow-ipv6** [*hunt*] [*aspath-regex* *reg-exp*] [**community** *comm-id*]

#### Context

[\[Tree\]](#) (show>router>bgp>routes flow-ipv6)

#### Full Context

```
show router bgp routes flow-ipv6
```

#### Description

This command displays BGP flow IPv6 routes.

#### Parameters

##### *reg-exp*

Displays routes matching the specified regular expression, up to 80 characters.

##### *comm-id*

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:

- *{target | origin}:ip-address:comm-val*
- *{target | origin}:asnum:ext-comm-val*
- *{target | origin}:ext-asnum:comm-val*
- **bandwidth**:asnum:val-in-mbps
- **ext:4300**:ovstate
- **ex** \t:value1:value2
- **flowspec-set**:ext-asnum:group-id

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

## Platforms

All

## 9.36 flow-record-search

### flow-record-search

#### Syntax

```
flow-record-search aa-sub {esm sub-ident-string | sap sap-id | spoke-sdp sdp-id:vc-id | transit  
transit-aasub-name | mobile {imsi imsi-msisdn | msisdn imsi-msisdn | imei imei} apn apn-name
```

| **dsm mac** *mac-address* | **esm-mac** *esm-mac-name*} [**protocol** *protocol-name*] [**application** *app-name*] [**app-group** *app-group-name*] [**flow-status** *flow-status*] [**start-flowid** *start-flowid*] [**classified** *classified*] [**server-ip** *ip-address*] [**server-port** *port-num*] [**client-ip** *ip-address*] [**bytes-tx** *kbytes*] [**flow-duration** *minutes*] [**max-count** *max-count*] [**search-type** *search-type*] [**url** *file-url*]

**flow-record-search isa** *mda-id* [**protocol** *protocol-name*] [**application** *app-name*] [**app-group** *app-group-name*] [**flow-status** *flow-status*] [**start-flowid** *start-flowid*] [**classified** *classified*] [**server-ip** *ip-address*] [**server-port** *port-num*] [**client-ip** *ip-address*] [**bytes-tx** *kbytes*] [**flow-duration** *minutes*] [**max-count** *max-count*] [**search-type** *search-type*] [**url** *file-url*]

## Context

[Tree] (tools>dump>app-assure>group flow-record-search)

## Full Context

tools dump application-assurance group flow-record-search

## Description

This command dumps application-assurance flow-records matching the specified criteria for a specific AA subscriber.

## Parameters

### **application** *app-name*

Displays flows for the specified application name.

### **app-group** *app-group-name*

Displays flows for the specified application group.

### **bytes-tx** *kbytes*

Display flows with the specified minimum kilobytes.

**Values** 0 to 4294967295

### **classified** *classified*

Specifies the starting flow ID.

**Values** yes, no

### **client-ip** *ip-address*

Display flows with the specified client IP address.

**Values** ipv4-address - a.b.c.d ipv6-address - x:x:x:x:x:x:x (eight 16-bit pieces)

### **dsm mac** *mac-address*

Displays flows for the specified subscriber.

### **esm sub-ident-string**

Displays flows for the specified subscriber.

### **esm-mac** *esm-mac-name*

Displays flows for the specified ESM MAC.

**flow-duration *minutes***

Display flows with the specified minimum duration in minutes.

**Values** 0 to 4294967295

**flow-status *flow-status***

Displays only flows that are active or closed.

**Values** active, closed

**max-count *max-count***

Specifies the maximum count of flows to display.

**Values** 1 to 4294967295

**protocol *protocol-name***

Displays flows for the specified protocol.

**sap *sap-id***

Displays flows for the specified SAP.

**search-type *search-type***

Specifies the level of detail displayed for flows that match the search criteria.

**Values** default — Displays some per flow information.  
count — Displays the number of matching flows.  
detail — Displays all per flow information available.

**server-ip *ip-address***

Display flows with the specified server IP address.

**Values** ipv4-address - a.b.c.d  
ipv6-address - x:x:x:x:x:x:x (eight 16-bit pieces)

**server-port *port-num***

Display flows with the specified server port number.

**Values** 0 to 65535

**spoke-sdp *sdp-id:vc-id***

Displays flows for the specified spoke SDP.

**start-flowid *start-flowid***

Specifies the starting flow ID.

**Values** 0 to 4294967295

**transit *transit-aasub-name***

Displays flows for the specified transit subscriber.

**url *file-url***

Specifies the URL for the file to direct the search output to. The file may be local or remote.



### Values

local-url | remote-url

local-url	[<cflash-id>/][<file-path>]
	200 chars max, including cflash-id
	directory length 99 chars max each
remote-url	[[ftp://  tftp://]<login>:<pswd>@<remote-locn>/ ][<file-path>]
	255 chars max
	directory length 99 chars max each
remote-locn	[ <hostname>   <ipv4-address>   <ipv6- address> ]
	ipv4-address a.b.c.d
	ipv6-address x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d.d[-interface] x - [0..FFFF]H d - [0..255]D interface - 32 chars max, for link local addresses
	cflash-id flash slot ID

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of flow record search information.

#### Output Example

```
*A:Dut-C# tools dump application-assurance group 74:40346 flow-record-search aa-sub esm-mac
"diameter_esm-000100000002"
=====
Application-Assurance flow record search, Version 1.0
Search Start Time: "01/13/2017 14:30:50" (UTC)
Search Criteria:
  group[:partition]: 74:40346
  aa-sub: diameter_esm-000100000002 (esm-mac)
  protocol name: none specified
  application name: none specified
  app-group name: none specified
  flow-status: none specified
  start-flowId: none specified
```

```

classified:      none specified
server-ip:      none specified
server-port:    none specified
client-ip:      none specified
bytes-tx:       none specified
flow-duration:  none specified
max-count:      none specified
search-type:    default
=====
FlowId  Init  Src-ip      Dst-ip      Ip-prot  Src-prt  Dst-prt  Protocol
      Application  Pkts-tx  Bytes-tx  Pkts-disc  Bytes-disc  Time-ofp(UTC)
      Time-olp(UTC)
124    yes  192.168.200.2  200.1.1.3  icmp     0         0         "non_tcp_udp"  "ICMP"
      1      42          0          0          "01/13/2017 14:27:06"
      "01/13/2017 14:27:06"
300    no   192.168.200.2  200.1.1.3  icmp     0         0         "non_tcp_udp"  "ICMP"
      1      42          0          0          "01/13/2017 14:27:30"
      "01/13/2017 14:27:30"
    
```

## 9.37 force

### force

#### Syntax

**force** *aps-id* {**protect** | **working**} [*number number*]

#### Context

[\[Tree\]](#) (tools>perform>aps force)

#### Full Context

tools perform aps force

#### Description

This command forces a switch to either the protect or working circuit

#### Parameters

##### *aps-id*

Specifies the APS ID.

##### Values

<i>aps-id</i>	<i>aps-group-id</i>
aps	keyword
group-id	1 to 128

##### **protect**

This command clears a physical port that is acting as the protection circuit for the APS group.

### **working**

This command clears a physical port that is acting as the working circuit for this APS group.

### **number**

Specifies the APS channel number.

**Values** 1, 2

## **Platforms**

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## **force**

### **Syntax**

**force** *ring-index* **path** {a | b}

### **Context**

[Tree] (tools>perform>eth-ring force)

### **Full Context**

tools perform eth-ring force

### **Description**

This command forces a block on the ring port where the command is issued.

### **Parameters**

#### ***ring-index***

Specifies the ring index.

**Values** 1 to 128

#### **path**

Displays information for a specific path.

**Values** a, b

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## **force**

### **Syntax**

**force all-mc** {active | standby}

```
force lag-id lag-id [sub-group sub-group-id] { active | standby }  
force peer-mc ip-address {active | standby}
```

## Context

[\[Tree\]](#) (tools>perform>lag force)

## Full Context

tools perform lag force

## Description

This command allows forcing the specified LAG, subgroup, all MC-LAGs, or remote peer for MC-LAGs to become active or standby when LAG runs in Active/Standby mode. To remove the forced condition, execute the **tools perform lag clear-force** command.

## Parameters

### **all-mc**

Specifies all MC-LAGs.

### **active**

Specifies to become active.

### **standby**

Specifies to become standby.

### **lag-id**

Specifies the LAG ID.

**Values** 1 to 800

### **sub-group-id**

Specifies the subscriber group ID.

**Values** 1 to 16

### **ip-address**

Specifies the IP address.

**Values** ipv4-address: a.b.c.d

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d, where x: [0 to FFFF]H and d: [0 to 255]D

## Platforms

All

## force

### Syntax

**force id** *tunnel-id*

**force** *lsp-name*

### Context

[\[Tree\]](#) (tools>perform>router>mpls>tp-tunnel force)

### Full Context

tools perform router mpls tp-tunnel force

### Description

This command performs a force switchover of the MPLS-TP LSP from the active path to the protect path.

### Parameters

#### *tunnel-id*

Specifies the tunnel number of the MPLS-TP LSP.

**Values** 1 to 61440

#### *lsp-name*

Specifies name of the MPLS-TP LSP, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 9.38 force-partner-down

## force-partner-down

### Syntax

**force-partner-down**

### Context

[\[Tree\]](#) (tools>perform>router>dhcp>server>failover force-partner-down)

[\[Tree\]](#) (tools>perform>router>dhcp>server>pool>failover force-partner-down)

[\[Tree\]](#) (tools>perform>router>dhcp6>server>failover force-partner-down)

[\[Tree\]](#) (tools>perform>router>dhcp6>server>pool>failover force-partner-down)

## Full Context

```
tools perform router dhcp local-dhcp-server failover force-partner-down
tools perform router dhcp local-dhcp-server pool failover force-partner-down
tools perform router dhcp6 local-dhcp-server failover force-partner-down
tools perform router dhcp6 local-dhcp-server pool failover force-partner-down
```

## Description

This command forces a DHCP server to transition from the COMMUNICATIONS-INTERRUPTED state to the PARTNER-DOWN state.

It is important to note that this command should only be used if the remote DHCP server is out of service, else duplicate address allocations could occur.

In case of a communication failure between two redundant DHCP servers, the DHCP server transitions to the COMMUNICATIONS-INTERRUPTED state. In this state, the DHCP server allocates IP addresses for new leases from the local and address-driven address-ranges only. This prevents duplicate address allocations.

If during the partner-down-delay time, the communication with the remote DHCP server is not restored, then the DHCP server transitions to the PARTNER-DOWN state. In this state, the DHCP server also allocates IP addresses for new leases from the remote ranges. A DHCP server should only reach this state when the remote DHCP server is out of service, else IP address conflicts can occur.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 9.39 force-switch-path

### force-switch-path

#### Syntax

```
force-switch-path [lsp lsp-name] [path path-name]  
no force-switch-path lsp lsp-name
```

#### Context

[\[Tree\]](#) (tools>perform>router>mpls force-switch-path)

#### Full Context

```
tools perform router mpls force-switch-path
```

#### Description

Use this command to move from a standby path to any other standby path regardless of priority.

The **no** form of the command reverts to priority path.

## Parameters

### *lsp-name*

Specifies an existing LSP name, up to 64 characters in length.

### *path-name*

Specifies the path name to which to move the specified LSP.

## Platforms

All

## 9.40 force-switchover

### force-switchover

## Syntax

```
force-switchover tunnel-group local-group-id [ now ] [to {master | standby}]
```

## Context

[\[Tree\]](#) (tools>perform>redundancy>multi-chassis>mc-ipsec force-switchover)

## Full Context

```
tools perform redundancy multi-chassis mc-ipsec force-switchover
```

## Description

This command manually switches over the 7750 SR mc-ipsec mastership of specified tunnel-group.

## Parameters

### *local-group-id*

Specifies the local tunnel-group id configured in the **config>redundancy>multi-chassis>peer>mc-ipsec** context.

### **now**

This optional parameter removes the prompt of confirmation.

### **to {master | standby}**

specifies the desired mastership state to be achieved following a forced switch between this tunnel group and its redundant peer. If the target state matches the current state when the switch is attempted, then no switch will occur.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 9.41 force-uplink-switch

### force-uplink-switch

#### Syntax

**force-uplink-switch** *client-port-id*

#### Context

[\[Tree\]](#) (tools>perform>satellite force-uplink-switch)

#### Full Context

tools perform satellite force-uplink-switch

#### Description

This command forces traffic associated with the specified satellite client port to be switched away from the current uplink depending on which uplink is currently active.

#### Parameters

*client-port-id*

Specifies the satellite client port associated with the port mapping, in the format **esat- id/ slot/port force**.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 9.42 forced-single-sfm-overload

### forced-single-sfm-overload

#### Syntax

**[no] forced-single-sfm-overload**

#### Context

[\[Tree\]](#) (tools>perform>redundancy forced-single-sfm-overload)

#### Full Context

tools perform redundancy forced-single-sfm-overload



## Description

This command forces the single-sfm-overload state on or off.

## Platforms

7450 ESS, 7750 SR-1, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s, 7950 XRS, VSR

## 9.43 forcerenew

### forcerenew

#### Syntax

```
forcerenew svc-id service-id { ip ip-address[/mask] | mac ieee-address}
```

```
forcerenew [interface interface-name | sap sap-id | sdp sdp-id:vc-id] [ip ip-address[/mask] | mac ieee-address]
```

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt forcerenew)

#### Full Context

tools perform subscriber-mgmt forcerenew

#### Description

This command forces the renewal of lease state and only applies to the 7450 ESS and 7750 SR.

In cases where the IPoE hosts resides in a private retail subnet VPRN, the MAC address must be used for the **tools>perform>subscriber-mgmt>forcerenew** command instead of the IP address.

#### Parameters

##### *service-id*

Forces renewal of the lease state for the specified service ID.

**Values** 1 to 2147483647

##### *sap-id*

Forces renewal of the lease state for the specified SAP.

##### *ip-address*

Forces renewal of the lease state for the specified IP address.

##### *ieee-address*

Forces renewal of the lease state for the specified MAC address.

##### *interface-name*

Forces renewal of the lease state for the specified interface name.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 9.44 forwarding

### forwarding

#### Syntax

```
forwarding [sub-domain sub-domain] [ bsl bsf] [neighbor-prefix ip-address] [si si]
```

#### Context

[\[Tree\]](#) (show>router>bier forwarding)

#### Full Context

```
show router bier forwarding
```

#### Description

This command shows the BIER forwarding table.

#### Parameters

##### *sub-domain*

Specifies a sub-domain.

**Values** 0 to 255

##### *bsf*

Specifies a bit string length.

**Values** 256 to 1024

##### *ip-address*

Specifies a neighbor-prefix in IP address format.

##### *si*

Specifies an SI.

**Values** 0 to 16

#### Platforms

All

#### Output

The following output is an example of a BIER forwarding configuration. [Table 161: BIER Forwarding Fields](#) provides BIER forwarding field descriptions.

### Output Example

```

*A:Dut-A# show router bier forwarding sub-domain 0
=====
Neighbor
  Nexthop
  Interface
  [SI]: Label
    Forwarding Bit Mask
    BFR-ID : Prefix
-----
=====
BIER Forwarding Database Sub-Domain 0 BSL 256
=====
10.20.1.2
  10.180.1.2
  ip-10.180.1.1
  [0]: 1048556
    0x0000000000000000000000000000000000000000000000000000000000000036
      2 : 10.20.1.2
      3 : 10.20.1.3
      5 : 10.20.1.5
      6 : 10.20.1.6
=====
Total (Sub-Domain 0): 1
=====
Total BIER Forwarding entries : 1
=====
*A:Dut-A#
    
```

Table 161: BIER Forwarding Fields

Label	Description
Neighbor	The neighbor IP address
Nexthop	The next-hop IP address
Interface	The egress interface name for the programmed tunnel
[SI]:Label	The SI and label. The BitString and the SI together determine the set of BFERs to which a given packet will be delivered. The label is the egress transport label used for the given SI/SD.
Forwarding Bit Mask	The BitString forwarding mask
BFR-ID: Prefix	The BFR ID and the prefix reachable through this SD/SI/BFR-ID

## 9.45 forwarding-policies

### forwarding-policies

#### Syntax

**forwarding-policies**

#### Context

[\[Tree\]](#) (clear>router>mpls forwarding-policies)

#### Full Context

clear router mpls forwarding-policies

#### Description

This command resets or clears statistics for forwarding policies.

#### Platforms

All

### forwarding-policies

#### Syntax

**forwarding-policies**

#### Context

[\[Tree\]](#) (show>router>mpls forwarding-policies)

#### Full Context

show router mpls forwarding-policies

#### Description

Commands in this context display forwarding policies.

#### Platforms

All

## forwarding-policies

### Syntax

**forwarding-policies**

### Context

[\[Tree\]](#) (monitor>router>mpls forwarding-policies)

### Full Context

monitor router mpls forwarding-policies

### Description

This command monitors statistics for MPLS forwarding policies.

### Platforms

All

## 9.46 forwarding-policy

## forwarding-policy

### Syntax

**forwarding-policy** [*policy*] [**detail**]

### Context

[\[Tree\]](#) (show>router>mpls>forwarding-policies forwarding-policy)

### Full Context

show router mpls forwarding-policies forwarding-policy

### Description

This command displays the MPLS forwarding policy information.

### Parameters

***policy***

Specifies the policy name.

***detail***

Specifies detailed information.

## Platforms

All

## Output

Table 162: MPLS Forward-policy Output Fields describes MPLS forward-policy output fields.

Table 162: MPLS Forward-policy Output Fields

Label	Description
Policy Name	Specifies the MPLS forwarding policy name.
Binding Label	Specifies the binding label number.
Admin	Specifies the administrative state (up   down).
OperState	Specifies the operational state (up   down).
No. of Forwarding Policies	Specifies the number of forwarding policies.
Type	Specifies the type.
Binding Label	Specifies the binding label number.
Last Change	Specifies the date and time of the last change.

## Output Example

```
A*A:Dut-B>config>router>mpls# /show router mpls forwarding-policies forwarding-policy
=====
MPLS Forwarding Policy
=====
Policy Name                               Binding Label    Admin    Oper
-----
smallername!poll                          0               Down     Down
policy1-32chars-policy1-32chars           33              Up       Down
fwdpolicyName!!ThisNameIs32chars          111             Up       Down
-----
No. of Forwarding Policies: 3
=====
*A:A:Dut-B>show>router>mpls# forwarding-policies forwarding-policy detail
=====
Forwarding Policy Status (Detail)
=====
Type : Label
-----
Policy Name      : smallername!poll
Admin State      : Down           Oper State      : Down
Binding Label    : 0              Preference      : 2
Binding Label    : 0
Last Change      : 03/28/2018 23:52:45
Ingress Stats    : Disabled
```

```
-----  
Type : Label  
-----  
Policy Name      : policy1-32chars-policy1-32chars  
Admin State     : Up                               Oper State      : Down  
Binding Label   : 33                             Preference     : 254  
Binding Label   : 33  
Last Change     : 03/28/2018 23:57:33  
Ingress Stats   : Disabled  
  
Next-hop Group  : 20  
Admin State     : Up                               Oper State      : Down  
Resolution Type : direct  
Last Change     : 03/28/2018 23:57:32  
  
Primary  
Oper State     : Down                               NH Addr        : 2.2.2.2  
Last Change   : 03/28/2018 23:57:32  
Backup  
Oper State     : Down                               NH Addr        : 3.3.3.3  
Last Change   : 03/28/2018 23:57:32  
=====
```

## forwarding-policy

### Syntax

**forwarding-policy** *name* **egress-stats**

### Context

[\[Tree\]](#) (clear>router>mpls>forwarding-policies forwarding-policy)

### Full Context

clear router mpls forwarding-policies forwarding-policy

### Description

This command clears the egress statistics of the specified forwarding policy instance.

### Parameters

#### *name*

Specifies the forwarding policy name up to 64 characters.

#### **egress-stats**

Clears the egress statistics of the specified forwarding policy.

### Platforms

All

## forwarding-policy

### Syntax

```
forwarding-policy plcy egress-stats [interval seconds] [repeat repeat] [{ absolute | rate}]
```

### Context

[\[Tree\]](#) (monitor>router>mpls>forwarding-policies forwarding-policy)

### Full Context

monitor router mpls forwarding-policies forwarding-policy

### Description

This command clears the egress statistics of the specified forwarding policy instance.

### Parameters

#### *plcy*

Specifies the forwarding policy up to 64 characters.

#### *egress-stats*

Monitors the egress statistics of the specified forwarding policy.

#### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

#### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

#### *absolute*

Displays the absolute statistics of the specified forwarding policy.

#### *rate*

Displays the rate statistics of the specified forwarding policy.

### Platforms

All



## 9.47 forwarding-table

### forwarding-table

#### Syntax

**forwarding-table** [*slot-number*]

#### Context

[\[Tree\]](#) (clear>router forwarding-table)

#### Full Context

clear router forwarding-table

#### Description

This command clears the route table on the specified IOM with the route table.  
If the slot number is not specified, the command forces the route table to be recalculated.

#### Parameters

##### *slot-number*

Clears the specified IOM slot.

**Values** 1 to 10 (depending on chassis model)

**Default** all IOMs

#### Platforms

All

## 9.48 fp

### fp

#### Syntax

**fp**

#### Context

[\[Tree\]](#) (show>card>virtual fp)

## Full Context

show card virtual fp

## Description

This command displays virtual FP information on the card.

## Platforms

VSR

fp

## Syntax

fp [*slot-number*[/*fp-number*]] [*path path-type*]

## Context

[\[Tree\]](#) (show>mcast-management fp)

## Full Context

show mcast-management fp

## Description

This command displays multicast path management FP-related information.

## Parameters

### *slot-number*

Displays information for the specified card slot.

### *fp-number*

Specifies an FP.

**Values** 1 to 8

### *path-type*

Specifies the path type.

**Values** primary, secondary, blackhole

## Platforms

7450 ESS, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-7/12/12e, 7750 SR-s, 7950 XRS, VSR

## Output

The following output is an example of multicast management MDA information.

## Output Example

```
*A:PE# show mcast-management fp 5/1
```

```

=====
Fp 5/1
=====
S/F  Bw-policy                Type           In-use-Bw      Admin
-----
5/1  reduce-paths                Primary        3964 Kbps      up
      reduce-paths                Secondary      0 Kbps         up
      reduce-paths                Blackhole     0 Kbps         up
-----
*A:PE#
    
```

## fp

### Syntax

**fp** [*fp-number*]

### Context

[\[Tree\]](#) (tools>dump>resource-usage>card fp)

### Full Context

tools dump resource-usage card fp

### Description

This command displays resource information for FPs.

### Parameters

***fp-number***

Specifies an FP.

**Values** 1 to 8

### Platforms

All

### Output

The following output is an example of FP card resource usage information.

#### Output Example

```

# tools dump resource-usage card 1 fp 1
=====
Resource Usage Information for Card Slot #1 FP #1
=====
Total  Allocated  Free
-----
...
Dynamic Policer Stats (in use by Egress) -
    Fast Depth Monitored Queues | 10000  25  9975
    Egress User Queues | 253952  6  253946
    Egress User Policers | 393215  1  393214
    
```

## 9.49 fp-resource-policy

### fp-resource-policy

#### Syntax

**fp-resource-policy** [*fp-resource-policy-name*] [ **association**]

**fp-resource-policy** [*fp-resource-policy-name*] [ **detail**]

#### Context

**[Tree]** (show>qos fp-resource-policy)

#### Full Context

show qos fp-resource-policy

#### Description

This command displays the FP resource policies configured on the system.

#### Parameters

##### ***fp-resource-policy-name***

Displays the FP resource policy name, up to 32 characters.

##### **association**

Displays the entities associated to the specified FP resource policy.

##### **detail**

Displays detailed FP resource policies information, including FP resource policy associations.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of FP resource policy information.

#### Output Example

```
A:PE# show qos fp-resources-policy
=====
FP Resource Policy Summary
=====
Policy Name          Description
-----
default              Default FP resource policy.
fp-res-policy-1
=====
A:PE#
A:PE# show qos fp-resources-policy fp-res-policy-1 associations
```

```
=====
FP Resource Policy
=====
Policy Name      : fp-res-policy-1
Description      : (Not Specified)
-----
Associations
-----
FP      : 1-1
FP      : 1-2
FP      : 1-3
FP      : 1-4
=====
A:PE#
A:PE# show qos fp-resources-policy fp-res-policy-1 detail
=====
FP Resource Policy
=====
Policy Name      : fp-res-policy-1
Description      : (Not Specified)
-----
Queues
-----
Ingress Percent of Total : 50.00
-----
Associations
-----
FP      : 1-1
FP      : 1-2
FP      : 1-3
FP      : 1-4
=====
A:PE#
```

## 9.50 fp-tunnel-table

### fp-tunnel-table

#### Syntax

**fp-tunnel-table** *slot-number* [*ip-prefix/prefix-length*]

**fp-tunnel-table** *slot-number* [{ **ipv4** | **ipv6**}]

#### Context

**[Tree]** (show>router fp-tunnel-table)

#### Full Context

show router fp-tunnel-table

#### Description

This command displays the IOM/IMM label, next-hop and outgoing interface information for BGP, LDP and RSVP tunnels used in any of the following applications:

- BGP shortcut (**config>router>bgp>next-hop-resolution>shortcut-tunnel**)
- IGP shortcut (**config>router>isis[ospf]>igp-shortcut**)
- IGP prefix resolved to an LDP LSP (**config>router>ldp-shortcut**)
- Static route resolved to a LDP or RSVP LSP
- VPRN auto-bind
- 6PE/6VPE.

## Parameters

### *slot-number*

Displays information for the specified slot.

**Values** 1 to 10

### *ip-prefix[/prefix-length]*

Displays routes only matching the specified *ip-address* and length.

#### **Values**

ipv4-prefix:	a.b.c.d (host bits must be 0)
ipv4-prefix-length:	0 to 32
ipv6	ipv6-prefix[/pref*]: x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x: [0 to FFFF]H d: [0 to 255]D
prefix-length:	1 to 128

### **ipv4**

Displays the output to IPv4-based FP tunnel tables.

### **ipv6**

Displays the output to IPv6-based FP tunnel tables.

## Platforms

All

## Output

The following output is an example of router FP tunnel information.

### Output Example

```
*A:Dut-B# show router fp-tunnel-table 1 10.20.1.3/32
=====
Tunnel Table Display
```

```

Legend:
B - FRR Backup
=====
Destination          NextHop          Intf/Tunnel      Protocol  Tunnel-ID
  Lbl
-----
10.20.1.3/32
  262137            10.2.1.3         1/1/3:1          LDP        -
10.20.1.3/32
  262133            10.2.1.3         1/1/3:1          RSVP        1
10.20.1.3/32
  18602             10.2.1.3         1/1/3:1          SR-ISIS-0  -
10.20.1.3/32
  19102             10.2.1.3         1/1/3:1          SR-OSPF-0  -
-----
Total Entries : 4
=====
    
```

```

*A:Dut-B#

*A:Dut-C# show router fp-tunnel-table 1
=====
Tunnel Table Display

Legend:
B - FRR Backup
=====
Destination          NextHop          Intf/Tunnel      Protocol  Tunnel-ID
  Lbl
-----
10.0.0.1/32
  20001            10.3.4.4         2/1/3:1          SR-ISIS-0  -
  20001/21005      10.2.3.2(B)      1/1/2
10.20.1.2/32
  21002            10.2.3.2         1/1/2            SR-ISIS-0  -
  21002/21005      10.3.4.4(B)      2/1/3:1
10.20.1.4/32
  21004            10.3.4.4         2/1/3:1          SR-ISIS-0  -
  21004/21005      10.2.3.2(B)      1/1/2
10.20.1.5/32
  21005            10.2.3.2         1/1/2            SR-ISIS-0  -
  21005            10.3.4.4(B)      2/1/3:1
-----
Total Entries : 4
=====
    
```

```

*A:Dut-C#

*A:Dut-C# show router fp-tunnel-table 1
=====
Tunnel Table Display

Legend:
B - FRR Backup
=====
Destination          NextHop          Intf/Tunnel      Protocol  Tunnel-ID
  Lbl
-----
10.1.3.1/32
  3                10.1.3.1         1/1/1            SR         -
10.2.3.2/32
  3                10.2.3.2         1/1/2:1          SR         -
10.3.5.5/32
  3                10.3.5.5         2/1/1            SR         -
    
```

```

10.2.3.2/32          SR -
  3                10.2.3.2      1/1/2:2
10.20.1.1/32       SR-OSPF-0 -
  21011            10.1.3.1      1/1/1
  22011            10.2.3.2(B)    1/1/2:1
10.20.1.2/32       SR-OSPF-0 -
  22022            10.2.3.2      1/1/2:2
  24022/25044      10.3.5.5(B)    2/1/1
10.20.1.4/32       SR-OSPF-0 -
  25044            10.3.5.5      2/1/1
  22044            10.2.3.2      1/1/2:2
10.20.1.5/32       SR-OSPF-0 -
  25055            10.3.5.5      2/1/1
  24055/22044      10.2.3.2(B)    1/1/2:2
10.20.1.6/32       SR-OSPF-0 -
  25066            10.3.5.5      2/1/1
  24066/22044      10.2.3.2(B)    1/1/2:2
-----
Total Entries : 9
-----
=====
*A:Dut-C#
=====
*A:Dut-F# show router fp-tunnel-table 1
=====
Tunnel Table Display
Legend:
B - FRR Backup
=====
Destination          NextHop          Intf/Tunnel      Protocol  Tunnel-ID
  Lbl
-----
10.0.11.1/32        10.0.26.2        1/1/3:1          SR-OSPF-0 -
  30004              10.0.36.3(B)     1/1/4:1
  40004
10.0.22.2/32        10.0.26.2        1/1/3:1          SR-OSPF-0 -
  30005              10.0.36.3(B)     1/1/4:1
  20005/40004
10.0.26.2/32        10.0.26.2        1/1/3:1          SR -
  3                  10.0.56.5(B)     1/1/2:1
  50011/60001
10.0.26.2/32        10.0.26.2        1/1/3:1          SR -
  3                  10.0.36.3(B)     1/1/4:1
  20005/40004
10.0.33.3/32        10.0.36.3        1/1/4:1          SR-OSPF-0 -
  40000              10.0.26.2(B)     1/1/3:1
  30998
10.0.36.3/32        10.0.36.3        1/1/4:1          SR -
  3
10.0.44.4/32        10.0.26.2        1/1/3:1          SR-OSPF-0 -
  30001              10.0.56.5(B)     1/1/2:1
  60001
10.0.55.5/32        10.0.56.5        1/1/2:1          SR-OSPF-0 -
  60002              10.0.26.2(B)     1/1/3:1
  30995
10.0.56.5/32        10.0.56.5        1/1/2:1          SR -
  3
10.20.1.1/32        10.0.26.2        1/1/3:1          SR-OSPF-0 -
  30010              10.0.36.3(B)     1/1/4:1
  40010
10.20.1.2/32        10.0.26.2        1/1/3:1          SR-OSPF-0 -
  30011              10.0.56.5(B)     1/1/2:1
  50011/60001
10.20.1.3/32        10.0.56.5        1/1/2:1          SR-OSPF-0 -
  
```



```

40006          10.0.36.3          1/1/4:1
20006/30004   10.0.26.2(B)         1/1/3:1
10.20.1.4/32
30007          10.0.26.2          1/1/3:1
60007          10.0.56.5(B)        1/1/2:1
10.20.1.5/32
60008          10.0.56.5          1/1/2:1
50008/30001   10.0.26.2(B)        1/1/3:1
    
```

-----  
 Total Entries : 14  
 -----

=====  
 \*A:Dut-F#

\*A:Dut-C# show router fp-tunnel-table 1 10.20.1.5/32

=====  
 Tunnel Table Display

Legend:  
 B - FRR Backup

```

=====
Destination      NextHop          Intf/Tunnel      Protocol  Tunnel-ID
  Lbl
-----
10.20.1.5/32
262135           10.10.5.5        2/1/1            LDP       -
3                10.20.1.5(B)     SR
10.20.1.5/32
474390           10.10.5.5        2/1/1            SR-ISIS-0 -
474390/474389   10.10.12.2(B)   lag-1
    
```

-----  
 Total Entries : 2  
 -----

=====  
 \*A:Dut-C>config>router>ospf3# show router fp-tunnel-table 1 ipv6

=====  
 IPv6 Tunnel Table Display

Legend:  
 B - FRR Backup

```

=====
Destination      Protocol          Tunnel-ID
  Lbl
  NextHop
-----
3ffe::100:b01/128
20004            SR-OSPF3-0       -
  fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"  1/1/1:1
30004/70005
  fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0" (B) 2/1/2:1
3ffe::100:1602/128
20005            SR-OSPF3-0       -
  fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"  1/1/1:1
70005
  fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0" (B) 2/1/2:1
3ffe::100:2c04/128
20001            SR-OSPF3-0       -
  fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"  1/1/1:1
70001
  fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0" (B) 2/1/2:1
3ffe::100:3705/128
70002            SR-OSPF3-0       -
  fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"  2/1/2:1
30002/20005
    
```

```

    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" (B)          1/1/1:1
3ffe::100:4206/128          SR-OSPF3-0              -
70003
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"          2/1/2:1
30003/20005
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" (B)          1/1/1:1
3ffe::a14:101/128          SR-OSPF3-0              -
20010
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"          1/1/1:1
30010/70005
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0" (B)          2/1/2:1
3ffe::a14:102/128          SR-OSPF3-0              -
20011
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"          1/1/1:1
70011
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0" (B)          2/1/2:1
3ffe::a14:104/128          SR-OSPF3-0              -
20007
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"          1/1/1:1
70007
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0" (B)          2/1/2:1
3ffe::a14:105/128          SR-OSPF3-0              -
70008
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"          2/1/2:1
30008/20005
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" (B)          1/1/1:1
3ffe::a14:106/128          SR-OSPF3-0              -
70009
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"          2/1/2:1
30009/20005
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" (B)          1/1/1:1
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"/128 SR          524325
3
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"          1/1/1:1
30004/70005
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0" (B)          2/1/2:1
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"/128 SR          524326
3
    fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"          2/1/2:1
30003/20005
    fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0" (B)          1/1/1:1
-----
Total Entries : 12
=====

```

```

A:Dut-C# show router fp-tunnel-table 1 ipv6
=====
IPv6 Tunnel Table Display
Legend:
B - FRR Backup
=====
Destination          Protocol          Tunnel-ID
Lbl
NextHop              Intf/Tunnel
-----
3ffe::a14:101/128    LDP              -
524286
    fe80::21-"ip-3FFE::A0A:203"          1/1/1
3ffe::a14:101/128    SR-ISIS-0        -
424488

```

fe80::21-"ip-3FFE::A0A:203"		1/1/1
3ffe::a14:102/128	LDP	-
524286		
fe80::122-"ip-3FFE::A0A:C03"		lag-1
3ffe::a14:102/128	SR-ISIS-0	-
439489		
fe80::122-"ip-3FFE::A0A:C03"		lag-1
3ffe::a14:104/128	LDP	-
524284		
fe80::114-"ip-3FFE::A0A:B03"		2/1/2
3ffe::a14:104/128	SR-ISIS-0	-
469491		
fe80::114-"ip-3FFE::A0A:B03"		2/1/2
3ffe::a14:105/128	LDP	-
524286		
fe80::55-"ip-3FFE::A0A:503"		2/1/1
3ffe::a14:105/128	SR-ISIS-0	-
484492		
fe80::55-"ip-3FFE::A0A:503"		2/1/1
3ffe::a14:106/128	LDP	-
524269		
fe80::114-"ip-3FFE::A0A:B03"		2/1/2
3ffe::a14:106/128	SR-ISIS-0	-
469493		
fe80::114-"ip-3FFE::A0A:B03"		2/1/2
3ffe::a14:106/128	SR-TE	655362
424493		
3ffe::a14:101		SR
3ffe::a14:106/128	SR-TE	655363
424493		
3ffe::a14:101		SR
fe80::21-"ip-3FFE::A0A:203"/128	SR	524289
3		
fe80::21-"ip-3FFE::A0A:203"		1/1/1
fe80::21-"ip-3FFE::A0A:203"/128	SR	524290
3		
fe80::21-"ip-3FFE::A0A:203"		1/1/1
fe80::32-"ip-3FFE::A0A:303"/128	SR	524293
3		
fe80::32-"ip-3FFE::A0A:303"		1/1/2
fe80::32-"ip-3FFE::A0A:303"/128	SR	524294
3		
fe80::32-"ip-3FFE::A0A:303"		1/1/2
fe80::55-"ip-3FFE::A0A:503"/128	SR	524300
3		
fe80::55-"ip-3FFE::A0A:503"		2/1/1
fe80::55-"ip-3FFE::A0A:503"/128	SR	524301
3		
fe80::55-"ip-3FFE::A0A:503"		2/1/1
fe80::114-"ip-3FFE::A0A:B03"/128	SR	524295
3		
fe80::114-"ip-3FFE::A0A:B03"		2/1/2
fe80::114-"ip-3FFE::A0A:B03"/128	SR	524296
3		
fe80::114-"ip-3FFE::A0A:B03"		2/1/2
fe80::122-"ip-3FFE::A0A:C03"/128	SR	524291
3		
fe80::122-"ip-3FFE::A0A:C03"		lag-1
fe80::122-"ip-3FFE::A0A:C03"/128	SR	524292
3		
fe80::122-"ip-3FFE::A0A:C03"		lag-1
-----		
Total Entries : 22		
-----		

```
=====
A:Dut-C# show router fp-tunnel-table 3 3ffe::a14:101/128
=====
IPv6 Tunnel Table Display
Legend:
B - FRR Backup
=====
Destination                                Protocol      Tunnel-ID
 Lbl                                         NextHop      Intf/Tunnel
-----
3ffe::a14:101/128                          LDP          -
 524286
 fe80::21-"ip-3FFE::A0A:203"                1/1/1
3ffe::a14:101/128                          SR-ISIS-0    -
 424488
 fe80::21-"ip-3FFE::A0A:203"                1/1/1
-----
Total Entries : 2
=====
```

## 9.51 frag-stats

### frag-stats

#### Syntax

**frag-stats**

#### Context

[\[Tree\]](#) (show>service>nat>map frag-stats)

#### Full Context

show service nat map frag-stats

#### Description

This command displays NAT MAP fragmentation information.

#### Platforms

VSR

#### Output

The following output is an example of this command, and [Table 163: Map Frag-Stats Output Fields](#) describes the fields.

#### Output Example

```
*A:Dut-D>show>service>nat>map# show service nat map frag-stats
=====
```

```

NAT MAP fragmentation statistics
=====
Rx Resolved Packets           : 0
Rx Unresolved Packets        : 0
Tx Frags                      : 0
Dropped Frags                : 0
Created Flows                 : 0
Flow Collisions              : 0
Exceeded Max Flows           : 0
Exceeded Max Timeouts        : 0
Exceeded Max Buffers         : 0
Exceeded Max Buffers Per Flow : 0
In-Use Flows %               : 0
Max Flows %                  : 0
In-Use Buffers %             : 0
Max Buffers %                : 0
=====
    
```

Table 163: Map Frag-Stats Output Fields

Label	Description
Rx Resolved Packets	<p>Specifies fragments that were resolved and never buffered. This includes:</p> <ul style="list-style-type: none"> <li>• first fragments (MF=1, FO=0), which are always resolved by definition</li> <li>• non-first fragments that have matching flow records</li> </ul>
Rx Unresolved Packets	<p>Specifies the number of packets that were queued in the system since the last clear command was invoked. For example, out-of-order fragments without a matching flow record (missing the first fragment). These packets can be eventually resolved and forwarded, or discarded (for example, as a result of timeout).</p>
Tx Frags	<p>Specifies the fragments that were transmitted (Rx Resolved and Rx Unresolved that were eventually resolved) out of the fragmentation logic within the VSR. There is no guarantee that these fragments will be transmitted out of the system as they may be dropped on egress due to congestion or restrictions imposed by the configured filter.</p>
Dropped Frags	<p>Specifies the dropped fragments due to some fragmentation issue (timeout, buffer full).</p>
Created Flows	<p>A cumulative counter that represents the total number of flow records since the last <b>clear</b> command was invoked. It only counts the first fragment and roughly represents the amount of fragmented packets that were processed by the system since the last clear command.</p> <p>The counter does not provide any indication about the number of flows (packets whose fragments were transmitted fully) that were actually transmitted.</p>

Label	Description
Flow Collisions	Represents the number of overlapping first fragments. For example, when a flow record already exists and another first fragment for this flow is received.
Exceeded Max Flows	Specifies the number of occurrences when the number of flows in the system exceeded its maximum supported value.
Exceeded Max Timeouts	Specifies the number of fragments that have timed out (since the last <b>clear</b> command): <ul style="list-style-type: none"> <li>Rx unresolved (buffered) fragments that have timed out, due to a missing first fragment</li> <li>deleted flow-records because they have not received all fragments within the timeout period</li> </ul>
Exceeded Max Buffers	Specifies the number of occurrences when the number of buffers in the system exceeded its maximum supported value.
Exceeded Max Timeouts	Specifies the number of fragments that have timed out (since the last clear command): <ul style="list-style-type: none"> <li>Rx unresolved (buffered) fragments that have timed out, due to a missing 1st fragment</li> <li>deleted flow-records because they have not received all fragments within the timeout period</li> </ul>
Exceeded Max Buffers	Specifies the number of occurrences when the number of buffers in the system exceeded its maximum supported value.
Exceeded Max Buffers Per Flow	Specifies the number of occurrences when a fragment count per flow has exceeded its limit.
In-Use Flows	An approximation of the number of flow records that are currently in use. The counter provides an estimate, expressed in percent, of the number of fragmented packets that were being processed at the time the counter was invoked.
Max Flows	Specifies the amount of time in seconds that the system will remain in a hold down state before being used again.
In-Use Buffers	Represents the amount of buffered fragments, expressed in percent of the maximum buffer space, that can be used for fragmentation.
Max Buffers	A non-cumulative counter that represents the maximum number of buffers allocated since the last <b>clear</b> command. The counter captures the highest value of the <b>buffers-in-use</b> counter since the last <b>clear</b> command. The counter shows the percentage of the total buffer space that can be used by fragmentation.

## 9.52 free-addresses

### free-addresses

#### Syntax

**free-addresses** *ip-address[/mask]*

**free-addresses summary** [**subnet** *ip-address[/ mask]*]

**free-addresses pool** *pool-name*

#### Context

**[Tree]** (show>router>dhcp>local-dhcp-server free-addresses)

#### Full Context

show router dhcp local-dhcp-server free-addresses

#### Description

This command displays the free addresses in a subnet.

#### Parameters

##### **pool-name**

Specifies a DHCP pool name on the router.

##### **subnet**

Specifies a subnet of IP addresses that are served from the pool.

##### **summary**

Displays summary output of the free addresses.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of free address information

#### Output Example

```
*A:ALA-48>show>router>dhcp>local-dhcp-server# free addresses pool test subnet 10.0.0.0/24
=====
Free addresses in subnet 10.0.0.0/24
=====
IP Address
-----
No. of free addresses: 0
=====
*A:ALA-48>show>router>dhcp>local-dhcp-server#
```

[Table 164: Free Addresses Field Descriptions](#) describes free addresses pool command output fields.

Table 164: Free Addresses Field Descriptions

Field	Description
IP Address	The free IP addresses in the subnet
No of free addresses	The total number of free addresses in the subnet

## 9.53 ftn

ftn

### Syntax

**ftn** [**endpoint** *endpoint* | **sender** *sender* | **nexthop** *nexthop* | **lsp-id** *lsp-id* | **tunnel-id** *tunnel-id* | **label** *start-label end-label*]

### Context

[\[Tree\]](#) (tools>dump>router>mpls ftn)

### Full Context

tools dump router mpls ftn

### Description

This command dumps FEC-to-NHLFE (FTN) information for MPLS.

### Parameters

#### **endpoint**

Specifies the endpoint or destination IP address.

**Values** a.b.c.d

#### **sender**

Specifies the sender IP address.

**Values** a.b.c.d

#### **lsp-id**

Specifies the LSP ID.

**Values** 0 to 65535

#### **tunnel-id**

Specifies the tunnel ID.



**Values** 0 to 65535

***nexthop***

Specifies the next hop IP address.

**Values** a.b.c.d

***start-label***

Specifies the start label value for the label range of the display.

**Values** 32 to 524287

***end-label***

Specifies the end label value for the label range of the display.

**Values** 32 to 524287

**Platforms**

All

## 9.54 fwd-path-ext

### fwd-path-ext

**Syntax**

**fwd-path-ext** [**fpe** *fpe-id*]

**fwd-path-ext** **fpe** *fpe-id* **associations**

**Context**

[\[Tree\]](#) (show fwd-path-ext)

**Full Context**

show fwd-path-ext

**Description**

This command displays FPE information.

**Parameters**

***fpe-id***

Specifies the FPE ID.

**Values** 1 to 64

## associations

Displays a list of current fwd path extensions to which the FPE is associated.

## Platforms

All

## Output

The following output is an example of show fwd-path-ext command information, and [Table 165: Output Fields: show fwd-path-ext](#) describes the output fields.

### Output Example

```
A:CPM148>config>fwd-path-ext>fpe$ show fwd-path-ext fpe
```

```
=====
FPE Info
=====
```

FPE Id	Path Application	Description
	pxc/xc-a, xc-b	
1	pxc 1	pw-port xyz
2	lag 1, lag 2	vxlan-term abc

```
-----
Number of entries : 2
-----
```

```
SDP-Id Range: 1-100
=====
```

```
*A:CPM148>config>fwd-path-ext>fpe$ show fwd-path-ext fpe 1
```

```
=====
FPE Id: 2
=====
```

```
Description      : xyz
Path              : pxc 1
Pw Port          : Enabled      Oper: up
Vxlan Termination : Disabled
```

```
*A:CPM148>config>fwd-path-ext>fpe$ show fwd-path-ext fpe 2
```

```
=====
FPE Id: 2
=====
```

```
Description      : abc
Path              : lag 1, lag 2
Pw Port          : Disabled
Vxlan Termination : Disabled      Oper: down B Can be down due to lag 1/2 being down, PXC
within the lags being down
```

```
*A:CPM148>config>fwd-path-ext>fpe$ show fwd-path-ext fpe 1 associations
```

```
=====
pw-port associations
=====
```

Epipe Svc Id	PW-Port-Id
110	

```
=====
```

```

220
330
=====
Vxlan-termination associations
=====
None
=====
*A:CPM148>config>fwd-path-ext>fpe$ show fwd-path-ext fpe 2 associations
=====
pw-port associations
=====
None
=====
Vxlan-termination associations
=====
tunnel-termination
=====
10.1.1.1
10.2.1.1
2001:db8::10
2001:db8::20
=====
    
```

Table 165: Output Fields: show fwd-path-ext

Field	Description
FPE Id	Displays the configured ID of the FPE.
Path pxc/ xc-a, xc-b	Displays the path associated with this FPE. This can be a single PXC (pair of PXC sub-ports .a and .b), or it can be a LAG with PXC sub-ports as member ports. PXC based LAG is used for redundancy and increased throughput of the FPE. In case of a PXC based LAG, the path is referred to as xc-a and xc-b.
Application	Displays the application associated with this FPE. Based on the application type, the system will internally configure logic on underlying PXC (or PXC based LAG) necessary to accommodate the application.
Description	Displays the user-configurable string used to describe the use of the FPE.
SDP-id Range	Displays the configurable SDP-id range used for internal SDPs that are utilized by FPEs.
Path	Path associated with this FPE. This can be a single PXC (pair of PXC sub-ports .a and .b), or it can be a LAG with PXC sub-ports as member ports. PXC based LAG is used for redundancy and increased throughput of the FPE.
PW-Port	Displays the FPE that is used by PW-port application.
VXLAN-Termination	Displays the FPE that is used by Vxlan-Termination application.
Oper	Displays the status of the application.

---

Field	Description
EPIPE svc Id	Displays the Epipe service ID with which the PW-port is associated.
PW-Port Id	Displays the PW-port ID that is associated with the EPIPE.
Tunnel termination	Displays the IP addresses on which the VXLAN tunnel is terminated.

# 10 g Commands

## 10.1 gateway

### gateway

#### Syntax

**gateway** *brg-id* *brg-ident*

#### Context

**[Tree]** (show>subscr-mgmt>vrgw>brg gateway)

#### Full Context

show subscriber-mgmt vrgw brg gateway

#### Description

This command displays all operational data related to the BRG.

#### Parameters

*brg-ident*

Specifies the BRG identifier, up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of subscriber management BRG gateway information.

#### Output Example

```
Node# show subscriber-mgmt brg gateway brg-id "00:00:00:00:00:05"
=====
Bridged Residential Gateways
=====
Identifier                : 00:00:00:00:00:05
SLAAC prefix              : 3ffe:0:0:5::/64
Subnet                    : 21.0.0.1/24
Subnet start address     : 21.0.0.20
Subnet end address       : 21.0.0.40
DMZ address               : (Not Specified)
DNS 1 v4                 : (Not Specified)
DNS 1 v6                 : (Not Specified)
DNS 2 v4                 : (Not Specified)
DNS 2 v6                 : (Not Specified)
```

```
NBNS 1 : (Not Specified)
NBNS 2 : (Not Specified)
DHCP lease time : 600
DHCP stream destination : (Not Specified)
IPv4 portal URL : (Not Specified)
IPv6 portal URL : (Not Specified)
BRG profile : brg
Subscriber profile : subprof_mig_4
SLA profile : (Not Specified)
UPnP policy override : (Not Specified)
DMZ address in use : no
Proxy authenticated : yes
Ingress IPv4 filter override : N/A
Egress IPv4 filter override : N/A
Ingress IPv6 filter override : N/A
Egress IPv6 filter override : N/A
No QoS overrides found.
No Filter rules received.
=====
```

## gateway

### Syntax

**gateway brg-id *brg-ident***

**gateway brg-id *brg-ident* idle-bindings [binding *ieee-address*]**

**gateway all-gateways**

**gateway brg-id *brg-ident* all-hosts**

**gateway brg-id *brg-ident* host *ieee-address***

### Context

[\[Tree\]](#) (clear>subscr-mgmt>vrgw>brg gateway)

### Full Context

clear subscriber-mgmt vrgw brg gateway

### Description

This command clears BRG gateway data.

### Parameters

#### ***brg-ident***

Clears the specified BRG and all related hosts from the system.

#### **idle-bindings**

Clears a specific idle binding or all idle binding from the BRG. An idle binding is a DHCP lease that has not been expired but for which the host has been removed due to idle timeout.

#### ***ieee-address***

Specifies the MAC address of the binding to remove.

### **all-gateways**

Clears all BRGs and related hosts from the system.

### **all-hosts**

Clears all hosts belonging to a specified BRG.

### **ieee-address**

Clears a specific host belonging to a specified BRG.

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## **gateway**

### **Syntax**

**gateway name** *name*

**gateway** [**name** *name*] **tunnel** [**private-address-type** *private-address-type*]

**gateway** [**service** *service-id*]

**gateway tunnel** [*ip-address:port*]

**gateway name** *name* **tunnel***ip-address:port*

**gateway name** *name* **tunnel**

**gateway** [**name** *name*] **tunnel state** *state*

**gateway** [**name** *name*] **tunnel idi-value** *idi-prefix*

**gateway tunnel count**

**gateway tunnel** [**private-address-type** *private-address-type*]

### **Context**

[\[Tree\]](#) (show>ipsec gateway)

### **Full Context**

show ipsec gateway

### **Description**

This command displays IPsec gateway information.

### **Parameters**

#### ***name***

Specifies an IPsec gateway name.

#### ***service-id***

Specifies the service ID of the default security service used by the IPsec gateway.

**Values** 1 to 214748364 svc-name: Up to 64 characters maximum

***ip-address:port***

Displays the IP address and UDP port of the SAP IPsec gateway to the tunnel.

**Values** 0 to 65535

***state***

Specifies the state of the tunnel.

**Values** up, down

***idi-prefix***

Displays a string as an IDi prefix. With this parameter, the system lists all the peers with IDi that has specified prefixes.

**count**

Displays the number of IPsec gateway tunnels with the **ike-policy>authmethod** command set to **psk**.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of the **show ipsec gateway** command.

**Output Example**

```
show ipsec gateway tunnel 10.2.2.100:500
=====
IPsec Remote Users Tunnel Detail
=====
IP Addr: 10.2.2.100:500, port: 500
-----
Service Id       : 300                Sap Id           : tunnel-1.public:100
Address          : 10.2.2.100:500
Private If       : priv
Private Address  : 10.20.20.50
Private Service  : 400                Template Id      : 1
Replay Window   : None                Bi Direction SA  : true
Host MDA        : 1/2
Match TrustAnchor: labroot
Last Oper Changed: 05/04/2016 17:36:20
IKE IDI Type     : derAsn1Dn
IKE IDI Value    : CN=Client-1
-----
Dynamic Keying Parameters
-----
Transform Id1    : 1                Transform Id2     : None
Transform Id3    : None             Transform Id4     : None
IPsec GW Name    : rw
Local GW Address : 172.16.100.1
Ike Policy Id    : 1                Ike Pol Auth      : cert
Pre Shared Key   : None
Cert Profile     : segw
Trust Anchor Prof: labroot
Selected Cert    : segw-1.cert
Selected Key     : segw-1.key
Send Chain Prof  : None
Local Id Type    : none
```



```
Client Database
  Name      : (Not Specified)
  Client ID : None
Radius Acct Plcy : None
Radius Auth Plcy : None
TS-List      : <none>
Certificate Status Verify
-----
Primary      : crl                Secondary      : none
Default Result : good
DHCP
-----
Admin State   : Up                Send Release   : true
Service       : 400
Gi-Address    : 10.20.20.1
Server1-Address : 10.9.9.9
DHCIPv4 Lease
-----
Private Address : 10.20.20.50
Acquired        : 2016/05/04 17:36:19 UTC
Renew           : 2016/05/04 18:06:19 UTC
Rebind         : 2016/05/04 18:28:49 UTC
Valid Lifetime
  End          : 2016/05/04 18:36:19 UTC
  Total       : 3600 seconds
  Remaining   : 3585 seconds
Server        : 10.9.9.9
-----
ISAKMP-SA
-----
State          : Up
Established    : 05/04/2016 17:36:20 Lifetime      : 86400
Expires       : 05/05/2016 17:36:20
ISAKMP Statistics
-----
Tx Packets    : 2                Rx Packets    : 2
Tx Errors     : 0                Rx Errors     : 0
Tx DPD        : 0                Rx DPD        : 0
Tx DPD ACK    : 0                Rx DPD ACK    : 0
DPD Timeouts  : 0                Rx DPD Errors : 0
-----
IPsec-SA : 1, Inbound (index 2)
-----
SPI           : 207232
Auth Algorithm : Sha1            Encr Algorithm : Aes128
Installed     : 05/04/2016 17:36:20 Lifetime      : 3600
Local Traffic Selectors:
10.9.9.9-10.9.9.9
  any protocol
Remote Traffic Selectors:
10.20.20.50-10.20.20.50
  any protocol
Aggregate Statistics
-----
Bytes Processed : 0                Packets Processed: 0
Crypto Errors   : 0                Replay Errors     : 0
SA Errors       : 0                Policy Errors     : 0
-----
IPsec-SA : 1, Outbound (index 1)
-----
SPI           : 3433111520
Auth Algorithm : Sha1            Encr Algorithm : Aes128
Installed     : 05/04/2016 17:36:20 Lifetime      : 3600
Local Traffic Selectors:
```

```

10.9.9.9-10.9.9.9
  any protocol
Remote Traffic Selectors:
10.20.20.50-10.20.20.50
  any protocol
Aggregate Statistics
-----
Bytes Processed   : 0                Packets Processed: 0
Crypto Errors    : 0                Replay Errors    : 0
SA Errors        : 0                Policy Errors    : 0
=====
Fragmentation Statistics
=====
Encapsulation Overhead      : 73
Pre-Encapsulation
  Fragmentation Count      : 0
  Last Fragmented Packet Size : 0
Post-Encapsulation
  Fragmentation Count      : 0
  Last Fragmented Packet Size : 0
=====

A:vsim-2# show ipsec gateway name "rw" tunnel 10.1.1.100
=====
IPsec Remote Users Tunnel Detail
=====
-----
IP Addr: 10.1.1.100, port: 500
-----
Service Id       : 300                Sap Id           : tunnel-1.public:100
Address          : 10.1.1.100
Private If       : priv
Private Address  : 10.20.20.50
Private Service  : 400                Template Id      : 1
Replay Window   : None                Bi Direction SA : true
Host MDA        : 1/2
Match TrustAnchor: labroot
Last Oper Changed: 12/14/2016 22:17:05
IKE IDI Type    : derAsn1Dn
IKE IDI Value   : CN=Client-1
TS List         : <none>
Pre-Shared Key  : <none>
IKE Policy      : (Not Specified)
TCP MSS
  Public        : N/A
  Private       : 1200 octets
-----
Dynamic Keying Parameters
-----
Transform Id1    : 1                Transform Id2    : None
Transform Id3    : None            Transform Id4    : None
IPsec GW Name   : rw
Local GW Address : 172.16.100.1
Ike Policy Id   : 1                Ike Pol Auth     : cert
Cert Profile     : segw
Trust Anchor Prof: labroot
Selected Cert    : segw-1.cert
Selected Key     : segw-1.key
Send Chain Prof  : None
Local Id Type    : none
Client Database
  Client Index   : None
Radius Acct Plcy : None
Radius Auth Plcy : None
    
```

```
Certificate Status Verify
-----
Primary       : crl                Secondary       : none
Default Result : good

DHCP
-----
Admin State   : Up                Send Release    : true
Service      : 400
Gi-Address    : 10.20.20.1
Server1-Address : 10.9.9.9
DHCIPv4 Lease

-----
Private Address : 10.20.20.50
Acquired       : 2016/12/14 22:17:04 UTC
Renew         : 2016/12/14 22:47:04 UTC
Rebind       : 2016/12/14 23:09:34 UTC
Valid Lifetime
  End        : 2016/12/14 23:17:04 UTC
  Total     : 3600 seconds
  Remaining : 3580 seconds
Server      : 10.9.9.9
-----

ISAKMP-SA
-----
State       : Up
Established : 12/14/2016 22:17:04 Lifetime      : 86400
Expires    : 12/15/2016 22:17:04
ISAKMP Statistics
-----
Tx Packets   : 2                Rx Packets    : 2
Tx Errors    : 0                Rx Errors     : 0
Tx DPD       : 0                Rx DPD        : 0
Tx DPD ACK   : 0                Rx DPD ACK    : 0
DPD Timeouts : 0                Rx DPD Errors : 0
-----

IPsec-SA : 1, Inbound (index 2)
-----
SPI       : 322790
Auth Algorithm : Sha1          Encr Algorithm : Aes128
Installed  : 12/14/2016 22:17:05 Lifetime      : 3600
Local Traffic Selectors:
172.16.100.1-172.16.100.1
  any protocol
Remote Traffic Selectors:
10.20.20.50-10.20.20.50
  any protocol
Aggregate Statistics
-----
Bytes Processed : 0                Packets Processed: 0
Crypto Errors   : 0                Replay Errors     : 0
SA Errors       : 0                Policy Errors     : 0
-----

IPsec-SA : 1, Outbound (index 1)
-----
SPI       : 3462984686
Auth Algorithm : Sha1          Encr Algorithm : Aes128
Installed  : 12/14/2016 22:17:05 Lifetime      : 3600
Local Traffic Selectors:
172.16.100.1-172.16.100.1
  any protocol
Remote Traffic Selectors:
10.20.20.50-10.20.20.50
  any protocol
```

```

Aggregate Statistics
-----
Bytes Processed   : 0           Packets Processed: 0
Crypto Errors    : 0           Replay Errors    : 0
SA Errors        : 0           Policy Errors    : 0
=====
Fragmentation Statistics
=====
Encapsulation Overhead      : 73
Pre-Encapsulation
  Fragmentation Count       : 0
  Last Fragmented Packet Size : 0
Post-Encapsulation
  Fragmentation Count       : 0
  Last Fragmented Packet Size : 0
=====
=====
    
```

## gateway

### Syntax

**gateway name name tunnel ip-address:port [statistics] [saved-key]**

**gateway name name tunnel ip-address:port [temp-mtu]**

**gateway name name [saved-key]**

**gateway name name tunnel ip-address:port [saved-key]**

### Context

[\[Tree\]](#) (clear>ipsec gateway)

### Full Context

clear ipsec gateway

### Description

This command clears dynamic IPsec tunnel states.

The system clears the statistics counter for the specified tunnel when the **statistics** parameter option is specified.

The system clears the saved IKE and ESP keys for the specified tunnel, or for all tunnels on the specified gateway if no tunnel is specified when the **saved-key** parameter option is specified.

The system removes the specified tunnel when the **statistics**, **saved-key**, or **temp-mtu** parameters are not specified.

### Parameters

#### **name**

Specifies the name of the IPsec GW, up to 32 characters.

#### **ip-address**

Specifies the IP address and port of the remote peer.

<b>Values</b>	<ip-address>	ip-address	a.b.c.d
		ipv6-address	x:x:x:x:x:x:x
			x:x:x:x:x:d.d.d.d
			x - [0 to FFFF]H
			d - [0 to 255]D

### **port**

Specifies the port of the remote peer. The specifies channel is cleared if the **statistics**, **saved-key**, or **temp-mtu** parameters are not specified.

**Values** 0 to 65535

### **statistics**

Clears the stats counter.

### **saved-key**

Clears the saved IKE and ESP keys.

### **temp-mtu**

Clears temporary MTU learned from MTU propagation for the specified tunnel.

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 10.2 gateways

### gateways

#### **Syntax**

**gateways**

**gateways brg-profile** *profile-name*

#### **Context**

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg gateways)

#### **Full Context**

show subscriber-mgmt vrgw brg gateways

#### **Description**

This command lists operational gateway information for all BRGs active on the system. This list can optionally be reduced by specifying a BRG profile.

## Parameters

### *profile-name*

Specifies the name of the BRG profile to filter.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of BRG gateway information.

### Output Example

```
Node# show subscriber-mgmt brg gateways
=====
Bridged Residential Gateways
=====
Identifier                : 00:00:00:00:00:05
SLAAC prefix              : 3ffe:0:0:5::/64
Subnet                    : 21.0.0.1/24
Subnet start address      : 21.0.0.20
Subnet end address        : 21.0.0.40
DMZ address               : (Not Specified)
DNS 1 v4                  : (Not Specified)
DNS 1 v6                  : (Not Specified)
DNS 2 v4                  : (Not Specified)
DNS 2 v6                  : (Not Specified)
NBNS 1                    : (Not Specified)
NBNS 2                    : (Not Specified)
DHCP lease time           : 600
DHCP stream destination  : (Not Specified)
IPv4 portal URL           : (Not Specified)
IPv6 portal URL           : (Not Specified)
BRG profile               : brg
Subscriber profile        : subprof_mig_4
SLA profile               : (Not Specified)
UPnP policy override      : (Not Specified)
DMZ address in use        : no
Proxy authenticated       : yes
Ingress IPv4 filter override : N/A
Egress IPv4 filter override : N/A
Ingress IPv6 filter override : N/A
Egress IPv6 filter override : N/A
No QoS overrides found.
No Filter rules received.
-----
No. of gateways: 1
=====
```

## 10.3 generate-key

### generate-key

#### Syntax

**generate-key authentication** *authentication-protocol authentication-password* [**privacy** *privacy-protocol privacy-password*] [**engine-id** *identifier*]

#### Context

[\[Tree\]](#) (tools>perform>system>mgmt-itf>snmp generate-key)

#### Full Context

tools perform system management-interface snmp generate-key

#### Description

This command generates localized SNMPv3 authentication and privacy keys, which are a hash of the SNMP engine ID and a password. The SNMP engine ID can be displayed with the **show system information | match "SNMP Engine ID"** command and does not need to be entered. If keys are being generated for a different system, its SNMP engine ID must be specified.

#### Parameters

##### **authentication**

Generates a localized authentication key.

##### **authentication-protocol**

Specifies the SNMPv3 authentication protocol.

<b>Values</b>	<b>hmac-md5-96</b> — Specifies use of the HMAC-MD5-96 authentication protocol.
	<b>hmac-sha1-96</b> — Specifies use of the HMAC-SHA-96 authentication protocol.
	<b>hmac-sha2-224</b> — Specifies use of the HMAC-SHA-224 authentication protocol.
	<b>hmac-sha2-256</b> — Specifies use of the HMAC-SHA-256 authentication protocol.
	<b>hmac-sha2-384</b> — Specifies use of the HMAC-SHA-384 authentication protocol.
	<b>hmac-sha-512</b> — Specifies use of the HMAC-SHA-512 authentication protocol.

##### **authentication-password**

Specifies the password used to generate the authentication key.

### **privacy**

Keyword to generate a localized privacy key.

### ***privacy-protocol***

Specifies the SNMPv3 privacy protocol.

- Values**
- cbc-des** — Specifies the use of the CBC-DES privacy protocol. This parameter is not available in FIPS-140-2 mode.
  - cfb128-aes-128** — Specifies the use of the CFB128-AES-128 privacy protocol.
  - cfb128-aes-192** — Specifies the use of the CFB128-AES-192 privacy protocol.
  - cfb128-aes-256** — Specifies the use of the CFB128-AES-256 privacy protocol.

### ***privacy-password***

Specifies the privacy password used to generate the privacy key.

### **engine-id *identifier***

Keyword that specifies the SNMP engine ID. The identifier must be a hexadecimal string between 10 and 64 digits in length.

## **Platforms**

All

## **Output**

The following output is an example of a generated authentication and privacy key.

### **Output Example**

```
A:ALA-1# tools perform system management-interface snmp generate-key authentication hmac-sha2-512 thisistheauthenticationpassword privacy cfb128-aes-256 thisistheprivacypassword
Authentication :
a764a7fa90099fb179266e2b400a225e3f0960a842fc55704e5b2eb0750bd6a2ca0ed8450b5b57b41f50fab253961ee698bfc272a71bcc919420c603cef5e628
Privacy       : 94560a59230f63241fd596b920cfe2e703f60a8ea0c7c341a913f8d3a46f2256
SNMP Engine ID : 0000197f0000b65dff000000
```

## **10.4 global**

### **global**

## **Syntax**

### **global**



## Context

[\[Tree\]](#) (clear>redundancy>multi-chassis>mcr>statistics global)

## Full Context

clear redundancy multi-chassis mc-ring statistics global

## Description

This command clears multi-chassis ring global statistics.

## Platforms

All

## 10.5 gnss

### gnss

## Syntax

gnss

## Context

[\[Tree\]](#) (tools>dump>port gnss)

## Full Context

tools dump port gnss

## Description

This command displays signal strength information for visible satellites for the port.

This command is supported only for use with global navigation satellite system (GNSS) RF ports, for platforms that support one or more GNSS receivers.

## Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-1se, 7750 SR-2se

## Output

The following output is an example of GNSS port information.

### Output Example (Supported 7750 SR FP5 platforms)

```
tools dump port A/gnss gnss
=====
Satellites
=====
Constellation  SVPRN  Band  Signal-Strength
```

```
-----
                                C/No (dB-Hz)
-----
GPS          1      L1      44
GPS          1      L5      46
GPS          3      L1      42
GPS          3      L5      44
GPS          6      L1      41
GPS          6      L5      43
GPS         14      L1      39
GPS         14      L5      41
GPS         17      L1      31
GPS         17      L5      34
GPS         19      L1      38
GPS         19      L5      40
GPS         24      L1      45
GPS         24      L5      47
GALILEO      2      E1      46
GALILEO      2      E5      47
GALILEO     15      E1      37
GALILEO     15      E5      38
GALILEO     27      E1      39
GALILEO     27      E5      40
GALILEO     36      E1      46
GALILEO     36      E5      47
GALILEO     30      E1      38
GALILEO     30      E5      38
GALILEO     13      E1      46
GALILEO     13      E5      47
GPS          11      L1      45
GPS          11      L5      47
-----
No. of Used Satellites: 28
=====
```

## 10.6 gre-eth-bridged

### gre-eth-bridged

#### Syntax

**gre-eth-bridged**

#### Context

[\[Tree\]](#) (show>service>system gre-eth-bridged)

#### Full Context

show service system gre-eth-bridged

#### Description

This command displays GRE Ethernet bridged service information.

## Platforms

All

## 10.7 gre-tunnel-template

### gre-tunnel-template

#### Syntax

```
gre-tunnel-template [gre-tunnel-template-name [ associations]]
```

#### Context

[\[Tree\]](#) (show>filter gre-tunnel-template)

#### Full Context

```
show filter gre-tunnel-template
```

#### Description

This command displays GRE tunnel template information.

#### Parameters

##### *gre-tunnel-template-name*

Specifies a GRE tunnel template name, up to 32 characters.

##### **associations**

Appends association information.

## Platforms

All

## Output

The following output is an example of GRE tunnel template information.

### Output Example

```
*A:node-3# show filter gre-tunnel-template "GRE-tunnels" associations
=====
GRE tunnel template
=====
GRE Tunnel template : GRE-tunnels           Applied      : No
Description         : 10.20.1.5
GRE key              : if-index
Skip ttl decrement  : No
Source address      : 10.20.1.3
Destination address : 10.20.1.2
Destination address : 10.20.1.5
-----
Associations
```

```
-----  
No associations found  
=====
```

```
*A:node-3#
```

## gre-tunnel-template

### Syntax

**gre-tunnel-template**

### Context

[\[Tree\]](#) (tools>dump>filter>resources gre-tunnel-template)

### Full Context

tools dump filter resources gre-tunnel-template

### Description

This command displays how many GRE tunnel templates are configured.

### Platforms

All

### Output

The following output is an example of filter resource GRE tunnel templates information.

### Output Example

```
*A:Dut-C# tools dump filter resources gre-tunnel-template
```

```
=====
```

```
Filter - GRE tunnel template resources
```

```
=====
```

```
Used   : 1024
```

```
Free   : 0
```

```
Total : 1024
```

```
=====
```

## 10.8 group

### group

### Syntax

**group** [*tunnel-group-name* **[statistics]**]

## Context

[\[Tree\]](#) (show>router>l2tp group)

## Full Context

show router l2tp group

## Description

This command displays L2TP group operational information.

## Parameters

### *tunnel-group-name*

Displays information for the specified tunnel group.

### *statistics*

Displays statistics for the specified tunnel group.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of L2TP group operational information.

### Output Example

```
*A:Dut-C# show router l2tp group
=====
L2TP Groups
=====
Group Name      Ses Limit Ses Assign   State  Tun Active Ses Active
              Tun Total  Ses Total
-----
isp1.group-1
              131071   existingFirst active   1         1
              1         1
isp1.group-2
              131071   weighted   active   2         5
              3         8
-----
No. of L2TP Groups: 2
=====
*A:Dut-C#

*A:Dut-C# show router l2tp group isp1.group-2
=====
Group Name: isp1.group-2
=====
Conn ID          Loc-Tu-ID Rem-Tu-ID State          Ses Active
  Group                               Assignment      Ses Total
-----
143523840        2190      17525   established    2
  isp1.group-2
  isp1.tunnel-3
236912640        3615      58919   closedByPeer   0
  isp1.group-2
  2
```

```

isp1.tunnel-2
658178048          10043    33762    draining          3
isp1.group-2
isp1.tunnel-2          3
-----
No. of tunnels: 3
=====
*A:Dut-C#

*A:Dut-C# show router l2tp group isp1.group-2 statistics
Group Name: isp1.group-2
-----
              Attempts    Failed    Failed-Aut          Active    Total
-----
Tunnels        3          0          0              2          3
Sessions       8          0          N/A             5          8
-----
              Pkt-Ctl          Pkt-Err          Octets
-----
Rx              51              0              1224
Tx              51              0              2796
-----
*A:Dut-C#
    
```

## group

### Syntax

**group** *tunnel-group-name*

### Context

[\[Tree\]](#) (clear>router>l2tp group)

### Full Context

clear router l2tp group

### Description

This command clears L2TP data.

### Parameters

***tunnel-group-name***

Specifies a L2TP tunnel group name.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## group

### Syntax

**group** *tunnel-group-name*

### Context

[\[Tree\]](#) (tools>perform>router>l2tp group)

### Full Context

tools perform router l2tp group

### Description

Commands in this context configure performance tools for L2TP tunnel group.

### Parameters

***tunnel-group-name***

Specifies the tunnel group name, up to 63 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## group

### Syntax

**group** [*grp-ip-address*] [**hosts** | **interfaces** | **saps**]

**group summary** [**hosts** | **interfaces** | **saps**]

### Context

[\[Tree\]](#) (show>router>igmp group)

### Full Context

show router igmp group

### Description

This command displays the multicast group and (S,G) addresses. If no *grp-ip-address* parameters are specified, then all IGMP group, (\*,G) and (S,G) addresses are displayed.

### Parameters

***grp-ip-address***

Displays specific multicast group addresses.

**hosts**

Displays hosts for the multicast group address.

**interfaces**

Displays interfaces for the multicast group address.

**saps**

Displays SAPs for the multicast group address.

**Platforms**

All

**Output**

The following output is an example of IGMP group information. [Table 166: IGMP Group Information Output Fields](#) describes the output fields for IGMP group information.

**Output Example**

```
*B:Dut-C# show router igmp group
=====
IGMP Interface Groups
=====
IGMP Host Groups
=====
(*,239.0.0.1)
  Fwd List : 239.112.1.2          Up Time : 0d 00:00:21
(10.11.0.1,239.0.0.1)
  Fwd List : 239.112.1.1          Up Time : 0d 00:00:30
  Blk List : 239.112.1.2          Up Time : 0d 00:00:21
(10.11.0.2,239.0.0.1)
  Fwd List : 239.112.1.1          Up Time : 0d 00:00:30
(*,239.0.0.2)
  Fwd List : 239.112.1.2          Up Time : 0d 00:00:21
(10.11.0.1,239.0.0.2)
  Blk List : 239.112.1.2          Up Time : 0d 00:00:21
-----
(*,G)/(S,G) Entries : 5
=====
*B:Dut-C#
*B:Dut-C# show router igmp group summary
=====
IGMP Interface Groups
=====
IGMP Host Groups Summary          Nbr Fwd Hosts          Nbr Blk Hosts
=====
(*,239.0.0.1)                     1                       0
(10.11.0.1,239.0.0.1)             1                       1
(10.11.0.2,239.0.0.1)             1                       0
(*,239.0.0.2)                     1                       0
(10.11.0.1,239.0.0.2)             0                       1
-----
(*,G)/(S,G) Entries : 5
=====
*B:Dut-C#
A:NYC# show router igmp group 239.24.24.24
=====
```



```

IGMP Groups
=====
(*,239.24.24.24)                               Up Time : 0d 05:23:23
  Fwd List  : nyc-vlc
-----
(*,G)/(S,G) Entries : 1
=====
A:NYC#
    
```

Table 166: IGMP Group Information Output Fields

Label	Description
IGMP Groups	The IP multicast sources corresponding to the IP multicast groups.
Fwd List	The list of interfaces in the forward list.
Blk List	The list of interfaces in the blocked list.

## group

### Syntax

**group** [*grp-ip-address*] [**source** *ip-address*] [**type** { **starg** | **sg**}] [**detail**] [*family*]

### Context

[\[Tree\]](#) (show>service>id>pim-snooping group)

### Full Context

show service id pim-snooping group

### Description

This command displays the multicast group information.

### Parameters

#### **grp-ip-address**

Specifies the IP multicast group address for which this entry contains information

#### **ip-address**

Specifies the source address for which this entry contains information.

#### **starg**

Specifies that only (\*,G) entries be displayed

#### **sg**

Specifies that only (S,G) entries be displayed

#### **detail**

Displays detailed group information.

### **family**

Displays either IPv4 or IPv6 information.

**Values** ipv4 or ipv6

### **Platforms**

All

### **Output**

The following output is an example of service PIM snooping information.

#### **Output Example**

```
*A:PE# show service id 1 pim-snooping group
=====
PIM Snooping Groups ipv4
=====
Group Address          Source Address        Type      Incoming
                        Intf                  (S,G)     Intf      Num
-----
239.252.0.1           10.0.0.2              (S,G)     SAP:1/1/2 2
-----
Groups : 1
=====
*A:PE#
```

### **group**

### **Syntax**

**group** [*name*] [*detail*]

### **Context**

[\[Tree\]](#) (show>router>bgp group)

### **Full Context**

show router bgp group

### **Description**

This command displays group information for a BGP peer group. This command can be entered with or without parameters.

When this command is issued without a group name, information about all peer groups displays.

When the command is issued with a specific group name, information only pertaining to that specific peer group displays.

The "State" field displays the BGP group's operational state. Other valid states are:

- Up - BGP global process is configured and running.
- Down - BGP global process is administratively shutdown and not running.

- Disabled - BGP global process is operationally disabled. The process must be restarted by the operator.

## Parameters

### *name*

Displays information for the specified BGP group, up to 64 characters.

### *detail*

Displays detailed information.

## Platforms

All

## Output

The following outputs are example of BGP group information, and [Table 167: Standard and Detailed Group Field Descriptions](#) describes the output fields.

### Output Example

```
*A:Dut-B#
*A:Dut-B# show router bgp group
=====
BGP Group
=====
-----
Group : abc
-----
Description : (Not Specified)
Group Type : No Type State : Down
Peer AS : n/a Local AS : 0
Local Address : n/a Loop Detect : Ignore
Import Policy : None Specified - Default Accept
Export Policy : None Specified - Default Accept
Hold Time : 90 Keep Alive : 30
Min Hold Time : 0
Cluster Id : None Client Reflect : Enabled
NLRI : Unicast Preference : 170
TTL Security : Disabled Min TTL Value : n/a
Graceful Restart : Disabled Stale Routes Time: n/a
Restart Time : n/a
Auth key chain : n/a
Bfd Enabled : Disabled Disable Cap Nego : Disabled
Creation Origin : manual
Default Route Tgt: Disabled
Aigp Metric : Disabled
Split Horizon : Disabled
Damp Peer Oscill*: Disabled
GR Notification : Disabled Fault Tolerance : Disabled
Next-Hop Unchang*: None
Routes Resolve T*: Disabled
Egress Engineeri*: Enabled
List of Static Peers
- 1.1.1.1 :
List of Dynamic Peers
Total Peers : 1 Established : 0
-----
Peer Groups : 1
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-B#
```

\*A:Dut-B#

**Output Example (7450 ESS and 7750 SR)**

```
*A:ALA-12# show router 3 bgp group
=====
BGP Groups
=====
Group           : To_AS_40000
-----
Description    : Not Available
Group Type     : No Type           State           : Up
Peer AS        : 40000             Local AS        : 65206
Local Address   : n/a             Loop Detect     : Ignore
Export Policy  : direct2bgp
Hold Time      : 90
Cluster Id     : None
NLRI           : Unicast
Keep Alive     : 30
Client Reflect : Enabled
Preference     : 170

List of Peers
- 10.0.0.1     : To_Jukebox
- 10.0.0.12    : Not Available
- 10.0.0.13    : Not Available
- 10.0.0.14    : To_ALA-1
- 10.0.0.15    : To_H-215
Total Peers    : 5                Established     : 2
=====
*A:ALA-12#
```

Table 167: Standard and Detailed Group Field Descriptions

Label	Description
Group	BGP group name
Group Type	No Type — Peer type not configured External — Peer type configured as external BGP peers Internal — Peer type configured as internal BGP peers
State	Disabled — The BGP peer group has been operationally disabled Down — The BGP peer group is operationally inactive Up — The BGP peer group is operationally active
Peer AS	The configured or inherited peer AS for the specified peer group
Local AS	The configured or inherited local AS for the specified peer group
Local Address	The configured or inherited local address for originating peering for the specified peer group
Loop Detect	The configured or inherited loop detect setting for the specified peer group
Connect Retry	The configured or inherited connect retry timer value
Authentication	n/a — No authentication is configured

Label	Description
	MD5 — MD5 authentication is configured
Local Pref	The configured or inherited local preference value
MED Out	The configured or inherited MED value assigned to advertised routes without a MED attribute
Min Route Advt.	The minimum amount of time that must pass between route updates for the same IP prefix
Min AS Originate	The minimum amount of time that must pass between updates for a route originated by the local router
Multihop	The maximum number of router hops a BGP connection can traverse
Multipath	The configured or inherited multipath value, determining the maximum number of ECMP routes BGP can advertise to the RTM
Prefix Limit	No Limit — No route limit assigned to the BGP peer group 1 to 4294967295 — The maximum number of routes BGP can learn from a peer
Passive	Disabled — BGP attempts to establish BGP connections with neighbors in the specified peer group Enabled — BGP does actively attempt to establish BGP connections with neighbors in the specified peer group
Next Hop Self	Disabled — BGP is not configured to send only its own IP address as the BGP nexthop in route updates to neighbors in the peer group Enabled — BGP sends only its own IP address as the BGP nexthop in route updates to neighbors in the specified peer group
Aggregator ID 0	Disabled — BGP is not configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates sent to the neighbor in the peer group Enabled — BGP is configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates sent to the neighbor in the peer group
Remove Private	Disabled — BGP will not remove all private AS numbers from the AS path attribute in updates sent to the neighbor in the peer group Enabled — BGP removes all private AS numbers from the AS path attribute in updates sent to the neighbor in the peer group
Damping	Disabled — The peer group is configured not to dampen route flaps Enabled — The peer group is configured to dampen route flaps
Export Policy	The configured export policies for the peer group
Import Policy	The configured import policies for the peer group
Hold Time	The configured hold time setting
Keep Alive	The configured keepalive setting

Label	Description
Cluster Id	n/a — No cluster ID has been configured
Client Reflect	Disabled — The BGP route reflector will not reflect routes to this neighbor Enabled — The BGP route reflector is configured to reflect routes to this neighbor
NLRI	The type of NLRI information that the specified peer group can accept Unicast — IPv4 unicast routing information can be carried
Preference	The configured route preference value for the peer group
Egress Engineering	Enabled — EPE is enabled for the peer group Disabled — EPE is disabled for the peer group
List of Peers	A list of BGP peers configured under the peer group
Total Peers	The total number of peers configured under the peer group
Established	The total number of peers that are in an established state

## group

### Syntax

**group** *aa-group-id* [:*partition-id*]

### Context

[\[Tree\]](#) (show>app-assure group)

### Full Context

show application-assurance group

### Description

Commands in this context display application-assurance group information.

### Parameters

#### *aa-group-id*

Specifies an AA ISA group ID.

**Values** 1

#### *partition-id*

Specifies a partition within a group.

**Values** 1 to 65535

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of application assurance group information.

### Output Example

```
*A:Dut-C# /show application-assurance group 1:1 aa-sub esm Subscriber1 summary
=====
Application-Assurance Subscriber Summary (realtime)
=====
AA-Subscriber           : Subscriber1 (esm)
ISA assigned            : esa-1/1
App-Profile             : dpi
App-Profile divert     : Yes
Capacity cost          : 1
Aarp Instance Id       : N/A
Sub-quarantined        : No
HTTP URL Parameters    : (Not Specified)
Last HTTP Notified Time : N/A
SAP                    : 6/1/5:1
MAC                    : c2:4d:ff:8a:b2:cc
Circuit Id : (Not Specified)
Remote Id  : (Not Specified)
Tethering Status      : not-detected (disabled)
Devices Detected      : N/A
Sub Congestion State  : Not Congested|RTT Limits Exceeded (Stage X)
```

## group

### Syntax

**group** *aa-group-id* **resources**

### Context

[\[Tree\]](#) (tools>dump>application-assurance group)

### Full Context

tools dump application-assurance group

### Description

This command dumps application-assurance information within a group.

### Parameters

#### *aa-group-id*

Specifies the AA group identifier.

**Values** *aa-group-id*: partition:aa-group-id[:partition-id]  
aa-group-id: 1 to 255

**resources**

Specifies the AA group resources.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of group resources information.

**Output Example**

```
*A:Dut-C# tools dump application-assurance group 1 resources
=====
Application-Assurance Group 1 Resource Usage and Limits
=====
Partitioned           : No
AA-Sub-Scale          : residential
Minimum-ISA-Generation : 1
-----
mda mda-type Status aa-sub  aa-sub  flow-records ip  transit-prefix-entries  capacity
quarantined          stats  current limit addresses ipv4 v4-rm ipv6 v6-rm cost
aa-sub
-----
5/1 isa2-aa up/active  9    162    0    20480  0    0  0  0  0  9    1
Mda Limit          1024 32768 n/a   n/a   16384  0  0  0  0  n/a
100
-----
Resource                                     Current          Limit
-----
Control Certificate Profiles                   : 0              20
Control DNS IP Cache                         : 0              128
Control DNS IP Cache Domain Entries          : 0             4096
Control DNS IP Cache Entries                 : 0            65536
Control Event Logs                           : 0              1
Control Event Log Entries                     : 0           100000
Control GTP Filter                           : 0              128
Control HTTP Enrichment                      : 0              128
Control HTTP Error Redirect                   : 0              1
Control HTTP Notification                     : 0              8
Control HTTP Redirect                         : 0              128
Control IP Prefix Lists                      : 0             1000
Control IP Prefix Lists Entries               : 0            24000
Control SCTP FILTER                          : 0              128
Control Session Filter                       : 0              300
Control Session Filter Entries                : 0             6000
Control URL Filter                           : 0              4
Control URL List                             : 0              3
Control URL List Entries (standard)           : 0             450
Control URL List Entries (extended)          : 0            2000
Control IP Port Lists                        : 0              100
Control IP Port Lists Entries                 : 0            3200
Control TCP Validate                         : 0              128
Control TCP Optimizer                        : 0              128
```



Control	Multi-path TCP Proxies	: 0	4
-----			
Policer	System Level Single Bucket BW Policers	: 0	128
Policer	System Level Flow Count Limit Policers	: 0	128
Policer	System Level Flow Rate Limit Policers	: 0	128
Policer	Subscriber Level Single Bucket BW Policers	: 0	5000
Policer	Subscriber Level Dual Bucket BW Policers	: 0	5000
Policer	Subscriber Level Flow Count Limit	: 0	5000
Policer	Subscriber Level Flow Rate Limit	: 0	5000
Policer	All Policer Types For Group	: 0	5000
Policer	Time-Of-Day Overrides For Group	: 0	384
-----			
Policy	Protocols	: 247	-
Policy	Custom Protocols	: 0	10
Policy	Custom Protocol Expressions	: 0	10
Policy	Charging Groups	: 0	32
Policy	Application Groups	: 1	32
Policy	Applications	: 1	500
Policy	Application Filters	: 0	2500
Policy	Application Filter Expressions	: 0	2500
Policy	Application Service Options Characteristics	: 0	32
Policy	Application Service Options Values	: 0	256
Policy	Application Profiles	: 0	100
Policy	Application QoS Policies	: 0	1000
Policy	AQP ASO Matches	: 0	2000
Policy	AQP Subscriber Matches	: 0	100
Policy	Subscriber HTTP URL Parameters	: 0	-
-----			
Statistics	Subscriber Statistics	: 0	512
Statistics	Subscriber Statistics Exported by RADIUS	: 0	64
Statistics	Special Study Protocol Subscribers	: 0	100
Statistics	Special Study Application Subscribers	: 0	100
-----			

## group

### Syntax

**group** *aa-group-id* [: *partition-id*]

### Context

[\[Tree\]](#) (tools>dump>application-assurance group)

### Full Context

tools dump application-assurance group

### Description

This command dumps application-assurance information within a group/partition.

## Parameters

### *aa-group-id*

Specifies the AA group identifier.

Values		
aa-group-id:	partion:aa-group-id[:partition-id]	
	aa-group-id	1 to 255
	partition-id	1 to 65535

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## group

## Syntax

**group** *aa-group-id* **load-balance** [**service** *service-id*]

## Context

[\[Tree\]](#) (tools>perform>app-assure group)

## Full Context

tools perform application-assurance group

## Description

This command performs application assurance group operations.

## Parameters

### *aa-group-id*

Specifies the application assurance group ID.

**Values** 1 to 255

### **load-balance**

Load balances subscribers within the group.

### **service** *service-id*

Load balances the specified service.

**Values** 1 to 2148278381, svc-name (up to 64 char max.)

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## group

### Syntax

**group** [*grp-ipv6-address*] [**hosts** | **interfaces** | **saps**]

**group summary** [**hosts** | **interfaces** | **saps**]

### Context

[\[Tree\]](#) (show>router>mld group)

### Full Context

show router mld group

### Description

This command displays the multicast group and (S,G) addresses. If no *grp-ipv6-address* parameters are specified, then all MLD group, (\*,G) and (S,G) addresses are displayed.

### Parameters

#### **grp-ipv6-address**

Displays specific multicast group addresses.

#### **hosts**

Displays hosts for the multicast group address.

#### **interfaces**

Displays interfaces for the multicast group address.

#### **saps**

Displays SAPs for the multicast group address.

### Platforms

All

### Output

The following output is an example of MLD group information. [Table 168: MLD Group Information Output Fields](#) describes the output fields for MLD group information.

#### Output Example

```
*A:Dut-A# show router mld group
=====
MLD Interface Groups
=====
(*,ff04:db8:224:100:0:0)                               UpTime: 0d
00:10:09
    Fwd List : intf_to_ixia
(*,ff04:db8:224:100:0:1)                               UpTime: 0d
00:10:09
    Fwd List : intf_to_ixia
(*,ff04:db8:224:100:0:2)                               UpTime: 0d
```

```

00:10:09
    Fwd List : intf_to_ixia
    (*,ff04:db8:224:100:0:3)                               UpTime: 0d
00:10:09
    Fwd List : intf_to_ixia
    (*,ff04:db8:224:100:0:4)                               UpTime: 0d
00:10:09
    Fwd List : intf_to_ixia
-----
Entries : 5
=====
MLD Host Groups
=====
No Matching Entries
=====
MLD SAP Groups
=====
No Matching Entries
=====
*A:Dut-A#

*A:Dut-A# show router mld group summary
=====
MLD Interface Groups Summary                               Nbr Fwd   Nbr Blk
=====
(*,ff04:db8:224:100:0:0) 1           0
(*,ff04:db8:224:100:0:1) 1           0
(*,ff04:db8:224:100:0:2) 1           0
(*,ff04:db8:224:100:0:3) 1           0
(*,ff04:db8:224:100:0:4) 1           0
-----
Entries : 5
=====
MLD Host Groups Summary                               Nbr Fwd   Nbr Blk
=====
No Matching Entries
=====
MLD SAP Groups Summary                               Nbr Fwd   Nbr Blk
=====
No Matching Entries
=====
*A:Dut-A#

*A:Dut-A# show router mld group ff04:db8:224:100:0:0
=====
MLD Interface Groups
=====
(*,ff04:db8:224:100:0:0)                               UpTime: 0d
00:10:24
    Fwd List : intf_to_ixia
-----
Entries : 1
=====
MLD Host Groups
=====
No Matching Entries
=====
MLD SAP Groups
=====
No Matching Entries
=====
*A:Dut-A#
    
```

Table 168: MLD Group Information Output Fields

Label	Description
MLD Groups	The IP multicast sources corresponding to the IPv6 multicast groups.
Fwd List	The list of interfaces in the forward list.
Blk List	The list of interfaces in the blocked list.

## group

### Syntax

**group** [*group-name*] [**detail**]

### Context

[\[Tree\]](#) (show>router>msdp group)

### Full Context

show router msdp group

### Description

This command displays information about MSDP groups.

### Parameters

*group-name*

Displays information about the specified group name, up to 32 characters. If no *group-name* is specified, information about all group names display.

**detail**

Keyword to displays detailed MSDP group information.

### Platforms

All

### Output

The following output is an example of MSDP group information, and [Table 169: Output fields: MSDP group](#) describes the output fields.

### Output Example

```
*A:ALA-48>show>router>msdp# group
=====
MSDP Groups
=====
Group Name                Mode      Act Srcs  Local Address
```

```

-----
main                Mesh-group None None
loop1               Mesh-group None None
loop2               Mesh-group None None
loop3               Mesh-group None None
loop4               Mesh-group None None
loop5               Mesh-group None None
-----
Groups : 6
=====
*A:ALA-48>show>router>msdp#

*A:ALA-48>show>router>msdp# group test
=====
MSDP Groups
=====
Group Name          Mode        Act Srcs  Local Address
-----
test                Mesh-group 50000     10.10.10.103
-----
Groups : 1
=====
*A:ALA-48>show>router>msdp#

*A:ALA-48>show>router>msdp# group test detail
=====
MSDP Groups
=====
Group Name          : test
-----
Local Address       : 10.10.10.103
Admin State         : Up           Receive Msg Rate   : None
Receive Msg Time    : None         Receive Msg Thd    : None
Mode                : Mesh-group   SA Limit           : 50000
Export Policy       : None Specified / Inherited
Import Policy       : None Specified / Inherited
-----
Groups : 1
=====
*A:ALA-48>show>router>msdp#
    
```

Table 169: Output fields: MSDP group

Label	Description
Group Name	The MSDP group name
Mode	The groups of peers in a full mesh topology to limit excessive flooding of SA messages to neighboring peers
Act Srcs	The configured maximum number of active source messages that will be accepted by MSDP
Local Address	The local end of a MSDP session
Admin State	The administrative state of the MSDP group

Label	Description
Receive Msg Rate	The rate that the messages are read from the TCP session
Receive Msg Time	The time of MSDP messages that are read from the TCP session within the configured number of seconds
Receive Msg Thd	The time interval, in seconds, that MSDP messages are read from the TCP session for rate limiting
Mode	The MSDP group mode
SA Limit	The source-active limit
Export Policy	The export policy specified for the group
Import Policy	The import policy specified for the group

## group

### Syntax

```
group grp-ip-address [source ip-address [type {starstarrp | starg | sg}] [detail] [family]
group grp-ip-address [source ip-address [type {starstarrp | starg | sg}] [detail] [family] rpfv
```

### Context

[\[Tree\]](#) (show>router>pim group)

### Full Context

```
show router pim group
```

### Description

This command displays PIM source group database information.

### Parameters

#### **grp-ip-address**

Specifies the IP multicast group address for which this entry contains information.

#### **source ip-address**

Specifies the source address for which this entry contains information.

#### **type starstarrp**

Specifies that only (\*, \*, rp) entries are displayed.

#### **type starg**

Specifies that only (\*,G) entries are displayed.

#### **type sg**

Specifies that only (S,G) entries are displayed.

**detail**

Displays detailed group information.

**family**

Displays family information.

**Values** ipv4, ipv6

**rpfv**

Displays proxy RPF vectors that are used for inter-AS Rosen MVPN.

**Platforms**

All

**Output**

The following output is an example of PIM group information. [Table 170: PIM Group Fields](#) provides PIM group field descriptions.

**Output Example**

```
A:Dut-A# show router pim group
=====
PIM Group ipv4
=====
Group Address          Type          Spt Bit Inc Intf          no.0ifs
Source Address         RP           State      Inc Intf(S)
-----
239.1.1.1              (S,G)                ip-10.10.2.1      1
10.1.1.2               10.20.1.4         ip-10.10.1*
=====
A:Dut-A#

*A:Dut-C# show router 100 pim group ipv6
=====
Legend:  A = Active  S = Standby
=====
PIM Groups ipv6
=====
Group Address          Type          Spt Bit Inc Intf          No.0ifs
Source Address         RP           State      Inc Intf(S)
-----
ff04:db8:224:100:0:0  (*,G)                vprn_itf_C_11*  2
*                       2001:db8:110:100:1*
ff04:db8:224:100:0:0  (S,G)                spt             mpls-if-74457*  3
2001:db8:100:114:1:2  2001:db8:110:100:1*
ff04:db8:224:100:0:1  (*,G)                vprn_itf_C_11*  2
*                       2001:db8:110:100:1*
ff04:db8:224:100:0:1  (S,G)                spt             mpls-if-74457*  3
2001:db8:100:114:1:2  2001:db8:110:100:1*
ff04:db8:224:100:0:2  (*,G)                vprn_itf_C_11*  2
*                       2001:db8:110:100:1*
ff04:db8:224:100:0:2  (S,G)                spt             mpls-if-74457*  3
2001:db8:100:114:1:2  2001:db8:110:100:1*
ff04:db8:224:100:0:3  (*,G)                vprn_itf_C_11*  2
*                       2001:db8:110:100:1*
ff04:db8:224:100:0:3  (S,G)                spt             mpls-if-74457*  3
2001:db8:100:114:1:2  2001:db8:110:100:1*
ff04:db8:224:100:0:4  (*,G)                vprn_itf_C_11*  2
*                       2001:db8:110:100:1*
```



```

ff04:db8:224:100:0:4          (S,G)          spt          mpls-if-74457* 3
2001:db8:100:114:1:2        2001:db8:110:100:1*
-----
Groups : 10
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-C#

A:NYC>show>router>pim# group 239.255.255.250
=====
PIM Groups
=====
Group Address   Source Address  RP Address      Type           Spt Incoming   Num
                :               :                :               Bit Intf       Oifs
-----
239.255.255.250 *           10.22.187.240  <*,G>          nyc-sjc        1
-----
Groups : 1
=====
A:NYC>show>router>pim#

A:NYC>show>router>pim# group 239.255.255.250 detail
=====
PIM Source Group
=====
Group Address      : 239.255.255.250 Source Address      : 10.1.1.2
RP Address         : 10.100.100.1   Type               : (S,G)
Flags              : spt, rpt-prn-des  Keepalive Timer Exp: 0d 00:03:07
MRIB Next Hop     : 10.1.1.2        MRIB Src Flags     : direct
Up Time           : 0d 00:00:50     Resolved By        : rtable-u

Up JP State       : Joined           Up JP Expiry       : 0d 00:00:00
Up JP Rpt        : Pruned          Up JP Rpt Override : 0d 00:00:00

Register State    : Pruned           Register Stop Exp  : 0d 00:00:47
Reg From Anycast RP: No

RPF Neighbor      : 10.1.1.2
Incoming Intf     : SOURCE-3
Outgoing Intf List : To-Dut-A

Curr Fwding Rate  : 482.9 kbps
Forwarded Packets : 1262             Discarded Packets  : 0
Forwarded Octets  : 1269572         RPF Mismatches     : 0
Spt threshold     : 0 kbps
=====
A:NYC>show>router>pim#

B:Dut-C# show router pim group 239.0.0.1 type sg detail
=====
PIM Source Group ipv4
=====
Group Address      : 239.0.0.1
Source Address     : 10.11.0.1
RP Address         : 10.20.1.3
Flags              : rpt-prn-des      Type               : (S,G)
MRIB Next Hop     : 10.11.0.1
MRIB Src Flags     : direct           Keepalive Timer    : Not Running
Up Time           : 0d 00:04:17     Resolved By        : rtable-u

Up JP State       : Joined           Up JP Expiry       : 0d 00:00:00
Up JP Rpt        : Pruned          Up JP Rpt Override : 0d 00:00:00

Register State    : No Info
    
```

```

Reg From Anycast RP: No

Rpf Neighbor      : 10.11.0.1
Incoming Intf    : svc_itf
Outgoing Host List : 239.112.1.1

Curr Fwding Rate  : 0.0 kbps
Forwarded Packets : 0
Forwarded Octets  : 0
Spt threshold     : 0 kbps
Admin bandwidth   : 1 kbps
Discarded Packets : 0
RPF Mismatches    : 0
ECMP opt threshold : 7
Preference        : 0

=====
PIM Source Group ipv4
=====
Group Address      : 239.0.0.1
Source Address     : 10.11.0.2
RP Address         : 10.20.1.3
Flags              :
Type               : (S,G)
MRIB Next Hop     : 10.11.0.2
MRIB Src Flags     : direct
Up Time           : 0d 00:04:18
Keepalive Timer    : Not Running
Resolved By       : rtable-u

Up JP State        : Joined
Up JP Rpt          : Not Pruned
Up JP Expiry       : 0d 00:00:00
Up JP Rpt Override : 0d 00:00:00

Register State     : No Info
Reg From Anycast RP: No

Rpf Neighbor      : 10.11.0.2
Incoming Intf     : svc_itf
Outgoing Host List : 10.112.1.1, 10.112.1.2

Curr Fwding Rate  : 0.0 kbps
Forwarded Packets : 0
Forwarded Octets  : 0
Spt threshold     : 0 kbps
Admin bandwidth   : 1 kbps
Discarded Packets : 0
RPF Mismatches    : 0
ECMP opt threshold : 7
Preference        : 0
-----
Groups : 2
=====
*B:Dut-C#

A:Dut-A# show router pim group detail
=====
PIM Source Group ipv4
=====
Group Address      : 239.1.1.1
Source Address     : 10.1.1.21
RP Address         : 10.20.1.4
Advt Router        : 10.20.1.3
Flags              :
Type               : (S,G)
MRIB Next Hop     : 10.10.2.3
MRIB Src Flags     : remote
Standby Src Flags  : remote
keepalive Timer    : Not Running
Up Time           : 0d 00:01:22
Resolved By       : rtable-u

Up JP State        : Joined
Up JP Rpt          : Pruned
Up JP Expiry       : 0d 00:00:00
Up JP Rpt Override : 0d 00:00:00
Up Stdbyp JP State : Joined
Up Stdbyp JP Expiry : 0d 00:00:12

Register State     : No Info
Reg From Anycast RP: No
  
```

```

Rpf Neighbor      : 10.10.2.3          Stdby Rpf Neighbor : 10.10.1.2
Incoming Intf    : ip-10.10.2.1      Stdby Intf         : ip-10.10.1.1
Outgoing Host List : ix

Curr Fwding Rate : 0.0 kbps
Forwarded Packets : 0                Discarded Packets : 0
Forwarded Octets  : 0                RPF Mismatches    : 0
Spt threshold     : 0 kbps           ECMP opt threshold : 7
Admin bandwidth   : 1 kbps
=====
PIM Source Group ipv4
    
```

Table 170: PIM Group Fields

Label	Description
Group Address	The IP multicast group address for which this entry contains information
Source Address	The source address of the multicast sender. The value is 0 if the type is configured as <b>starg</b> . The address of the Rendezvous Point (RP) display when the type is configured as <b>starRP</b> .
RP Address	The RP address
Type	The type of entry, (*,*, rp)/(*,G) or (S,G).
Spt Bit	Specifies whether to forward on (*,*, rp)/(*,G) or on (S,G) state. It is updated when the (S,G) data comes on the RPF interface towards the source.
Incoming Intf	The interface on which the traffic comes in. It can be the RPF interface to the RP (if <b>starg</b> ) or the source (if <b>sg</b> ).
Num Oifs	The number of interfaces in the inherited outgoing interface list. An inherited list inherits the state from other types.
Flags	The different lists to which this interface belongs
Keepalive Timer Exp	The keepalive timer expiration which is applicable only for (S,G) entries. The (S,G) keepalive timer is updated by data being forwarded using this (S,G) Forwarding state. It is used to keep (S,G) state alive in the absence of explicit (S,G) joins.
MRIB Next Hop	The next hop address towards the RP
MRIB Src Flags	MRIB information about the source. If the entry is of type starg or starstarrp, it will contain information about the RP for the group.
Up Time	The time since this source group entry was created.
Resolved By	The route table used for RPF check.

Label	Description
Up JP State	The upstream join prune state for this entry on the interface. PIM join prune messages are sent by the downstream routers towards the RPF neighbor.
Up JP Expiry	The minimum amount of time remaining before this entry will be aged out.
Up JP Rpt	The join prune Rpt state for this entry on the interface. PIM join/prune messages are sent by the downstream routers towards the RPF neighbor. (S,G, rpt) state is a result of receiving (S,G, rpt) JP message from the downstream router on the RP tree.
Up JP Rpt Override	The value used to delay triggered Join (S,G, rpt) messages to prevent implosions of triggered messages.  If this has a non-zero value, it means that the router was in 'not Pruned' state and it saw a prune (S,G, rpt) message being sent to RPF (S,G, rpt). If the router sees a join (S,G, rpt) override message being sent by some other router on the LAN while the timer is still non-zero, it simply cancels the override timer. If it does not see a join (S,G, rpt) message, then on expiry of the override timer, it sends its own join (S,G, rpt) message to RPF (S,G, rpt). A similar scenario exists when RPF (S,G, rpt) changes to become equal to RPF (*,G).
Register State	The register state. The register state is kept at the source DR. When the host starts sending multicast packets and if there are no entries programmed for that group, the source DR sends a register packet to the RP (g). Register state transition happen based on the register stop timer and the response received from the RP.
Register Stop Exp	The time remaining before the register state might transition to a different state
Register from Anycast RP	The status of the register packet for that group received from one of the RP from the anycast-RP set
RPF Neighbor	The address of the RPF neighbor
Outgoing Intf List	A list of interfaces on which data is forwarded.
Curr Fwding Rate	The current forwarding rate of the multicast data for this group and source. This forwarding rate is calculated before ingress QoS policing or shaping is applied.
Forwarded Packets	The number of multicast packets that were forwarded to the interfaces in the outgoing interface list. This packet count is before ingress QoS policing or shaping is applied.
Discarded Packets	The number of multicast packets that matched this source group entry but were discarded.

Label	Description
	For (S,G) entries, if the traffic is getting forwarded on the SPT, the packets arriving from the RPT will be discarded.
Forwarded Octets	The number of octets forwarded
RPF Mismatches	The number of multicast packets that matched this source group entry but they did not arrive on the interface.
Spt threshold	The value of the SPT threshold configured for that group. 0 kb/s means that the switch to the SP tree occurs immediately.

## group

### Syntax

**group** *aa-group-id* [: *partition-id*]

### Context

[\[Tree\]](#) (clear>application-assurance group)

### Full Context

clear application-assurance group

### Description

This command clears application assurance group data.

### Parameters

#### *aa-group-id*

Specifies a group of ISA MDAs.

**Values** 1 to 255

#### *partition-id*

Specifies a partition within a group.

**Values** 1 to 65535

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## group

### Syntax

**group** [*group-name*] [**detail**]

## Context

[\[Tree\]](#) (show>router>rip group)

## Full Context

show router rip group

## Description

This command displays RIP group information.

## Parameters

### **group-name**

Displays RIP group information for the specified group.

### **detail**

Displays detailed RIP group information.

## Platforms

All

## Output

[Table 171: RIP Group Fields](#) describes the standard command output fields for a RIP group.

*Table 171: RIP Group Fields*

Label	Description
Group	The RIP group name.
Adm	Down — The RIP group is administratively down. Up — The RIP group is administratively up.
Opr	Down — The RIP group is operationally down. Up — The RIP group is operationally up.
Send Mode	Bcast — Specifies that RIPv2 formatted messages are sent to the broadcast address. Mcast — Specifies that RIPv2 formatted messages are sent to the multicast address. None — Specifies that no RIP messages are sent (silent listener). RIPv1 — Specifies that RIPv1 formatted messages are sent to the broadcast address.asp
Recv Mode	Both — Specifies that RIP updates in either version 1 or version 2 format will be accepted. None — Specifies that RIP updates will not be accepted.

Label	Description
	RIPv1 — Specifies that RIP updates in version 1 format only will be accepted.  RIPv2 — Specifies that RIP updates in version 2 format only will be accepted.
Metric In	The metric value added to routes received from a RIP neighbor.

The following output is an example of RIP group information.

**Output Example: Standard RIP Group**

```
A:ALA-A# show router rip group
=====
RIP Groups
=====
Group                Adm    Opr    Send   Recv   Metric
                   Mode   Mode   Mode   Mode   In
-----
rip-group            Up     Down   BCast  Both   1
=====
A:ALA-A#
```

**Output Example: detail**

```
A:ALA-A# show router rip group detail
=====
RIP groups (Detail)
=====
-----
Group "rip-group"
-----
Description      : No Description Available
Admin State      : Up
Oper State       : Down
Send Mode        : Broadcast
Receive Mode     : Both
Metric In       : 1
Metric Out      : 1
Split Horizon    : Enabled
Check Zero       : Disabled
Message Size     : 25
Preference       : 100
Auth. Type       : None
Update Timer     : 30
Timeout Timer    : 180
Flush Timer      : 120
Export Policies:
  None
Import Policies:
  None
=====
A:ALA-A#
```

**group**

**Syntax**

**group** [*group-name*] [**detail**]

**Context**

[\[Tree\]](#) (show>router>ripng group)

## Full Context

```
show router ripng group
```

## Description

This command displays RIPng group information.

## Parameters

### *group-name*

Displays RIPng group information for the specified group.

### *detail*

Displays detailed RIPng group information.

## Platforms

All

## Output

The following output is an example of RIPng group information.

### Output Example

```
*A:Dut-C>config>router>if# show router ripng group "A"
=====
RIP-NG Groups
=====
Group                Adm      Opr      Send      Recv      Metric
                    Mode     Mode     Mode      Mode      In
-----
A                    Up       Up       RipNg     RipNg     1
-----
Groups : 1
=====
*A:Dut-C>config>router>if# show router ripng group "A" detail
=====
RIP-NG groups (Detail)
=====
-----
Group "A"
-----
Description      : No Description Available
Admin State      : Up
Send Mode        : RipNg
Metric In        : 1
Split Horizon    : Enabled
Message Size     : 25
Timeout Timer    : 5
BFD              : Enabled
Export Policies  :
  directToRipng
Import Policies  :
  None
-----
```



## group

### Syntax

```
group grp-ip-address [source ip-address] [interval interval] [repeat repeat] [absolute | rate]
```

### Context

[\[Tree\]](#) (monitor>router>pim group)

### Full Context

monitor router pim group

### Description

This command monitors statistics for a PIM source group.

### Parameters

#### *grp-ip-address*

Specifies the IP address of an multicast group that identifies a set of recipients that are interested in a particular data stream.

#### *ip-address*

Specifies the source IP address to use in the ping requests in dotted decimal notation.

**Values** 0.0.0.0 to 255.255.255.255

**Default** the IP address of the egress IP interface

#### *interval*

Configures the interval for each display, in seconds.

**Values** 10, 20, 30, 40, 50, 60

**Default** 10

#### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

#### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

#### **rate**

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## 10.9 group-encryption

### group-encryption

#### Syntax

**group-encryption**

#### Context

[\[Tree\]](#) (show group-encryption)

#### Full Context

show group-encryption

#### Description

Commands in this context display group encryption information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### group-encryption

#### Syntax

**group-encryption**

#### Context

[\[Tree\]](#) (clear group-encryption)

#### Full Context

clear group-encryption

#### Description

Commands in this context clear group encryption parameters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 10.10 group-interface

### group-interface

#### Syntax

**group-interface** [**fwd-service** *service-id*] [*ip-int-name*] [**detail**] [**group**] [*grp-address*]

#### Context

[\[Tree\]](#) (show>router>igmp group-interface)

#### Full Context

show router igmp group-interface

#### Description

This command displays IGMP group-interface information.

#### Parameters

##### **service-id**

Specifies the service ID.

**Values** service-id: 1 to 2148278386  
svc-name: up to 64 characters.

##### **ip-int-name**

Specifies an IP interface name, up to 32 characters.

##### **detail**

Displays detailed information.

##### **group**

Displays information for the group IP address.

##### **grp-address**

Displays information for the group IP address in the multicast group address format or zero.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### group-interface

#### Syntax

**group-interface** [**fwd-service** *service-id*] [*ip-int-name*] [**detail**] [**group**] [*grp-ipv6-address*]

## Context

[\[Tree\]](#) (show>router>mld group-interface)

## Full Context

show router mld group-interface

## Description

This command displays MLD group-interface information.

## Parameters

### *service-id*

Specifies the service ID.

**Values** service-id: 1 to 2148278386  
svc-name: up to 64 characters.

### *ip-int-name*

IP interface name, up to 32 characters.

### *detail*

Displays detailed information.

### *group*

Displays information from the group IPv6 address.

### *grp-ipv6-address*

Group IPv6 address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## group-interface

## Syntax

**group-interface** [**fwd-service** *service-id*] [*ip-int-name*]

## Context

[\[Tree\]](#) (show>router>mld>statistics group-interface)

## Full Context

show router mld statistics group-interface

## Description

This command displays MLD group interface statistics information.

## Parameters

### *service-name*

Displays information associated with the specified service name.

### *ip-int-name*

Displays information associated with the specified IP interface name.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## group-interface

## Syntax

```
group-interface [fwd-service service-id] [ip-int-name]
```

## Context

[\[Tree\]](#) (show>router>igmp>statistics group-interface)

## Full Context

```
show router igmp statistics group-interface
```

## Description

This command displays IGMP statistics for group interfaces.

## Parameters

### *service-id*

Specifies the service ID.

**Values**    *service-id*: 1 to 2148278386  
              *svc-name*: Up to 64 characters

### *ip-int-name*

Specifies the IP interface name, up to 32 characters.

## Platforms

All

## 10.11 groups

### groups

#### Syntax

**groups** [**group** *group-ip-address*]  
**groups** [**group** *group-ip-address*] **detail**  
**groups** [**group** *group-ip-address*] **summary**

#### Context

[\[Tree\]](#) (show>service>active-subscribers>host-tracking groups)

#### Full Context

show service active-subscribers host-tracking groups

#### Description

This command displays active subscriber host tracking groups information.

#### Parameters

##### **group-ip-address**

Displays information about the group address of the active subscriber group.

**Values**    ipv4address: a.b.c.d  
              ipv6address: FFx4::/16 up to FFxE::/16  
              x [0..F]H

##### **detail**

Displays detailed information about the group address of the active subscriber group.

##### **summary**

Displays summarized group information for active subscribers.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 10.12 grpc

```
grpc
```

### Syntax

```
grpc  
grpc connection  
grpc rpc [rpc-id]
```

### Context

[\[Tree\]](#) (show>system grpc)

### Full Context

```
show system grpc
```

### Description

This command displays gRPC server information.

### Parameters

#### *connection*

This command displays information for gRPC connections.

#### *rpc-id*

Specifies an rpc ID.

**Values** 0 to 4294967295

### Platforms

All

### Output

The following output is an example of system gRPC information.

[Table 172: Show System gRPC Output Fields](#) describes system gRPC output fields.

### Output Example

```
A:admin@Dut-A# show system grpc  
=====  
gRPC Server  
=====  
Administrative State      : Enabled  
Operational State        : Up  
Supported services  
-----  
gNMI Version              : 0.4.0  
=====
```

```

A:admin@Dut-A# show system grpc connection
=====
gRPC Server connections
=====
Address           : 192.99.5.0
Port              : 49648
Establishment Time : 2018/02/20 09:51:48
Active RPC Count  : 0
Total RPC Count   : 1
Rx Bytes          : 2954
Tx Bytes          : 3908
-----
No. of connections : 1
=====

A:node-6>show>system# grpc rpc
=====
gRPC Server RPCs
=====
No. of RPCs      : 0
=====
    
```

Table 172: Show System gRPC Output Fields

Label	Description
gRPC Server	Specifies the gRPC server name.
Administrative State	Specifies the administrative state (Enabled, Disabled).
Operational State	Specifies the operational state (Up, Down, Transition).
Supported services	Specifies the supported services.
gNMI Version	Specifies the gNMI version.
Address	Specifies the IP address.
Port	Specifies the port number.
Establishment Time	Specifies the establishment time.
Active RPC Count	Specifies the active RPC count.
Total RPC Count	Specifies the total RPC count.
Rx Bytes	Specifies the number of received bytes.
Tx Bytes	Specifies the number of transmitted bytes.
No. of connections	Specifies the number of gRPC connections.



Label	Description
No. of RPCs	Specifies the number of RPCs.

## grpc

### Syntax

grpc

### Context

[\[Tree\]](#) (show>system>telemetry grpc)

### Full Context

show system telemetry grpc

### Description

Commands in this context display gRPC telemetry subscriptions.

### Platforms

All

## 10.13 grpc-tunnel

## grpc-tunnel

### Syntax

grpc-tunnel

### Context

[\[Tree\]](#) (show>system grpc-tunnel)

### Full Context

show system grpc-tunnel

### Description

Commands in this context display gRPC tunnel information.

### Platforms

All

## 10.14 grt-lookup

### grt-lookup

#### Syntax

grt-lookup

#### Context

[\[Tree\]](#) (clear>router grt-lookup)

#### Full Context

clear router grt-lookup

#### Description

This command re-evaluates route policies for GRT.

#### Platforms

All

## 10.15 gsmp

### gsmp

#### Syntax

gsmp

#### Context

[\[Tree\]](#) (show>service>id gsmp)

#### Full Context

show service id gsmp

#### Description

Commands in this context display GSMP information.

#### Platforms

All

## gsmp

### Syntax

gsmp

### Context

[\[Tree\]](#) (clear>service>id gsmp)

### Full Context

clear service id gsmp

### Description

Commands in this context clear GSMP statistics.

### Platforms

All

## 10.16 gtm

## gtm

### Syntax

gtm

### Context

[\[Tree\]](#) (show>router gtm)

### Full Context

show router gtm

### Description

This command multicast GTM related information.

### Platforms

All

### Output

The following output is an example of router GTM information.

## Output Example

```
*A:Dut-A# show router gtm
=====
GTM (MVPN Base) configuration data
=====
signaling          : Bgp          auto-discovery    : Default
UMH Selection      : Highest-IP   SA withdrawn      : Disabled
intersite-shared   : Enabled       Persist SA        : Disabled
vrf-import         : N/A
vrf-export         : N/A
vrf-target         : unicast
C-Mcast Import RT : target:10.20.1.2:0

ipmsi              : rsvp IpmsiTpl
i-pmsi P2MP AdmSt  : Up
i-pmsi Tunnel Name : IpmsiTpl-gtm-73780
enable-bfd-root    : false        enable-bfd-leaf   : false
Mdt-type           : sender-receiver

BSR signalling     : none
Wildcard s-pmsi   : Disabled
Multistream-SPMSI : Disabled
s-pmsi            : none
data-delay-interval : 3 seconds
enable-asm-mdt    : N/A
=====
```

## 10.17 gtp

### gtp

#### Syntax

gtp

#### Context

[\[Tree\]](#) (show>router gtp)

#### Full Context

show router gtp

#### Description

This command displays operational information related to GTP usage in the specified routing context.

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**gtp**

### Syntax

**gtp**

### Context

[\[Tree\]](#) (show>subscr-mgmt gtp)

### Full Context

show subscriber-mgmt gtp

### Description

This command displays router operational GTP information.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**gtp**

### Syntax

**gtp**

### Context

[\[Tree\]](#) (clear>router gtp)

### Full Context

clear router gtp

### Description

Commands in this context clear GTP information in this routing context.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**gtp**

### Syntax

**gtp session all**

**gtp session apn *apn***

**gtp session apn *apn* imsi *imsi***

**gtp session imsi** *imsi*  
**gtp statistics**

### Context

[\[Tree\]](#) (clear>subscr-mgmt gtp)

### Full Context

clear subscriber-mgmt gtp

### Description

This command clears all GTP sessions matching the specified criteria. Associated objects, such as the ESM subscriber in a GTP uplink scenario are also removed.

### Parameters

#### **session**

Specifies to remove GTP sessions.

#### **all**

Specifies to remove all GTP sessions in the system.

#### **statistics**

Specifies to clear GTP statistics.

#### **apn**

Specifies the APN identifying the session, up to 100 characters.

#### **imsi**

Specifies the IMSI identifying the session, in the format of a string of digits between 9 and 15.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**gtp**

### Syntax

**gtp**

**gtp gtp-filter** *gtp-filter-name*

### Context

[\[Tree\]](#) (show>app-assure>group gtp)

### Full Context

show application-assurance group gtp

## Description

This command displays GTP (General packet radio service (GPRS) Tunneling Protocol) information.

## Parameters

### *gtp-filter-name*

Specifies a GTP filter name, up to 32 characters. When a filter is specified, all traffic is examined as described in the tmnxBsxGtpFltrTable.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **gtp gtp-filter** command.

### Output Example

```
show application-assurance group 1:0 gtp gtp-filter "bob"
=====
Application Assurance Group 1:0 GTP Filter "bob"
=====
Description                : (Not Specified)
Maximum payload length     : (Not Specified)
Default action              : permit
Default gtp v2 action      : deny
Default imsi-apn action    : deny
GTP in GTP action          : deny
Validate GTP tunnels       : enabled
Validate sequence number   : enabled
Validate source IP address : enabled
Configured messages        : 2
Configured gtp v2 messages : 3
Configured imsi apn filters : 3

Packets arrived             : 1070
Packets denied
  Payload length           : 0
  Message type             : 0
  GTP-v2 Message type     : 100
  Mandatory header         : 0
  Extension header         : 0
  Information element      : 0
  Invalid TEID             : 25
  IMSI-APN                 : 200
  Invalid Sequence Number  : 300
  Invalid Source IP add*   : 120
  Missing Mandatory IEs    : 0
  GTP in GTP               : 325
  No tunnel resource       : 0
  Tunnel endpoint limit    : 0
Packets permitted          : 0
=====
```

## gtp

### Syntax

gtp

### Context

[\[Tree\]](#) (clear>app-assure>group gtp)

### Full Context

clear application-assurance group gtp

### Description

This command clears the application-assurance GTP.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 10.18 gtp-statistics

## gtp-statistics

### Syntax

gtp-statistics

### Context

[\[Tree\]](#) (show>subscr-mgmt>wlan-gw gtp-statistics)

### Full Context

show subscriber-mgmt wlan-gw gtp-statistics

### Description

This command displays GTP statistics.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of WLAN-GW GTP statistics.



## Output Example

```
*A:Dut-C# show subscriber-mgmt wlan-gw gtp-statistics
=====
GTP statistics
=====
tx echo requests                : 33
tx echo responses                : 0
tx errors                       : 0
rx echo requests                : 0
rx echo responses                : 33
rx errors                       : 0
rx version not supported        : 0
rx zero TEID responses          : 0
path faults                     : 0
path restarts                  : 0
tx invalid msgs                 : 0
tx create PDP context requests  : 4
tx create PDP context responses : 0
tx delete PDP context requests  : 0
tx delete PDP context responses : 0
tx create session requests      : 0
tx create session responses     : 0
tx delete session requests      : 0
tx delete session responses     : 0
tx delete bearer requests       : 0
tx delete bearer responses      : 0
tx create bearer responses      : 0
tx update bearer responses      : 0
tx modify bearer requests       : 0
tx modify bearer responses      : 0
tx error indication count       : 0
rx invalid msgs                 : 0
rx create PDP context requests  : 0
rx create PDP context responses : 4
rx delete PDP context requests  : 0
rx delete PDP context responses : 0
rx create session requests      : 0
rx create session responses     : 0
rx delete session requests      : 0
rx delete session responses     : 0
rx delete bearer requests       : 0
rx delete bearer responses      : 0
rx create bearer requests       : 0
rx update bearer requests       : 0
rx modify bearer requests       : 0
rx modify bearer responses      : 0
rx error indication count       : 0
rx invalid pkt length           : 0
rx unknown pkts                 : 0
rx missing IE pkts              : 0
rx bad IP header pkts           : 0
rx bad UDP header pkts          : 0
rx discarded pkts               : 0
rx in-session discarded pkts    : 0
rx pkts                         : 37
tx discarded pkts               : 0
tx pkts                         : 37
=====
*A:Dut-C#
```

# 11 h Commands

## 11.1 handler

```
handler
```

### Syntax

```
handler [handler-name]
```

```
handler detail
```

### Context

[\[Tree\]](#) (show>log>event-handling handler)

### Full Context

```
show log event-handling handler
```

### Description

Commands in this context display EHS handler information.

### Parameters

***handler-name***

Specifies the name of a specific handler up to 32 characters in length.

**detail**

Keyword to list details of all handlers.

### Platforms

All

### Output

The following output is an example of handler information.

[Table 173: Handler Output Field Descriptions](#) describes handler output fields.

### Output Example

```
A:node1>show>log>event-handling# handler
=====
Event Handling System - Handler List
=====
Handler          Admin  Oper   Description
Name            State  State
-----
-----
```

```

h-sample          up      up
h-main           up      up
h-backup         down    down
=====
*A:7950 XRS-20# show log event-handling handler "h-sample"
=====
Event Handling System - Handlers
=====
Handler          : h-sample
=====
Description      : (Not Specified)
Admin State      : up              Oper State : up
-----
Handler Action-List Entry
-----
Entry-id         : 10
Description      : (Not Specified)
Admin State      : up              Oper State : up
Script
  Policy Name    : sp-sample
  Policy Owner   : TiMOS CLI
Min Delay        : 0
Last Exec       : 05/24/2015 19:03:31
-----
Handler Action-List Entry Execution Statistics
  Enqueued      : 4
  Err Launch    : 0
  Err Adm Status : 0
  Total         : 4
=====
    
```

Table 173: Handler Output Field Descriptions

Label	Description
Handler	The name of the handler.
Description	The handler description string.
Admin State	The administrative state of the handler.
Oper State	The operational state of the handler.
<b>Handler Action-List Entry</b>	
Entry-id	The action-list entry identifier.
Description	The action-list entry description string.
Admin State	The administrative state of the action-list entry.
Policy Name	The name of the related script policy.
Policy Owner	The owner of the related script policy.
Last Exec	The timestamp of the last successful execution of the action-list entry.

Label	Description
<b>Handler Action-List Entry Execution Statistics</b>	
Enqueued	The number of times the action-list entry was successfully passed on to the SR OS sub-system or module that will attempt to process and execute the action. For a script-policy entry, this indicates that the script request has been enqueued but does not necessarily indicate that the script has successfully launched or completed. For status and information about the script, use the <b>show&gt;system&gt;script-control</b> command.
Err Launch	The number of times the action-list entry was not successfully handed over to the next SR OS sub-system or module in the processing chain. This can be caused by a variety of conditions including a full script request input queue.
Err Adm Status	The number of times the action-list entry was not executed because the entry was administratively disabled.
Total	The total number of times that the action-list entry attempted execution.

## handler

### Syntax

**handler** *event-handler-name*

### Context

[\[Tree\]](#) (clear>log>event-handling handler)

### Full Context

clear log event-handling handler

### Description

This command clears the counters in the **show log event-handling handler** *handler-name* output. It does not affect the global or aggregate counters shown using the **information** command.

### Parameters

***handler-name***

Specifies the name of the event handler, up to 32 characters in length.

### Platforms

All

## 11.2 hash-control

### hash-control

#### Syntax

hash-control

#### Context

[\[Tree\]](#) (show>system>security hash-control)

#### Full Context

show system security hash-control

#### Description

Commands in this context display hash-control configuration information.

#### Platforms

All

## 11.3 hierarchy

### hierarchy

#### Syntax

hierarchy [**subscriber** *sub-ident-string*]

#### Context

[\[Tree\]](#) (show>service>active-subscribers hierarchy)

#### Full Context

show service active-subscribers hierarchy

#### Description

This command displays active subscriber hierarchy information. To display an IPoE/PPP session, the group of hosts within the session is visually indented. Additional information related to the session is also shown. For PPPoE, the circuit ID and remote ID if used is shown. For IPoE, the key used to group the session is shown (for example, the circuit ID). The command also display PD host which are modeled as a managed route. The PD managed route is directly underneath and points to the host that it is using as the next hop. The PD managed route forwarding status is also shown, where (N) indicates that the route is not forwarding.

## Parameters

### *sub-ident-string*

Specifies the subscriber ID of the active subscriber, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of active subscriber hierarchy information.

### Output Example

```
*A:eng-BNG-2# show service active-subscribers hierarchy
=====
Active Subscribers Hierarchy
=====
-- user_1
  (no-prof)
  |
  |-- sap:1/1/20:841 - sla:no-prof
    |
    |-- IPOE-session - mac:00:00:10:10:12:13 - svc:1000
      |
      |-- 192.168.0.13 - DHCP
    -----
Number of active subscribers : 1
Flags: (N) = the host or the managed route is in non-forwarding state
=====
```

```
B:Dut-C# show service active-subscribers hierarchy
=====
Active Subscribers Hierarchy
=====
-- basic1
  (sub_S1)
  |
  |-- sap:1/1/2:51 - sla:slaS2S1
    |
    |-- 3fe0:0:0:10::/64 - mac:10:00:00:00:01:10 - DHCP6 - svc:10
  |
  |-- sap:1/1/2:113 - sla:sla17S1 PPP session:23
    |
    |-- PPP-session - mac:10:00:00:00:01:91 - sid:1 - svc:10
      |
      |-- 10.1.0.111 - IPCP
        |
        |-- 3fe1:0:0:11::/64 - SLAAC
    -----
Number of active subscribers : 1
Flags: (N) = the host or the managed route is in non-forwarding state
=====
*B:Dut-C#
```

```
*A:eng-BNG-2# show service active-subscribers hierarchy radius-acct
=====
Active Subscribers Hierarchy (accounting information)
=====
-- user_1
```

```
(no-prof)
|
+-- sap:1/1/20:841 - sla:no-prof
|   |
|   +-- no radius acct
|   |   session-id          : D854FF000000B5DF40326
|   |
|   +-- IPOE-Session - mac:00:00:10:10:12:13
|   |   |
|   |   +-- no radius acct
|   |   |   session-id      : D854FF000000095DF40326
|   |   |
|   |   +-- 192.168.0.13
|   |   |
|   |   +-- no radius acct
|   |   |   session-id      : D854FF0000000A5DF40326
|   |
|   -----
|   Number of active subscribers : 1
|   =====
```

## 11.4 histogram

### histogram

#### Syntax

**histogram router** *router-instance* **pool** *pool-name* **bucket-size** [1..65536] **num-buckets** [2..50]

#### Context

[\[Tree\]](#) (tools>dump>nat histogram)

#### Full Context

tools dump nat histogram

#### Description

This command displays a NAT pool port usage histogram

#### Parameters

**router** *router-instance*

Specifies the router instance.

**pool** *pool-name*

Specifies the identification of the NAT pool.

**bucket-size** [1..65536]

Specifies the unit of the X-axis of the histogram; a value of ten, for example, would return in a histogram with results for [0-9], [10-19], [20-29], ... ports.

### num-buckets [2..50]

Specifies the size of the histogram; a value of five, for example, would result in five results: [0-9], [10-19], [20-29], [30-39], [40-infinite].

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 11.5 host

### host

#### Syntax

**host** [**detail**] [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

**host interface** *interface-name* [**detail**] [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

**host mac** *ieee-address* [**detail**] [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

**host ipv6-address** *ipv6-prefix* [**detail**] [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

**host sap** *sap-id* [**detail**] [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

#### Context

[\[Tree\]](#) (show>service>id>slaac host)

#### Full Context

show service id slaac host

#### Description

This command displays SLAAC host related information.

#### Parameters

##### detail

Specifies to display detailed SLAAC host related information.

##### service-id

Specifies the service ID of the wholesaler.

**Values** 1 to 2147483647



### **session**

Specifies to display information about SLAAC hosts that are associated with an IPoE session or a PPP session.

**Values** none, ipoe, ppp

### **interface-name**

Specifies the interface name, up to 32 characters.

### **ieee-address**

Specifies the MAC address for which to display SLAAC host information.

### **ipv6-address**

Specifies the IPv6 address for which to display SLAAC host information.

### **sap-id**

Specifies the physical port identifier portion of the SAP definition.

### **policy-name**

Specifies the name of the router advertisement policy.

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## **Output**

The following output is an example of detailed SLAAC host information.

### **Output Example**

```
*A:eng-BNG-2# show service id 1000 slaac host detail
=====
SLAAC hosts for service 1000
=====
Service ID       : 1000
Prefix          : 2001:1000:bad:beef::/64
Interface Id    : N/A
Mac Address     : 00:00:10:10:12:12
Subscriber-interface : sub-int-01
Group-interface : grp-int-01
SAP             : 1/1/20:841
Termination Type : local
Creation Time   : 2017/02/13 22:05:03
Persistence Key : N/A
Router adv. policy : ra-policy-01
IPoE|PPP session : No
Radius sub-if prefix : N/A
IPoE Trigger    : rtr-solicit
Last Auth Time  : 2017/02/13 22:05:03
Inactivity Timer : N/A
Sub-Ident       : "host-1"
Sub-Profile-String : "no-prof"
SLA-Profile-String : "no-prof"
App-Profile-String : ""
ANCP-String     : ""
Int Dest Id     : ""
Category-Map-Name : ""
Info origin     : radius
Pool            : ""
```

```
Primary-Dns      : N/A
Secondary-Dns   : N/A
Circuit Id      : N/A
Remote Id       : N/A

Subscriber Host Limit Overrides
  ipv4-arp      : 1
  ipv4-dhcp     : 1
  ipv4-ppp      : 1
  ipv4-overall  : 1
  ipv6-pd-ipoe-dhcp : 1
  ipv6-pd-ppp-dhcp : 1
  ipv6-pd-overall : 1
  ipv6-wan-ipoe-dhcp : 1
  ipv6-wan-ipoe-slaac : 1
  ipv6-wan-ppp-dhcp : 1
  ipv6-wan-ppp-slaac : 1
  ipv6-wan-overall : 1
  ipv6-overall  : 1
  lac-overall   : 1
  overall       : 1
SLA Profile Instance Host Limit Overrides
  ipv4-arp      : 1
  ipv4-dhcp     : 1
  ipv4-ppp      : 1
  ipv4-overall  : 1
  ipv6-pd-ipoe-dhcp : 1
  ipv6-pd-ppp-dhcp : 1
  ipv6-pd-overall : 1
  ipv6-wan-ipoe-dhcp : 1
  ipv6-wan-ipoe-slaac : 1
  ipv6-wan-ppp-dhcp : 1
  ipv6-wan-ppp-slaac : 1
  ipv6-wan-overall : 1
  ipv6-overall  : 1
  lac-overall   : 1
  overall       : 1
Subscriber Session Limit Overrides
  ipoe         : 1
  pppoe-local  : 1
  pppoe-lac    : 1
  pppoe-overall : 1
  l2tp-lns     : 1
  l2tp-lts     : 1
  l2tp-overall : 1
  overall      : 1
SLA Profile Instance Session Limit Overrides
  ipoe         : 1
  pppoe-local  : 1
  pppoe-lac    : 1
  pppoe-overall : 1
  l2tp-lns     : 1
  l2tp-lts     : 1
  l2tp-overall : 1
  overall      : 1
-----
Number of hosts : 1
=====

*A:Dut-A# show service id 13 slaac host router-advertisement-policy ra-policy-01
=====
SLAAC hosts for service 13
=====
```

```

Prefix          Mac Address      Sap Id          MC-Stdby
  IntId
-----
2013:bad:beef:1::/64  00:00:00:00:00:13  1/1/1:13
  N/A
2013:bad:beef:2::/64  00:00:00:00:00:14  1/1/1:13
  N/A
2013:bad:beef:3::/64  00:00:00:00:00:15  1/1/1:13
  N/A
-----
Number of hosts : 3
=====
*A:Dut-A#
    
```

Table 174: Service SLAAC Host Field Descriptions describes service SLAAC host information.

Table 174: Service SLAAC Host Field Descriptions

Field	Description
Service ID	The service identifier.
Prefix	The prefix for the service
Interface Id	The interface identifier of this SLAAC host. If the SLAAC host has multiple addresses, this field will only show the interface identifier of one of them.
Mac Address	The MAC address of the this SLAAC host
Subscriber-interface	The subscriber interface name
Group-interface	The subscriber interface group interface name
SAP	The service SAP ID
Termination Type	The termination type of this SLAAC host
Creation Time	The date and time the service was created
Persistence Key	The key value that can be used to track this SLAAC host in the persistence file.
Router adv. policy	The name of the router advertisement policy associated with the SLAAC host during authentication
IPoE PPP session	The indication if this SLAAC host belongs to an IPoE or PPP session
Radius sub-if prefix	The subscriber interface prefix that is received from a Radius server
IPoE Trigger	The trigger name
Last Auth Time	The sysUpTime at the time of the last authentication for this session

Field	Description
Inactivity Timer	The remaining time in seconds before the host is removed. A value of 0 indicates no inactivity timer is active.
Sub-Ident	The name of the subscriber identification policy
Sub-Profile-String	The name of the subscriber profile
SLA-Profile-String	The name of the SLA profile
App-Profile-String	The application profile string
ANCP-String	The ANCP string applicable for this session
Int Dest ID	The intermediate destination identifier applicable for this session
Category-Map-Name	The category map name applicable for this session
Info origin	The server that provided the Sub-profile, SLA profile, Ancp string and Intermediate Destination Id
Pool	the DHCP server pool from which the SLAAC prefix is allocated
Primary-Dns	the primary DNS server
Secondary-Dns	the secondary DNS server
Circuit ID	circuit ID of this host
Remote ID	remote ID of this host
Subscriber Host Limit Overrides and SLA Profile Instance Host Limit Overrides: (only shown when overrides are active)	
ipv4-arp	The total number of IPv4 ARP hosts limit
ipv4-dhcp	The total number of IPv4 DHCP hosts limit
ipv4-ppp	The total number of IPv4 PPP hosts limit
ipv4-overall	The total number of IPv4 hosts limit
ipv6-pd-ipoe-dhcp	The total number of IPv6 IPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-ppp-dhcp	The total number of IPv6 PPPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-overall	The total number of IPv6 DHCP Prefix Delegation hosts (IA-PD) limit

Field	Description
ipv6-wan-ipoe-dhcp	The total number of IPv6 IPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ipoe-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit
ipv6-wan-ppp-dhcp	The total number of IPv6 PPPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ppp-slaac	The total number of IPv6 PPPoE SLAAC WAN hosts limit
ipv6-wan-overall	The total number of IPv6 WAN hosts limit
ipv6-overall	The total number of IPv6 hosts limit
lac-overall	The total number of L2TP LAC hosts limit
overall	The total number of subscriber hosts limit
Subscriber Session Limit Overrides and SLA Profile Instance Session Limit Overrides: (only shown when overrides are active)	
ipoe	The total number of IPoE sessions limit
ppoe-local	The total number of PPPoE local terminated sessions (PTA) limit
ppoe-lac	The total number of PPPoE L2TP LAC sessions limit
ppoe-overall	The total number of PPPoE sessions limit
l2tp-lns	The total number of L2TP LNS sessions limit
l2tp-lts	The total number of L2TP LTS sessions limit
l2tp-overall	The total number of L2TP sessions limit
overall	The total number of subscriber sessions limit
Number of hosts	The total number of hosts matching the search criteria
MC-Stdby	The number of SAPs defined on this service on a port which is in multi-chassis standby mode

## host

### Syntax

**host mac** *ieee-address* **ip** *ip-address*

## Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg>gateway host)

## Full Context

```
show subscriber-mgmt vrgw brg gateway host
```

## Description

This command lists pool information about a specific host in the BRG.

## Parameters

### *ieee-address*

Specifies the MAC address identifying a specific host.

### *ip-address*

Displays only the prefixes associated with this host.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

host

## Syntax

```
host [ipv6-address]
```

## Context

[\[Tree\]](#) (show>router>mld>statistics host)

## Full Context

```
show router mld statistics host
```

## Description

This command displays MLD host statistics information.

## Parameters

### *ipv6-address*

Displays information associated with the specified IPv6 address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## host

### Syntax

**host all**

**host ipv6-address** *ipv6-prefix*

**host mac** *ieee-address*

**host sap** *sap-id*

### Context

[\[Tree\]](#) (clear>service>id>slaac host)

### Full Context

clear service id slaac host

### Description

This command clears SLAAC host data.

### Parameters

#### ***ieee-address***

Specifies the MAC address.

#### ***ipv6-prefix***

Specifies the IPv6 prefix and length.

#### ***sap-id***

Specifies the SAP ID.

#### **all**

Clears all SLAAC host data.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## host

### Syntax

**host** [*ip-address*]

### Context

[\[Tree\]](#) (show>router>igmp>statistics host)

### Full Context

show router igmp statistics host

## Description

This command displays IGMP statistics for hosts.

## Parameters

### *ip-address*

Specifies the host IP address.

**Values** a.b.c.d

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 11.6 host-connectivity-verify

### host-connectivity-verify

## Syntax

**host-connectivity-verify statistics** [**sap** *sap-id*]

## Context

[\[Tree\]](#) (show>service>id host-connectivity-verify)

## Full Context

show service id host-connectivity-verify

## Description

This command displays host connectivity check statistics.

## Parameters

### **statistics**

Displays host connectivity verification data

### *sap-id*

Specifies the physical port identifier portion of the SAP definition

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of service host connectivity information.



### Output Example

```
A:ALA-48>show>service>id# host-connectivity-verify statistics sap 1/1/9:0
=====
Host connectivity check statistics
=====
Svc   SapId/      DestIp      Last        Time        Oper
Id    SdpId      Address     Response    Expired     State
-----
10001/2/3:01.144.145.1                Up
=====
A:ALA-48>show>service>id#
```

**Table 175: Show Service Id Host Connectivity Verify Fields** describes show service-id host connectivity verification output fields.

*Table 175: Show Service Id Host Connectivity Verify Fields*

Label	Description
Svc Id	The service identifier.
SapId/SdpId	The SAP and SDP identifiers.
DestIp Address	The destination IP address.
Last Response	The time when the last response was received.
Time Expired	Displays whether the interval value has expired.
Oper State	Displays the current operational state of the service.

## 11.7 host-lockout-policy

### host-lockout-policy

#### Syntax

**host-lockout-policy** [**policy** *host-lockout-policy-name*] *lockout-state*

**host-lockout-policy sap** *sap-id* [**circuit-id** *circuit-id*] [**mac** *ieee-address*] [**remote-id** *remote-id*] [*lockout-state*]

#### Context

**[Tree]** (clear>subscr-mgmt host-lockout-policy)

#### Full Context

clear subscriber-mgmt host-lockout-policy

## Description

This command removes host lockout contexts from the system.

## Parameters

### *sap-id*

Specifies to clear information for hosts in a specific lockout state.

<b>Values</b>		
null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>eth-sat-id</i>	
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : <i>[qtag1</i>   <i>cp-conn-prof-id]</i>	
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : <i>[qtag1</i>   <i>cp-conn-prof-id</i> ]. <i>[qtag2</i>   <i>cp-conn-prof-id]</i>	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>	
ima-grp	<i>bundle-id</i> [: <i>vpi/vci</i>   <i>vpi</i>   <i>vpi1.vpi2</i>   <b>cp</b> . <i>conn-prof-id</i> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port</i> [.channel]	
aps-id	<b>aps</b> - <i>group-id</i> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-tunnel	<i>eth-tunnel-id</i> : <i>[eth-tun-sap-id]</i>	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag</b> - <i>id</i>   <b>lag</b> - <i>string</i>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max
pw-id	<b>pw</b> - <i>id</i>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	null   0 to 4094	
qtag2	*   null   0 to 4094	

tunnel-id	<b>tunnel-id.private</b>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
eth-sat-id	<b>esat-id/slot/port</b>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b

***circuit-id***

Specifies the circuit ID, up to 253 characters.

***ieee-address***

Specifies the MAC address, up to 30 characters.

***remote-id***

Specifies the remote ID, up to 253 characters.

***lockout-state***

Specifies to clear information for hosts in a specific lockout state.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**host-lockout-policy**

**Syntax**

**host-lockout-policy**

**host-lockout-policy** *policy-name* **association**

**host-lockout-policy** *policy-name*

**host-lockout-policy** *policy-name* *lockout-state* **sap** *sap-id* [**summary**]

**host-lockout-policy** *policy-name* *lockout-state* [**circuit-id** *circuit-id*] [**sap** *sap-id*] [**summary**]

**host-lockout-policy** *policy-name* *lockout-state* [**mac** *ieee-address*] [**sap** *sap-id*] [**summary**]

**host-lockout-policy** *policy-name* *lockout-state* [**remote-id** *remote-id*] [**sap** *sap-id*] [**summary**]

## Context

[\[Tree\]](#) (show>subscr-mgmt host-lockout-policy)

## Full Context

show subscriber-mgmt host-lockout-policy

## Description

This command displays host lockout policy information.

## Parameters

### *policy-name*

Specifies a specific subscriber host lockout policy name up to 32 characters.

### *association*

Specifies to display the association of the host lockout policy.

### *lockout-state*

Specifies to display information for hosts in a specific lockout state.

**Values** all, active, graceful

### *sap sap-id*

Specifies to display SAP ID information.

### *circuit-id circuit-id*

Specifies to display circuit ID information. The *circuit-id* is up to 256 characters .

### *mac ieee-address*

Specifies to display MAC address information up to 30 characters.

### *remote-id remote-id*

Specifies to display remote ID information, up to 256 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management host lockout policy information.

### Output Example

```
*A:cses-E11# show subscriber-mgmt host-lockout-policy
=====
Host Lockout Policies
=====
Lockout Policy          Last Mgmt Change
Lockout Time Min       Lockout Time Max
Description
Lockout Reset Time     Max Lockout Hosts
-----
test                    04/20/2012 19:51:02
 10                     3600
test
```

```

60                               100
=====
*A:cses-E11#

*A:cses-E11# show subscriber-mgmt host-lockout-policy "test"
=====
Host Lockout Policy "test"
=====
Description                       test
Last Mgmt Change                   04/20/2012 19:51:02
Lockout time min                   10
Lockout time max                   3600
Lockout reset time                 60
Max lockout hosts                  100
Host key                           all
=====
*A:cses-E11#
    
```

[Table 176: Host Lockout Policy Field Descriptions](#) describes subscriber management host lockout policy output fields.

*Table 176: Host Lockout Policy Field Descriptions*

Field	Description
Lockout Policy	The subscriber Host Lockout Policy name
Last Mgmt Change	The sysUpTime at the time of the most recent management-initiated change to this policy
Lockout Time Min	The minimum lockout-time for this host lockout policy
Lockout Time Max	The maximum lockout-time for this host lockout policy
Description	The user-provided description of this subscriber Host Lockout Policy
Max Lockout Hosts	The maximum number of lockouts for this host
Last Mgmt Change	The sysUpTime at the time of the most recent management-initiated change to this policy
Lockout time min	The minimum lockout-time for this Host Lockout Policy
Lockout time max	The maximum lockout-time for this Host Lockout Policy
Lockout reset time	The lockout reset time for this Host Lockout Policy
Max lockout hosts	The maximum number of locked out hosts for this Host Lockout Policy
Host key	The method for host matching

## 11.8 host-lookup

### host-lookup

#### Syntax

```
host-lookup [mac ieee-address] [ remote-id remote-id-ascii] [sap-id sap-id] [service-id service-id]  
 [string vso-string] [system-id system-id] [option60 option-60-ascii] [circuit-id circuit-id-ascii] [  
 circuit-id-hex circuit-id-hex] [option60-hex option60-hex] [remote-id-hex remote-id-hex] [derived-id  
 derived-id] [ ip-prefix ip-prefix/ip-prefix-length]
```

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>loc-user-db>ipoe host-lookup)

#### Full Context

tools perform subscriber-mgmt local-user-db ipoe host-lookup

#### Description

This command performs a lookup in the local user database. This command looks up the host with the match-list configured in the local user database.

#### Parameters

##### *ieee-address*

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

##### *remote-id*

Specifies the information which goes into the remote-id sub-option in the DHCP relay packet, up to 255 characters.

##### *sap-id*

Specifies a SAP identifier to be used.

##### *service-id*

Specifies an existing subscriber service ID.

**Values** 1 to 2147483647

##### *vso-string*

Specifies a Vendor Specific Option (VSO) string.

##### *system-id*

Specifies the system ID.

**Values** up to 255 characters maximum

***hex-string***

Specifies the content of option 60 for this lookup.

**Values** 0x0 to 0xFFFFFFFF (maximum 64 hex nibbles)

***circuit-id***

Specifies the circuit ID from the Option 82.

***circuit-id-hex***

Specifies the circuit ID in hexadecimal format from the Option 82.

**Values** 0x0 to 0xFFFFFFFF (maximum 254 hex nibbles)

***sap-id***

Specifies a SAP ID, up to 255 characters maximum.

***option-60-ascii***

Specifies the Vendor-Identifying Vendor Option to match against. Option 60 is encoded as Type - Length - Value and must be formatted in ASCII.

***option-60-hex***

Specifies the Vendor-Identifying Vendor Option to match against. Option 60 is encoded as Type - Length - Value and must be formatted in HEX.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## host-lookup

**Syntax**

**host-lookup** [**circuit-id** *circuit-id*] [**circuit-id-hex** *circuit-id-hex*] [**derived-id** *derived-id*] [**mac** *ieee-address*] [**remote-id** *remote-id*] [**remote-id-hex** *remote-id-hex*] [**sap-id** *sap-id*] [**service-name** *service-name*] [**user-name** *user-name*]

**Context**

[\[Tree\]](#) (tools>perform>subscr-mgmt>loc-user-db>ppp host-lookup)

**Full Context**

tools perform subscriber-mgmt local-user-db ppp host-lookup

**Description**

This command performs a lookup in the local user database.

**Parameters**

***ieee-address***

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

**remote-id**

Specifies the information that goes into the remote-id sub-option in the DHCP relay packet, up to 255 characters.

**user-name**

Specifies a user name, up to 128 characters.

**service-name**

Specifies a PPP service name, up to 255 characters.

**circuit-id**

Specifies the circuit ID from the Option 82.

**circuit-id-hex**

Specifies the circuit ID in hexadecimal format from the Option 82.

**Values** 0x0 to 0xFFFFFFFF (maximum 254 hex nibbles)

**derived-id derived-id**

Specifies an ASCII string that uniquely identifies a host and is derived by a Python script from packet content available during a DHCP transaction.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

Use the following command for an example of PPP host lookup information.

```
tools perform subscriber-mgmt local-user-db "ludb-1" ppp host-lookup user-name user-1@best.net
```

```
=====  
PPP host Lookup results  
=====
```

```
Result           : Success  
Matched Host Name : default  
Admin State      : Up  
Last Mgmt Change : 02/22/2023 09:58:51
```

```
Host Identification  
Mac Address      : N/A  
Circuit Id       : N/A  
Remote Id        : N/A  
Sap Id           : N/A  
Service Name     : N/A  
User Name        : N/A  
Encap Tag Range  : N/A  
Encap Tag Sep Range : N/A  
Derived Id       : N/A
```

```
Matched Objects  : N/A
```

```
Address          : N/A  
Password Type    : N/A  
PADO Delay       : 0msec  
Pre Auth Policy  : N/A  
Auth Policy      : radius-auth-1  
Padi Auth Policy : N/A
```



```
Diameter app policy : (Not Specified)
Diameter auth policy : (Not Specified)
Acct Policy : N/A
Dupl Acct Policy : N/A
User DB : N/A
Rip Policy : N/A
Router Advert Policy : N/A
Retailer Svc Id : N/A
Service : N/A
Interface : N/A
Force IPv6CP : Disabled
IPv6 Address : N/A
IPv6 Del Pfx : N/A
IPv6 Slaac Pfx : N/A
IPv6 Address Pool : N/A
IPv6 Del Pfx Pool : N/A
IPv6 Slaac Pfx Pool : N/A
IPv6 Del Pfx Length : N/A
Ignore DF Bit : Disabled

DHCPv6 lease times
Renew timer : > 9999 days
Rebind timer : > 9999 days
Preferred lifetime : 0d 00:00:00
Valid lifetime : 0d 00:00:00

Identification Strings
Subscriber Id : N/A
SLA Profile String : N/A
SPI Sharing Group Id: N/A
Sub Profile String : N/A
App Profile String : N/A
ANCP String : N/A
Inter Destination Id: N/A
Category Map Name : N/A

L2TP
Service : N/A
Tunnel Group : N/A
LAC Steering Profile: N/A

MSAP defaults
Policy : N/A
Service : N/A
Group Interface : N/A
Group Interface Pfx : none
Group Interface Sfx : none

Filter Overrides
Ing Ipv4 Fltr : N/A
Egr Ipv4 Fltr : N/A
Ing Ipv6 Fltr : N/A
Egr Ipv6 Fltr : N/A

Access loop info
Circuit ID format : none
Circuit ID : N/A
Remote ID format : none
Remote ID : N/A

PPP policy parameters
Max sessions per mac: N/A
Keepalive : N/A
=====
```

## host-lookup

### Syntax

**host-lookup** [**circuit-id** *circuit-id*] [**circuit-id-hex** *circuit-id-hex*] [**derived-id** *derived-id*] [**mac** *ieee-address*] [**remote-id** *remote-id*] [**remote-id-hex** *remote-id-hex*] [**sap-id** *sap-id*] [**service-name** *service-name*] [**user-name** *user-name*]

### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>loc-user-db>ppp host-lookup)

### Full Context

tools perform subscriber-mgmt local-user-db ppp host-lookup

### Description

This command performs a lookup in the local user database.

### Parameters

#### ***circuit-id*** *circuit-id*

Specifies the circuit ID from the Option 82.

#### ***circuit-id-hex***

Specifies the circuit ID in hexadecimal format from the Option 82.

**Values** 0x0 to 0xFFFFFFFF (maximum 254 hex nibbles)

#### ***derived-id***

Specifies an ASCII string that uniquely identifies a host, and is derived by a Python script from packet content available during a DHCP transaction.

#### ***remote-id***

Specifies that information that goes into the remote-id sub-option in the DHCP relay packet, up to 255 characters.

#### ***remote-id-hex***

Specifies the remote ID in hexadecimal format.

**Values** 0x0 to 0xFFFFFFFF (maximum 510hex nibbles)

#### ***sap-id***

Specifies a SAP ID, up to 255 characters.

#### ***service-name***

Specifies a PPP service name up to 253 characters.

#### ***user-name***

Specifies a user name up to 128 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 11.9 host-tracking

### host-tracking

#### Syntax

**host-tracking** [**subscriber** *sub-ident-string*]  
**host-tracking** [**subscriber** *sub-ident-string*] **detail**  
**host-tracking** [**subscriber** *sub-ident-string*] **summary**  
**host-tracking** [**subscriber** *sub-ident-string*] **statistics**

#### Context

[\[Tree\]](#) (show>service>active-subscribers host-tracking)

#### Full Context

show service active-subscribers host-tracking

#### Description

This command displays active subscriber host tracking information.

#### Parameters

##### ***sub-ident-string***

Displays subscriber ID of the active subscriber, up to 32 characters.

##### **detail**

Displays detailed host tracking information for the specified subscriber ID.

##### **summary**

Displays summarized host tracking information for the specified subscriber ID.

##### **statistics**

Displays statistical host tracking information for the specified subscriber ID.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### host-tracking

#### Syntax

**host-tracking** [**statistics**]

**host-tracking sap** *sap-id* [**host** *ip-address*] [**statistics**]

### Context

[\[Tree\]](#) (clear>service>id host-tracking)

### Full Context

clear service id host-tracking

### Description

This command clears host tracking data.

### Parameters

**sap-id**

Specifies a SAP for which to clear host tracking data.

**ip-address**

Specifies the IP address of a host for which to clear tracking data.

**Values** a.b.c.d

**statistics**

Clears statistics.

### Platforms

All

host-tracking

### Syntax

host-tracking

### Context

[\[Tree\]](#) (clear>subscr-mgmt host-tracking)

### Full Context

clear subscriber-mgmt host-tracking

### Description

Commands in this context clear host tracking data.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 11.10 host-tracking-policy

### host-tracking-policy

#### Syntax

**host-tracking-policy**

**host-tracking-policy** *policy-name* **association**

**host-tracking-policy** *policy-name*

#### Context

[\[Tree\]](#) (show>subscr-mgmt host-tracking-policy)

#### Full Context

show subscriber-mgmt host-tracking-policy

#### Description

This command displays host tracking policy information.

#### Parameters

***policy-name***

Specifies the host tracking policy name, up to 32 characters.

**association**

Displays information associated with the host tracking policy.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 11.11 hostname

### hostname

#### Syntax

**hostname**

#### Context

[\[Tree\]](#) (show>service>id>spb hostname)

## Full Context

```
show service id spb hostname
```

## Description

This command displays SPB system-id to hostname mapping.

## Platforms

All

## Output

The following output is an example of service SPB hostname information.

### Output Example

```
*A:Dut-A# show service id 100001 spb hostname
=====
Hosts
=====
System Id           Hostname
-----
0000.00AA.AAAA     cses-B02
0000.00BB.BBBB     cses-B07
=====
```

## hostname

## Syntax

```
hostname
```

## Context

[\[Tree\]](#) (show>router>isis hostname)

## Full Context

```
show router isis hostname
```

## Description

This command displays the hostname database. There are no options or parameters.

## Platforms

All

## Output

IS-IS Hostname Output

[Table 177: IS-IS Hostname Output Fields](#) describes output fields for IS-IS hostname output.

Table 177: IS-IS Hostname Output Fields

Label	Description
System-id	System identifier mapped to hostname.
Hostname	Hostname for the specific <i>system-id</i> .
Type	The type of entry (static or dynamic).

### Output Example

```
A:ALA-A# show router isis hostname
=====
Rtr Base ISIS Instance 0 Hostnames
=====
System Id                Hostname
-----
1800.0000.0002           core_west
1800.0000.0005           core_east
1800.0000.0008           asbr_west
1800.0000.0009           asbr_east
1800.0000.0010           abr_sjc
1800.0000.0011           abr_lax
1800.0000.0012           abr_nyc
1800.0000.0013           abr_dfw
1800.0000.0015           dist_oak
1800.0000.0018           dist_nj
1800.0000.0020           acc_nj
1800.0000.0021           acc_ri
1800.0000.0027           dist_arl
1800.0000.0028           dist_msq
1800.0000.0029           acc_arl
1800.0000.0030           acc_msq
=====
A:ALA-A#
```

## hostname

### Syntax

**hostname**

### Context

[\[Tree\]](#) (show>router>ospf hostname)

[\[Tree\]](#) (show>router>ospf3 hostname)

### Full Context

show router ospf hostname

show router ospf3 hostname

## Description

This command displays information about the hostname database.

## Platforms

All

## Output

The following output is an example of OSPF hostname database information. [Table 178: Host Output Fields](#) displays field descriptions.

Table 178: Host Output Fields

Label	Description
Nbr Rtr Id	The OSPF ID.
hostname	The OSPF hostname.
No. of OSPF RTR id/ hostnames	The total number of OSPF router IDs and hostnames.

## Output Example

```
*A:router-B# show router ospf hostname
=====
Rtr Base OSPFv2 Instance 0 hostnames
=====
Nbr Rtr Id      hostname
-----
10.20.0.3      router-A
10.20.1.3      router-B
10.20.2.3      -
10.20.3.3      router-D
-----
No. of OSPF Rtr id/hostnames: 4
```

## 11.12 hosts

### hosts

#### Syntax

**hosts** [**group** *grp-address*] [**detail**] [ **fwd-service** *service-id*] [**grp-interface** *ip-int-name*]

**hosts** [**host** *ip-address*] [**group** *grp-address*] [**detail**]

**hosts summary**

#### Context

[\[Tree\]](#) (show>router>igmp hosts)



## Full Context

show router igmp hosts

## Description

This command displays IGMP hosts information.

## Parameters

### *grp-address*

Specifies the group IP address.

### *service-id*

Specifies the service ID.

**Values** service-id: 1 to 2148278386  
 svc-name: up to 64 characters.

### *ip-int-name*

Specifies an IP interface name, up to 32 characters.

### *ip-address*

Specifies an IP address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of IGMP host information.

### Output Example

```
*B:Dut-C# show router igmp hosts
=====
IGMP Hosts
=====
Host          Oper   Oper   Fwd   GrpItf          Num   Subscriber
              State  Version Svc                   Groups
-----
239.112.1.1   Up     3      1     gi_1_1          1     sub_1
239.112.1.2   Up     3      1     gi_1_1          2     sub_1
239.112.1.3   Up     3      1     gi_1_2          0     sub_2
-----
Hosts : 3
=====
*B:Dut-C#
*B:Dut-C# show router igmp hosts detail
=====
IGMP Host 239.112.1.1
=====
Oper Status    : Up           MacAddress     : 00:00:00:00:00:01
Oper version   : 3            Subscriber     : sub_1
Num Groups     : 1            GrpItf        : gi_1_1
Max Grps Till Now: 2          IGMP-Policy   : pol1
PPPoE SessionId : 1           Next query time: 0d 00:02:03
FwdSvcId      : 1
```

```

-----
IGMP Group
-----
Group Address   : 239.0.0.1      Up Time    : 0d 00:00:24
Expires        : Not running  Mode       : Include
V1 Host Timer  : Not running  Type      : Dynamic
V2 Host Timer  : Not running  Compat Mode: IGMP Version 3
Redir.vRtrId   : N/A         Redir.Intf : N/A
-----
Source Address  Expires      Type       Fwd/Blk
-----
10.11.0.1      0d 00:03:56 Dynamic    Fwd
10.11.0.2      0d 00:03:56 Dynamic    Fwd
=====
IGMP Host 239.112.1.2
=====
Oper Status    : Up          MacAddress  : 00:00:00:00:00:01
Oper version   : 3          Subscriber  : sub_1
Num Groups     : 2          GrpItf     : gi_1_1
Max Grps Till Now: 2      IGMP-Policy : poll
PPPoE SessionId : 2       Next query time: 0d 00:02:03
FwdSvcId      : 1
-----
IGMP Group
-----
Group Address   : 239.0.0.1      Up Time    : 0d 00:00:16
Expires        : 0d 00:04:05 Mode       : Exclude
V1 Host Timer  : Not running  Type      : Dynamic
V2 Host Timer  : Not running  Compat Mode: IGMP Version 3
Redir.vRtrId   : N/A         Redir.Intf : N/A
-----
Source Address  Expires      Type       Fwd/Blk
-----
10.11.0.1      0d 00:00:00 Dynamic    Blk
-----
IGMP Group
-----
Group Address   : 239.0.0.2      Up Time    : 0d 00:00:16
Expires        : 0d 00:04:04 Mode       : Exclude
V1 Host Timer  : Not running  Type      : Dynamic
V2 Host Timer  : Not running  Compat Mode: IGMP Version 3
Redir.vRtrId   : N/A         Redir.Intf : N/A
-----
Source Address  Expires      Type       Fwd/Blk
-----
10.11.0.1      0d 00:00:00 Dynamic    Blk
=====
IGMP Host 239.112.1.3
=====
Oper Status    : Up          MacAddress  : 00:00:00:00:00:02
Oper version   : 3          Subscriber  : sub_2
Num Groups     : 0          GrpItf     : gi_1_2
Max Grps Till Now: 1      IGMP-Policy : poll
PPPoE SessionId : 1       Next query time: 0d 00:00:48
FwdSvcId      : 1
-----
Hosts : 3
=====
*B:Dut-C#
=====
*B:Dut-C# show router igmp statistics host 239.112.1.1
=====
IGMP Host Statistics 239.112.1.1
=====
    
```

```
Message Type      Received      Transmitted
-----
Queries           0             580
Report V1         0             0
Report V2         0             0
Report V3         5             0
Leaves            0             0
-----
General Host Statistics
-----
Bad Length       : 0
Bad Checksum     : 0
Unknown Type     : 0
Bad Receive If   : 0
Rx Non Local     : 0
Rx Wrong Version : 0
Policy Drops     : 0
No Router Alert  : 0
Rx Bad Encodings : 0
Local Scope Pkts : 0
Resvd Scope Pkts : 0
MCAC Policy Drops : 0
-----
Source Group Statistics
-----
(S,G)           : 0
(*,G)           : 0
=====
*B:Dut-C# show subscriber-mgmt igmp-policy
```

## hosts

### Syntax

**hosts**

### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg>gateway hosts)

### Full Context

show subscriber-mgmt vrgw brg gateway hosts

### Description

This command lists all the hosts connected to the BRG.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of BRG gateway host information.

### Output Example

```
Node# show subscriber-mgmt brg gateway brg-id "00:00:00:00:00:05" hosts
```

```
=====
Bridged Residential Gateway hosts
=====
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:19
IP address           : 21.0.0.20
Service              : 4 (VPRN)
Allocation type      : dynamic
Home-aware pool      : 00:00:00:00:00:05
DHCP lease           : true
Remaining lease time : 388
Lease start time     : 2016/01/18 17:44:44
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:19
IP address           : 3ffe:0:0:5::
Service              : 4 (VPRN)
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:1a
IP address           : 21.0.0.21
Service              : 4 (VPRN)
Allocation type      : dynamic
Home-aware pool      : 00:00:00:00:00:05
DHCP lease           : true
Remaining lease time : 392
Lease start time     : 2016/01/18 17:44:48
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:1a
IP address           : 3ffe:0:0:5::
Service              : 4 (VPRN)
Identifier           : 00:00:00:00:00:05
MAC address          : 00:02:00:00:00:1b
IP address           : 21.0.0.22
Service              : 4 (VPRN)
Allocation type      : dynamic
Home-aware pool      : 00:00:00:00:00:05
DHCP lease           : true
Remaining lease time : 396
Lease start time     : 2016/01/18 17:44:52
-----
No. of BRG hosts: 5
=====
```

## hosts

### Syntax

**hosts** [**detail**] [**fwd-service** *service-id*] [**grp-interface** *ip-int-name*]

**hosts** [**host** *ipv6-address*] [**group** *grp-ipv6-address*] [**detail**]

**hosts summary**

### Context

[\[Tree\]](#) (show>router>mld hosts)

### Full Context

show router mld hosts

## Description

This command shows MLD hosts information.

## Parameters

### *grp-ipv6-address*

Specifies the group IPv6 address.

### *service-id*

Specifies the service ID.

**Values** service-id: 1 to 2148278386  
 svc-name: up to 64 characters.

### *ip-int-name*

Specifies the IP interface name, up to 32 characters.

### *ipv6-address*

Specifies the IPv6 address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of MLD host information.

### Output Example

```
A:Dut-C# show router mld hosts
=====
MLD Hosts
=====
Host                               Subscriber
  Oper-State Oper-Ver Fwd-Svc Num-Groups Group-Interface
-----
192:168:9::1                       oli_1
  Up          2         1      0                grp-1-2-1
192:168:9::2                       oli_1
  Up          2         1      0                grp-1-2-1
-----
Hosts : 2
=====
A:Dut-C#

A:Dut-C# show router mld hosts detail
=====
MLD Host 192:168:9::1
=====
Oper Status      : Up           MacAddress       : 00:00:11:00:00:01
Oper Version     : 2             Subscriber       : oli_1
NumGrps          : 0             GrpItf          : grp-1-2-1
MaxGrps Till Now : 0             MLD Policy      : oli1
PPPoE SessionId : N/A          Next Query Time : 0d 00:00:06
FwdSvcId        : 1             MaxSrcs Allowed: No Limit
MaxGrps Allowed : No Limit     MaxGrpSrcs All*: No Limit
Qry Interval    : 125          Qry Last Lstnr*: 1
Qry Resp Interval: 10         Router Alert C*: Enabled
```

```

Bonding Conn Idx : 0          Bonding Id      : None
=====
MLD Host 192:168:9::2
=====
Oper Status      : Up          MacAddress     : 00:00:11:00:00:02
Oper Version     : 2           Subscriber     : oli_1
NumGrps          : 0           GrpItf        : grp-1-2-1
MaxGrps Till Now : 0           MLD Policy    : oli1
PPPoE SessionId : N/A         Next Query Time: 0d 00:00:06
FwdSvcId        : 1           MaxSrcs Allowed: No Limit
MaxGrps Allowed : No Limit    MaxGrpSrcs All*: No Limit
Qry Interval     : 125        Qry Last Lstnr*: 1
Qry Resp Interval: 10        Router Alert C*: Enabled
Bonding Conn Idx : 0          Bonding Id      : None
-----
Hosts : 2
=====
* indicates that the corresponding row element may have been truncated.
A:Dut-C#
  
```

## 11.13 hosts-logging-out

### hosts-logging-out

#### Syntax

**hosts-logging-out** [*portal name*] [*host ip-address*] [*circuit-id circuit-id*] [*remote-id remote-id*] [*sap sap-id*] [*mac ieee-address*] [*session*] [*all-portals*] [*all-hosts*] [*all-sessions*]

#### Context

**[Tree]** (clear>router>wpp hosts-logging-out)

#### Full Context

clear router wpp hosts-logging-out

#### Description

This command clears WPP hosts that are logging out.

#### Parameters

##### *name*

Specifies the portal name, up to 32 characters.

##### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

##### *circuit-id*

Specifies the circuit ID, up to 256 characters.

***remote-id***

Specifies the remote ID, up to 256 characters.

***sap-id***

Specifies the SAP ID.

***ieee-address***

Specifies the MAC address, up to 30 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 11.14 hs-attachment-policy

### hs-attachment-policy

**Syntax**

**hs-attachment-policy** [*policy-name*] [**association** | **detail**]

**Context**

[\[Tree\]](#) (show>qos hs-attachment-policy)

**Full Context**

show qos hs-attachment-policy

**Description**

This command displays information about HS attachment policies in the system.

**Parameters**

***policy-name***

Displays information about the specified policy name, up to 32 characters.

**association**

Displays the entities associated with all HS attachment policies or the specified HS attachment policy.

**detail**

Displays detailed policy information, including policy associations, of all HS attachment policies, or the specified HS attachment policy.

**Platforms**

7750 SR-7/12/12e

## Output

The following output is an example of HS attachment policy information.

### Output Example

```
*A:PE# show qos hs-attachment-policy "default"

=====
HS Attachment Policy Information
=====
Policy Name          : default
Description          : Default hs attachment QoS policy
Low Burst Max Class  : 6

-----
Queue                Scheduling Class      WRR Group
-----
1                    (Not-Applicable)     1
2                    (Not-Applicable)     1
3                    (Not-Applicable)     1
4                    2                    (Not-Applicable)
5                    3                    (Not-Applicable)
6                    4                    (Not-Applicable)
7                    5                    (Not-Applicable)
8                    6                    (Not-Applicable)

-----
WRR Group            Scheduling Class
-----
1                    1
2                    unattached

=====

*A:PE# show qos hs-attachment-policy "hs-att-pol-1" detail

=====
HS Attachment Policy Information
=====
Policy Name          : hs-att-pol-1
Description          : (Not Specified)
Low Burst Max Class  : 1

-----
Queue                Scheduling Class      WRR Group
-----
1                    (Not-Applicable)     1
2                    (Not-Applicable)     1
3                    unattached            unattached
4                    unattached            unattached
5                    unattached            unattached
6                    4                    (Not-Applicable)
7                    5                    (Not-Applicable)
8                    6                    (Not-Applicable)

-----
WRR Group            Scheduling Class
-----
1                    1
2                    unattached

-----
Associations
-----
```



```
Network-Queue Policy
-----
10

Sap-Egress Policy
-----
10
20

Egress Queue-Group Templates
-----
queue-group-1
-----
=====
*A:PE#
```

## 11.15 hs-pool-policy

### hs-pool-policy

#### Syntax

```
hs-pool-policy [policy-name] [association | detail]
```

#### Context

[\[Tree\]](#) (show>qos hs-pool-policy)

#### Full Context

```
show qos hs-pool-policy
```

#### Description

This command displays information about HS pool policies in the system.

#### Parameters

##### ***policy-name***

Displays information about the specified HS pool policy name, up to 32 characters.

##### **association**

Displays the entities associated with all HS pool policies or the specified HS pool policy.

##### **detail**

Displays detailed policy information, including policy associations, of all HS pool policies or the specified HS pool policy.

#### Platforms

7750 SR-7/12/12e

## Output

The following output is an example of HS pool policy information.

### Output Example

```
*A:PE# show qos hs-pool-policy

=====
HS Pool Policy Summary
=====
Policy Name          Description
-----
default              Default hs pool QoS policy
hs-pool-pol-1        (Not Specified)
-----
No. of Policies: 2
=====

*A:PE# show qos hs-pool-policy default detail

=====
HS Pool Policy Information
=====
Policy Name          : default
Description           : Default hs pool QoS policy
System Reserve       : 5.00
-----

Root Pool Information
-----
Pool Id              : 1           Allocation Weight : 75
Slope Policy         : _tmnx_hs_default
Pool Id              : 2           Allocation Weight : 25
Slope Policy         : _tmnx_hs_default
Pool Id              : 3           Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 4           Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 5           Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 6           Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 7           Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 8           Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 9           Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 10          Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 11          Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 12          Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 13          Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 14          Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 15          Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
Pool Id              : 16          Allocation Weight : 0
Slope Policy         : _tmnx_hs_default
```

-----  
 -----  
 Mid Pool Information  
 -----

```

Pool Id           : 1           Allocation Percent : 40.00
Port BW Oversub Factor : 1           Parent Root Pool   : 1
Slope Policy      : _tmnx_hs_default
Pool Id           : 2           Allocation Percent : 35.00
Port BW Oversub Factor : 1           Parent Root Pool   : 1
Slope Policy      : _tmnx_hs_default
Pool Id           : 3           Allocation Percent : 30.00
Port BW Oversub Factor : 1           Parent Root Pool   : 1
Slope Policy      : _tmnx_hs_default
Pool Id           : 4           Allocation Percent : 25.00
Port BW Oversub Factor : 1           Parent Root Pool   : 1
Slope Policy      : _tmnx_hs_default
Pool Id           : 5           Allocation Percent : 80.00
Port BW Oversub Factor : 1           Parent Root Pool   : 2
Slope Policy      : _tmnx_hs_default
Pool Id           : 6           Allocation Percent : 20.00
Port BW Oversub Factor : 1           Parent Root Pool   : 2
Slope Policy      : _tmnx_hs_default
Pool Id           : 7           Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 8           Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 9           Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 10          Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 11          Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 12          Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 13          Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 14          Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 15          Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
Pool Id           : 16          Allocation Percent : 1.00
Port BW Oversub Factor : 1           Parent Root Pool   : 0
Slope Policy      : _tmnx_hs_default
    
```

-----  
 -----  
 Card Forwarding Plane (FP) Associations  
 -----

```

Card           FP
-----
1             1
    
```

```
=====
*A:PE#
```

## 11.16 hs-pools

### hs-pools

#### Syntax

**hs-pools** *card-slot-number* **fp** *forwarding-plane* **egress**

**hs-pools** **port** *port-id* **egress**

**hs-pools** **port** *port-id* **egress** **network-queues**

**hs-pools** **port** *port-id* **egress** **queue-group** *queue-group-name* [**instance** *instance-id*]

**hs-pools** **port** *port-id* **egress** **sap** *sap-id*

**hs-pools** **port** *port-id* **egress** **subscriber** *sub-ident-string*

#### Context

[\[Tree\]](#) (show hs-pools)

#### Full Context

show hs-pools

#### Description

This command shows the egress pool information relating to an HSQ IOM.

The **card** and **fp** output shows the total buffer allocation, the number of allocated buffers, the available buffer allocation, and the buffer high-water marks for the system pools and the hierarchy of user-provisioned root and mid pools on the specified card and FP. The output includes the applied slope policy and the related instantaneous slope drop probabilities (as a percentage) for the user-provisioned pools.

The port output adds the port class pool information to the above hierarchy of user-provisioned pools for the specified port. The queue information for network queues, queue group instances, SAPs, or subscribers on the specified port is included when the associated parameter is added.

#### Parameters

##### **card-slot-number**

Displays information for the specified card slot.

**Values** Depending on the chassis model, IOM slots are numbered from 1 to 10.

##### **forwarding-plane**

Displays information for the specified forwarding plane.

**Values** 1

**port-id**

Displays information about the specified physical port ID in the slot/mda/port format.

**network-queues**

Displays information about the egress network queues on the specified port.

**queue-group-name**

Displays information about the specified queue group name, up to 32 characters.

**instance-id**

Displays information about the specified queue group instance.

**Values** 1 to 65535

**sap-id**

Displays information about the specified SAP, up to 64 characters, on the specified port.

**sub-ident-string**

Displays information about the specified subscriber, up to 64 characters, on the specified port.

**Platforms**

7750 SR-7/12/12e

**Output**

The following output is an example of HS pool information.

**Output Example**

```
*A:PE4# show hs-pools port 1/1/2 egress sap 1/1/2:1
=====
HS Pools Port Information
=====
Port                : 1/1/2
-----
System Pool Information
-----
Total Buffers       : 209412 KB      Allocated           : 0 KB
Available           : 209412 KB      High Water Mark     : 0 KB
-----
Buffer Pool Hierarchy Information
-----
Root Pool : 1
| Total           : 2984148 KB  Allocated           : 0 KB
| Available       : 2984148 KB  High Water Mark     : 0 KB
| Hi-Slope Drop Prob : 0           Lo-Slope Drop Prob: 0
| Excd-Slope Drop Prob: 0
| Hs Slope Policy  : _tmnx_hs_default
|
|--- Mid Pool : 1
|   | Total           : 1193658 KB  Allocated           : 0 KB
|   | Available       : 1193658 KB  High Water Mark     : 0 KB
|   | Hi-Slope Drop Prob : 0           Lo-Slope Drop Prob: 0
|   | Excd-Slope Drop Prob: 0
|   | Hs Slope Policy  : _tmnx_hs_default
```

```
| | --- Std Port Class Pool : 6  
| | Total : 596828 KB Allocated : 0 KB  
| | Available : 596828 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default  
| |  
| | --- Mid Pool : 2  
| | Total : 1044450 KB Allocated : 0 KB  
| | Available : 1044450 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default  
| |  
| | --- Std Port Class Pool : 5  
| | Total : 522224 KB Allocated : 0 KB  
| | Available : 522224 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default  
| |  
| | --- Mid Pool : 3  
| | Total : 895244 KB Allocated : 0 KB  
| | Available : 895244 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default  
| |  
| | --- Std Port Class Pool : 4  
| | Total : 447622 KB Allocated : 0 KB  
| | Available : 447622 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default  
| |  
| | --- Mid Pool : 4  
| | Total : 746036 KB Allocated : 0 KB  
| | Available : 746036 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default  
| |  
| | --- Std Port Class Pool : 1  
| | Total : 373018 KB Allocated : 0 KB  
| | Available : 373018 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : hs-slope-1  
| |  
| | Root Pool : 2  
| | Total : 994716 KB Allocated : 0 KB  
| | Available : 994716 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default  
| |  
| | --- Mid Pool : 5  
| | Total : 795772 KB Allocated : 0 KB  
| | Available : 795772 KB High Water Mark : 0 KB  
| | Hi-Slope Drop Prob : 0 Lo-Slope Drop Prob: 0  
| | Excd-Slope Drop Prob: 0  
| | Hs Slope Policy : _tmnx_hs_default
```

```

|--- Mid Pool : 6
|   | Total          : 198942 KB   Allocated       : 0 KB
|   | Available      : 198942 KB   High Water Mark : 0 KB
|   | Hi-Slope Drop Prob : 0           Lo-Slope Drop Prob: 0
|   | Excd-Slope Drop Prob: 0
|   | Hs Slope Policy   : _tmnx_hs_default
|
|-----|
| Queue Information
|-----|
| Queue Name      : 1->1/1/2:1->1
| FC Map          : be l2 l1 h2 nc
| Admin PIR       : 40000           Oper PIR         : 0
| Admin MBS       : 64 KB           Oper MBS         : 64 KB
| HS Wrr Group    : 1
| HS Wrr Class Weight: 1           HS Wrr Weight    : 2
| Depth          : 0
| HS Class        : 1               HS Alt Port Class Pool : No
| HS Slope Policy : _tmnx_hs_default
| Queue Name      : 1->1/1/2:1->2
| FC Map          : af
| Admin PIR       : 40000           Oper PIR         : 0
| Admin MBS       : 64 KB           Oper MBS         : 64 KB
| HS Wrr Group    : 1
| HS Wrr Class Weight: 1           HS Wrr Weight    : 1
| Depth          : 0
| HS Class        : 1               HS Alt Port Class Pool : No
| HS Slope Policy : _tmnx_hs_default
| Queue Name      : 1->1/1/2:1->6
| FC Map          : ef
| Admin PIR       : 20000           Oper PIR         : 20000
| Admin MBS       : 64 KB           Oper MBS         : 64 KB
| HS Wrr Group    : (not-applicable)
| HS Wrr Class Weight: 1           HS Wrr Weight    : 0
| Depth          : 0
| HS Class        : 4               HS Alt Port Class Pool : No
| HS Slope Policy : _tmnx_hs_default
| Queue Name      : 1->1/1/2:1->7
| FC Map          : h1
| Admin PIR       : 10000           Oper PIR         : 10000
| Admin MBS       : 64 KB           Oper MBS         : 64 KB
| HS Wrr Group    : (not-applicable)
| HS Wrr Class Weight: 1           HS Wrr Weight    : 0
| Depth          : 0
| HS Class        : 5               HS Alt Port Class Pool : No
| HS Slope Policy : _tmnx_hs_default
|
|-----|
|=====|
    
```

## 11.17 hs-port-pool-policy

### hs-port-pool-policy

#### Syntax

**hs-port-pool-policy** [*policy-name*] [**association** | **detail**]

## Context

[\[Tree\]](#) (show>qos hs-port-pool-policy)

## Full Context

show qos hs-port-pool-policy

## Description

This command displays information about HS port pool policies in the system.

## Parameters

### *policy-name*

Displays information about the specified HS port pool policy name, up to 32 characters.

### *association*

Displays the entities associated with all HS port pool policies or the specified HS port pool policy.

### *detail*

Displays detailed policy information, including policy associations, of all HS port pool policies, or the specified HS port pool policy.

## Platforms

7750 SR-7/12/12e

## Output

The following output is an example of HS port pool policy information.

### Output Example

```
*A:PE# show qos hs-port-pool-policy
=====
HS Port Pool Policy Summary
=====
Policy Name          Description
-----
default              Default hs port pool QoS policy
no-class-pools       (Not Specified)
hs-port-pool-pol-1   (Not Specified)
-----
No. of Policies: 3
=====
*A:PE# show qos hs-port-pool-policy default detail
=====
HS Port Pool Policy Information
=====
Policy Name          : default
Description           : Default hs port pool QoS policy
-----
Standard Port Class Pool Information
-----
Class Id              : 1          Parent Mid Pool      : 1
Alloc Port BW Weight : 1          Alloc Explicit Prcnt: 0.00
```



```

Slope Policy      : _tmnx_hs_default
Class Id         : 2           Parent Mid Pool      : 2
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 3           Parent Mid Pool      : 3
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 4           Parent Mid Pool      : 4
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 5           Parent Mid Pool      : 5
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 6           Parent Mid Pool      : 6
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
    
```

-----  
 Alternate Port Class Pool Information  
 -----

```

Class Id         : 1           Parent Mid Pool      : 0
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 2           Parent Mid Pool      : 0
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 3           Parent Mid Pool      : 0
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 4           Parent Mid Pool      : 0
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 5           Parent Mid Pool      : 0
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
Class Id         : 6           Parent Mid Pool      : 0
Alloc Port BW Weight : 1           Alloc Explicit Prcnt: 0.00
Slope Policy      : _tmnx_hs_default
    
```

-----  
 Port Ethernet Egress Associations  
 -----

1/2/1  
 -----

=====  
 \*A:PE#

## 11.18 hs-scheduler-hierarchy

### hs-scheduler-hierarchy

#### Syntax

**hs-scheduler-hierarchy** port *port-id* [**hs-secondary-shaper** *shaper-name*] [*interval time-in-seconds*]

```
hs-scheduler-hierarchy port port-id [interval time-in-seconds] hs-secondary-shapers  
hs-scheduler-hierarchy port port-id [interval time-in-seconds] queue-group queue-group-name  
    instance instance-id {access | network}  
hs-scheduler-hierarchy sap sap-id egress [ interval time-in-seconds ]  
hs-scheduler-hierarchy subscriber sub-ident egress [ interval time-in-seconds ]
```

## Context

[\[Tree\]](#) (show>qos hs-scheduler-hierarchy)

## Full Context

```
show qos hs-scheduler-hierarchy
```

## Description

This command displays the egress HS scheduler hierarchy for the HS scheduler policy applied to the related port. The output includes the current maximum rate and each scheduling class rate on the port. The parameters allow for the current rates for the scheduling classes for all HS secondary shapers or a specific HS secondary shaper, or for the queue rates in a specified access or network queue group instance, SAP or subscriber to be included in the output.

## Parameters

### *port-id*

Specifies the physical port ID in the slot/mda/port format.

### *shaper-name*

Displays information about the specified HS secondary name, up to 32 characters, and includes the scheduling class rates for the HS secondary shaper on the port.

### *time-in-seconds*

Displays the time interval used to calculate the rates, in seconds.

**Values** 1 to 5

### **hs-secondary-shapers**

Displays information about scheduling class rates for all HS secondary shapers on the port.

### *queue-group-name*

Displays information about the specified queue group name on the port, up to 32 characters.

### *instance-id*

Displays information about the specified queue group instance.

**Values** 1 to 65535

### *sap-id*

Displays information about the queue rates for the specified SAP, up to 64 characters, on the specified port.

**sub-ident**

Displays information about the specified subscriber, up to 64 characters, on the specified port.

**Platforms**

7750 SR-7/12/12e

**Output**

The following output is an example of HS scheduler hierarchy information.

**Output Example**

```
*A:PE# show qos hs-scheduler-hierarchy port 1/1/1 hs-secondary-shaper "default"
=====
Hs Scheduler Hierarchy Information
=====
Hs Sched Policy Name      : hs-sched-pol-1

Port Max-Rate : 0 Mbps
Hs-Sec-Shaper:default Agg-Rate : 0 Kbps

Scheduler Priority 6
  Scheduler Class 6 Rate : 0 Mbps
  Hs-Sec-Shaper:default Class 6 Rate : 0 Kbps

Scheduler Priority 5
  Scheduler Class 5 Rate : 0 Mbps
  Hs-Sec-Shaper:default Class 5 Rate : 0 Kbps

Scheduler Priority 4
  Scheduler Class 4 Rate : 0 Mbps
  Hs-Sec-Shaper:default Class 4 Rate : 0 Kbps

Scheduler Priority 3
  Scheduler Class 3 Rate : 0 Mbps
  Hs-Sec-Shaper:default Class 3 Rate : 0 Kbps

Scheduler Priority 2
  Scheduler Class 2 Rate : 0 Mbps
  Hs-Sec-Shaper:default Class 2 Rate : 0 Kbps

Scheduler Priority 1
  Scheduler Class 1 Rate : 0 Mbps
  Hs-Sec-Shaper:default Class 1 Rate : 0 Kbps
=====
*A:PE# show qos hs-scheduler-hierarchy port 1/1/1 hs-secondary-shapers
=====
Hs Scheduler Hierarchy Information
=====
Hs Sched Policy Name      : hs-sched-pol-1

Port Max-Rate : 0 Mbps

Scheduler Priority 6
  Scheduler Class 6 Rate : 0 Mbps

Scheduler Priority 5
  Scheduler Class 5 Rate : 0 Mbps
```

```
Scheduler Priority 4
  Scheduler Class 4 Rate : 0 Mbps

Scheduler Priority 3
  Scheduler Class 3 Rate : 0 Mbps

Scheduler Priority 2
  Scheduler Class 2 Rate : 0 Mbps

Scheduler Priority 1
  Scheduler Class 1 Rate : 0 Mbps
```

-----  
HS Secondary Shaper Rates  
-----

```
Hs-Sec-Shaper:default Agg-Rate : 0 Kbps
  Class 6 Rate : 0 Kbps
  Class 5 Rate : 0 Kbps
  Class 4 Rate : 0 Kbps
  Class 3 Rate : 0 Kbps
  Class 2 Rate : 0 Kbps
  Class 1 Rate : 0 Kbps
```

-----  
\*A:PE#

## 11.19 hs-scheduler-policy

### hs-scheduler-policy

#### Syntax

**hs-scheduler-policy** [*policy-name*] [**association** | **detail**]

#### Context

[\[Tree\]](#) (show>qos hs-scheduler-policy)

#### Full Context

show qos hs-scheduler-policy

#### Description

This command displays information about HS scheduler policies in the system.

#### Parameters

***policy-name***

Displays information about the specified HS scheduler policy name, up to 32 characters.

### association

Displays the entities associated with all HS scheduler policies or the specified HS pool policy.

### detail

Displays the policy information, including policy associations, of all HS scheduler policies or the specified HS scheduler policy.

## Platforms

7750 SR-7/12/12e

## Output

The following output is an example of HS scheduler policy information.

### Output Example

```
*A:PE# show qos hs-scheduler-policy

=====
HS Scheduler Policy Summary
=====
Policy Name          Description
-----
default              Default hs scheduler QoS policy
hs-sched-pol-1      (Not Specified)
-----
No. of Policies: 2
=====

*A:PE# show qos hs-scheduler-policy "default" detail

=====
HS Scheduler Policy Information
=====
Policy Name          : default
Description           : Default hs scheduler QoS policy
Max Rate             : max

-----
Scheduling Class    Rate          Group          Weight in Group
-----
1                   max          0              1
2                   max          0              1
3                   max          0              1
4                   max          0              1
5                   max          0              1
6                   max          0              1

-----
Group              Rate
-----
1                  max

-----
Port Ethernet Egress Associations
-----
1/1/2
1/1/3
1/1/4
```

```
1/1/5
1/1/6
1/1/7
1/1/8
1/1/9
1/1/10
1/2/1
-----
=====
*A:PE#
```

## 11.20 hs-secondary-shaper

### hs-secondary-shaper

#### Syntax

**hs-secondary-shaper** *secondary-shaper-name* [**statistics** | **associations**]

#### Context

[\[Tree\]](#) (show>port hs-secondary-shaper)

#### Full Context

show port hs-secondary-shaper

#### Description

This command displays port HS secondary shaper information.

#### Parameters

##### ***secondary-shaper-name***

Specifies the secondary shaper name, up to 32 characters.

##### **statistics**

Displays the statistics related to the port HS secondary shaper.

##### **association**

Displays the associations related to the port HS secondary shaper.

#### Platforms

7750 SR-7/12/12e

## 11.21 http-client

### http-client

#### Syntax

**http-client any**

**http-client** [*ip-address/prefix-length*]

**http-client** [*ipv6-address/prefix-length*]

#### Context

[\[Tree\]](#) (tools>dump>router>web-rd http-client)

#### Full Context

tools dump router web-rd http-client

#### Description

Commands in this context dump the HTTP client hash table.

#### Parameters

##### any

Specifies all HTTP clients.

##### *ip-address/prefix-length*

Dumps HTTP clients only matching the specified IP address and prefix length.

##### Values

ip-address:	a.b.c.d
prefix-length:	0 to 32

##### *ipv6-address/prefix-length*

Dumps HTTP clients only matching the specified IPv6 address and prefix length.

##### Values

ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x: [0 to FFFF]H d: [0 to 255]D
prefix-length:	0 to 128

## Platforms

All

## Output

The following output is an example of HTTP client information.

### Output Example

```
*A:Dut-F# tools dump router web-rd http-client any
=====
Webredirect HTTP Clients
=====
SvcId      IP Address      MAC Address      Connection Rate (conn/min)
-----
31         7fe1:0:0:1::    10:00:00:00:14:22  1
31         30.0.0.2        10:00:00:00:14:21  1
-----
No. of HTTP clients: 2/2
=====
```

## 11.22 http-enrich

### http-enrich

#### Syntax

http-enrich

#### Context

[\[Tree\]](#) (show>app-assure http-enrich)

#### Full Context

show application-assurance http-enrich

#### Description

This command displays HTTP enrichment static definitions.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR



## http-enrich

### Syntax

**http-enrich** *enrichment-name*

### Context

**[Tree]** (show>app-assure>group http-enrich)

### Full Context

show application-assurance group http-enrich

### Description

This command displays HTTP enrichment information.

### Parameters

***enrichment-name***

Specifies the name of the HTTP enrichment policy, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of the output for the **http-enrich** command and [Table 179: Show HTTP Enrichment Output Fields](#) describes the output fields.

#### Output Example HTTP Enrichment

```
show application-assurance group 1 http-enrich "MyTemplate"
=====
Application Assurance Group 1 HTTP Enrichment "MyTemplate"
=====
Description   : (Not Specified)
Admin Status  : Up
AQP Referenced: No

-----
Name           Field           Enabled
                Features
-----
subscriber-ip  MyField         M
subscriber-id  Sub-ID         AC
i msi          I MSI
msi sdn        MSI SDN
rat            RAT
-----
                A=anti-spoof,C=encode-cert,M=encode-md5,R=encode-rc4
-----
Group          Enriched        Not Enriched
-----
1              0               0
-----
```

```
Total          0          0
-----
=====
```

Table 179: Show HTTP Enrichment Output Fields

Label	Description
Description	HTTP header enrichment template description string
Admin Status	Administrative state of the HTTP header enrichment template
AQP Referenced	Referenced Application QoS Policy (AQP)
Name	Type of field with which HTTP traffic is enriched
Field	Header name that AA adds in the HTTP packet
Enabled features	Features configured for the specified field
Group	AA group to which the HTTP enrichment policy is applied
Enriched	Number of times the HTTP traffic for the specified AA group was enriched
Not Enriched	Number of times the HTTP traffic for the specified AA group was not enriched

## 11.23 http-error-redirect

### http-error-redirect

#### Syntax

**http-error-redirect** *redirect-name*

#### Context

[\[Tree\]](#) (show>app-assure>group http-error-redirect)

#### Full Context

show application-assurance group http-error-redirect

#### Description

Commands in this context display http-error-redirect static definitions.

## Parameters

### *redirect-name*

Specifies the HTTP error redirect policy, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **policy** command information.

### Output Example

```
*A:cses-E11>show application-assurance group 1 http-error-redirect <redirect-name>
=====
Application-Assurance Group 1 http-error-redirect <redirect-name>
=====
description      : <description-string>
template         : <template-id>
                  : text description of template
participant-id   : <string>
http-host        : <http-host-name>
error code       : <http-error-code>    custom-msg-size : <msg size>
admin status     : Up
-----
Grp:Part  Error      Redirects  Redirects Not Sent
          Code       Sent        > Custom    Out ofFile   Error
                   size  Resourcetype
-----
1:1       404         1250         52          10          10
1:56789   404         2000         952         81          01
-----
Total                3250         1004         91          1          1
=====
*A:cses-E11>
```

## http-error-redirect

## Syntax

**http-error-redirect**

## Context

[\[Tree\]](#) (show>app-assure http-error-redirect)

## Full Context

show application-assurance http-error-redirect

## Description

Commands in this context display HTTP error redirect static definitions.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 11.24 http-host-recorder

### http-host-recorder

#### Syntax

**http-host-recorder detail** [*isa mda-id/esa-vm-id*] **url** *file-url*

**http-host-recorder status** [*isa mda-id*]

**http-host-recorder top** *granularity* [**max-count** *max-count*] [*isa mda-id*]

#### Context

**[Tree]** (tools>dump>app-assure>group http-host-recorder)

#### Full Context

tools dump application-assurance group http-host-recorder

#### Description

This command configures the dump of application-assurance http-host-recorder information. The http-host-recorder is configured using debug commands.

#### Parameters

##### detail

Saves the http host values recorded by the tool into a file.

##### status

.Displays the current status of the http-host-recorder with current-time, start-time, stop-time, sample-rates, filters, buffer as well as number of bytes and flows recorded for the specified AA ISA.

##### top

.Displays by bytes or flows the top values recorded by the tool.

##### *isa mda-id /esa-vm-id*

Specifies the AA ISA.

**Values** slot 1 to 10, mda 1 to 2

##### **url** *file-url*

Specifies the URL for the file to direct the http-host-recorder output to.

##### **Values**

**local-url:** <cf-flash-id>/[<file-path>]

200 chars max, including cf-flash-id

	directory length 99 chars max each
<b>remote-url:</b>	[[ftp://  tftp://]<login>:<pswd>@<remote-locn>/][<file-path>]
	255 chars max
	directory length 99 chars max each
<b>remote-locn:</b>	<hostname>   <ipv4-address>   <ipv6-address> ]
ipv4-address	a.b.c.d
ipv6-address	x:x:x:x:x:x[-interface] x:x:x:x:x:d.d.d.d[-interface] x - [0..FFFF]H d - [0..255]D
interface	32 chars max, for link local addresses
cflash-id	flash slot ID

**granularity**

Specifies if the output is sorted by bytes or flows.

**Values** bytes, flows

**max-count** *max-count*

Specifies the maximum count of flows to display.

**Values** 1 to 25

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 11.25 http-notification

### http-notification

**Syntax**

http-notification

**Context**

[\[Tree\]](#) (show>app-assure http-notification)

## Full Context

show application-assurance http-notification

## Description

This command displays HTTP notification static definitions.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## http-notification

## Syntax

**http-notification** *http-notification-name* [**summary**]

## Context

[\[Tree\]](#) (show>app-assure>group http-notification)

## Full Context

show application-assurance group http-notification

## Description

This command displays information about the configured http-notification policy with associated raw statistics:

- Template: Template Id in use
- Script URL: URL address of the script used in the notification message
- Admin Status: Up / Down
- AQP Referenced: Yes/No
- Notified: Total number of notifications sent
- Notification criteria selection not matched: Number of HTTP request not matching the selection criteria for in browser notification

## Parameters

### ***http-notification-name***

Displays the name of the http-notification policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **http-notification** command information.

### Output Example

```
A:7750# show application-assurance group 1 http-notification "in-browser-notification"
=====
Application Assurance Group 1 HTTP Notification "in-browser-notification"
=====
Description   : IBN Demo ALU Message
Template      : 1 - Javascript-url with subId and optional Http-Url-Param
Script URL    : http://10.1.1.1/In-Browser-Notification/script.js
Admin Status  : Up
AQP Ref      : Yes
-----
                                         Notified      Notification Selection
                                         Criteria Not Matched
-----
1:1                                         3                0
1:2                                         2                0
1:3                                         0                0
1:4                                         0                0
1:5                                         0                0
-----
Total                                         5                0
=====
```

## 11.26 http-redirect

### http-redirect

#### Syntax

http-redirect

#### Context

[\[Tree\]](#) (show>app-assure http-redirect)

#### Full Context

show application-assurance http-redirect

#### Description

This command displays HTTP redirect static definitions.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## http-redirect

### Syntax

**http-redirect** *redirect-name* [**detail**]

### Context

[\[Tree\]](#) (show>app-assure>group http-redirect)

### Full Context

show application-assurance group http-redirect

### Description

This command displays application assurance http-redirect statistics and status information.

### Parameters

#### *redirect-name*

Specifies the name of the http-redirect policy.

#### **detail**

Displays detailed information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following table describes the show command output fields:

Table 180: Show HTTP Redirect Output Fields

Label	Description
Template	Specifies HTTP redirect template id information. Each HTTP redirect template returns a specific HTTP redirect message such as HTTP 302 or Javascript and can optionally use macro substitution.
Redirect URL	Specifies the address the subscriber will be redirected to.
Captive Redirect	Specifies Yes if captive redirect is used and No if captive redirect is not used.
Redirect HTTPS	Specifies Yes if redirect https is used and No if redirect https is not used.
VLAN ID	Specifies the AA interface VLAN id used for captive redirect.



Label	Description
Admin Status	Specifies the administrative status (Up/Down) of the HTTP redirect policy.
AQP Ref	Specifies Yes if the HTTP redirect policy is referenced in AQP, and No if it is not.

### Output Example

```
*A:7750# show application-assurance group 1 http-redirect "redirect-portal"

=====
Application Assurance Group 1 HTTP Redirect redirect-portal
=====
Description      : (Not Specified)
Template         : 5
                 : Redirect supporting macro substitution using HTTP 302
Redirect URL     : http://172.16.70.100/Redirect/redirect-portal.html?RequestedURL=$URL
Captive Redirect : Yes
  Redirect HTTPS : Yes
  VLAN ID       : 20
Admin Status    : Up
AQP Ref        : Yes

-----
Summary Statistics
-----
Grp:Part          Redirects Sent      Client Resets Sent      Redirects Not Sent
-----
1:1               0                   0                       0
1:2               0                   0                       0
1:3               0                   0                       0
-----
Total             0                   0                       0
=====
```

## http-redirect

### Syntax

**http-redirect** [detail]

### Context

[\[Tree\]](#) (tools>dump>filter>resources http-redirect)

### Full Context

tools dump filter resources http-redirect

### Description

This command displays the number of unique and total installed HTTP redirect destinations per system.

## Parameters

### detail

Displays the number of unique and total installed HTTP redirect destinations per system, together with a list of unique HTTP redirect destinations.

## Platforms

All

## Output

The following output is an example of filter resource HTTP redirect information.

### Output Example

```
A:SR0S# /tools dump filter resources http-redirect detail
=====
Unique http-redirects
=====
Num   Not emb.   Emb. Override URL
-----
  1     1         0 no ovr. http://portal_1.com
-----
  2    10         1 no ovr. http://portal_2.com
-----
  3     1         0 no ovr. http://portal_3.com
-----
  4     1         0 no ovr. http://portal_4.com
-----
  5     1         0 no ovr. http://portal_5.com
=====
Http-redirects
=====
Name                               Count
-----
Unique redirects                    5
Not embedded redirects              14
Embedded redirects                  1
All redirects                        15
=====
```

## 11.27 http-redirect-policy

### http-redirect-policy

#### Syntax

`http-redirect-policy` *name*

#### Context

[\[Tree\]](#) (show>subscr-mgmt http-redirect-policy)

### Full Context

```
show subscriber-mgmt http-redirect-policy
```

### Description

This command displays HTTP redirect policy information.

### Parameters

*name*

Specifies the HTTP redirect policy name, up to 32 characters.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 11.28 hunt

```
hunt
```

### Syntax

```
hunt [brief]
```

### Context

[\[Tree\]](#) (show>router>bgp>routes hunt)

### Full Context

```
show router bgp routes hunt
```

### Description

This command displays detailed information about the BGP routes, including information about the advertised routes (RIB-OUT).

**hunt** is a parameter of the **show router bgp routes** command. Depending on the parameters that are used to issue the command, the output can display a narrower or wider set of routes, including routes belonging to other address families. See the **show router bgp routes** command description for syntax variants, parameter descriptions and values, and output examples.

### Parameters

**brief**

Displays summary information about the BGP routes.

### Platforms

All

## 11.29 hw-agg-shaper-scheduler-policy

### hw-agg-shaper-scheduler-policy

#### Syntax

**hw-agg-shaper-scheduler-policy** [*hw-agg-shaper-scheduler-policy-name*] [ **association**]

#### Context

[\[Tree\]](#) (show>qos hw-agg-shaper-scheduler-policy)

#### Full Context

show qos hw-agg-shaper-scheduler-policy

#### Description

This command displays hardware aggregate shaper scheduler policy information.

#### Parameters

##### ***hw-agg-shaper-scheduler-policy-name***

Specifies the hardware aggregate shaper scheduler policy name, up to 64 characters.

##### **association**

Displays hardware aggregate shaper scheduler policy associations.

#### Platforms

7750 SR-1, 7750 SR-s

## 12 i Commands

### 12.1 i-vpls

#### i-vpls

#### Syntax

i-vpls

#### Context

[\[Tree\]](#) (show>service>id i-vpls)

#### Full Context

show service id i-vpls

#### Description

Displays I-VPLS services associated with the B-VPLS service. This command only applies when the service is a B-VPLS.

#### Platforms

All

#### Output

The following output is an example of service I-VPLS information.

#### Output Example

```
*A:SetupCLI# show service id 2002 i-vpls
=====
Related iVpls services for bVpls service 2002
=====
iVpls SvcId      Oper ISID      Admin      Oper
-----
2001             122            Up          Down
-----
Number of Entries : 1
-----
*A:alcag1-R6#
*A:term17>show>service>id# i-vpls
=====
Related iVpls services for bVpls service 2000
=====
iVpls SvcId      Oper ISID      Admin      Oper
-----
2100             2100          Up          Up
```

```
2110          123          Up          Up
-----
Number of Entries : 2
-----
*A:SetupCLI#
```

## 12.2 icmp

### icmp

#### Syntax

icmp

#### Context

[\[Tree\]](#) (show>router icmp)

#### Full Context

show router icmp

#### Description

This command displays Internet Control Message Protocol version 4 (ICMP) statistics. ICMP generates error messages (for example, ICMP destination unreachable messages) to report errors during processing and other diagnostic functions.

#### Platforms

All

#### Output

The following output is an example of router ICMP statistics, and [Table 181: ICMP Fields](#) describes the fields.

#### Output Example

```
*A:cses-V93# show router icmp
=====
Global ICMP Stats
=====
Received
Total          : 0          Error          : 0
Destination Unreachable : 0          Redirect       : 0
Echo Request   : 0          Echo Reply     : 0
TTL Expired    : 0          Source Quench  : 0
Timestamp Request : 0        Timestamp Reply : 0
Address Mask Request : 0        Address Mask Reply : 0
Parameter Problem : 0
-----
Sent
Total          : 0          Error          : 0
Destination Unreachable : 0          Redirect       : 0
```

```

Echo Request      : 0          Echo Reply       : 0
TTL Expired      : 0          Source Quench    : 0
Timestamp Request : 0          Timestamp Reply  : 0
Address Mask Request : 0      Address Mask Reply : 0
Parameter Problem : 0
=====
*A:cses-V93# show router icmp interface "sample1"
=====
Interface ICMP Stats
=====
Interface "sample1"
-----
Received
Total              : 0          Error            : 0
Destination Unreachable : 0      Redirect         : 0
Echo Request       : 0          Echo Reply       : 0
TTL Expired       : 0          Source Quench    : 0
Timestamp Request  : 0          Timestamp Reply  : 0
Address Mask Request : 0      Address Mask Reply : 0
Parameter Problem  : 0          Discarded        : 0
-----
Sent
Total              : 0          Error            : 0
Destination Unreachable : 0      Redirect         : 0
Echo Request       : 0          Echo Reply       : 0
TTL Expired       : 0          Source Quench    : 0
Timestamp Request  : 0          Timestamp Reply  : 0
Address Mask Request : 0      Address Mask Reply : 0
Parameter Problem  : 0          Discarded        : 0
=====
    
```

Table 181: ICMP Fields

Label	Description
Total	The total number of all messages
Error	The number of error messages
Destination Unreachable	The number of message that did not reach the destination
Redirect	The number of packet redirects
Echo Request	The number of echo requests
Echo Reply	The number of echo replies
TTL Expired	The number of messages that exceeded the time to live threshold
Source Quench	The number of source quench requests (deprecated)
Timestamp Request	The number of timestamp requests (deprecated); ICMP timestamp requests are counted and dropped on ingress
Timestamp Reply	The number of timestamp replies (deprecated); sending ICMP timestamp replies is not supported, so this counter will always be 0

Label	Description
Address Mask Request	The number of address mask requests (deprecated)
Address Mask Reply	The number of address mask replies (deprecated)
Parameter Problem	The number of packets with a parameter problem in the IP header
Discarded	The number of messages that exceed the configured interface ICMP rate or have an expired TTL

## icmp

### Syntax

**icmp**

### Context

[\[Tree\]](#) (show>test-oam icmp)

### Full Context

show test-oam icmp

### Description

Commands in this context show ping-templates or ping-template detail.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## icmp

### Syntax

**icmp all**

**icmp global**

**icmp interface** *interface-name*

### Context

[\[Tree\]](#) (clear>router icmp)

### Full Context

clear router icmp



## Description

This command clears ICMP statistics.

## Parameters

**all**

Clears all statistics.

**global**

Clears global router statistics.

***interface-name***

Clears ICMP statistics for the specified interface, up to 32 characters.

## Platforms

All

icmp

## Syntax

icmp

## Context

[\[Tree\]](#) (tools>perform>test-oam icmp)

## Full Context

tools perform test-oam icmp

## Description

Commands in this context perform test OAM ICMP functions.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 12.3 icmp-redirect-route

icmp-redirect-route

## Syntax

icmp-redirect-route {all | ip-address}

## Context

[\[Tree\]](#) (clear>router icmp-redirect-route)

## Full Context

```
clear router icmp-redirect-route
```

## Description

This command deletes routes created as a result of ICMP redirects received on the management interface.

## Parameters

### **all**

Clears all routes.

### **ip-address**

Clears the routes associated with the specified IP address.

**Values** a.b.c.d

## Platforms

All

## 12.4 icmp-stats

### icmp-stats

## Syntax

```
icmp-stats
```

```
icmp-stats interface {ip-int-name | ip-address | ipv6-address}
```

## Context

[\[Tree\]](#) (tools>dump>router icmp-stats)

## Full Context

```
tools dump router icmp-stats
```

## Description

Commands in this context dump ICMP statistics information.

## Parameters

### **ip-int-name**

Specifies the interface information associated with the specified IP interface name, up to 32 characters.

### **ip-address**

Specifies the IPv4 address.

**Values** a.b.c.d

### ***ipv6-address***

Specifies the IPv6 address.

**Values** x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x: [0 to FFFF]H  
d: [0 to 255]D

## **Platforms**

All

## **Output**

The following output is an example of ICMP statistics information.

### **Output Example**

```
*A:Dut-C>config>router>isis# /tools dump router icmp-stats
    icmpInMsgs 18
    icmpInErrors 0
  icmpInDestUnreachs 0
    icmpInTimeExcds 0
    icmpInParmProbs 0
    icmpInSrcQuenchs 0
    icmpInRedirects 0
    icmpInEchos 7
    icmpInEchoReps 11
    icmpInTimestamps 0
  icmpInTimestampReps 0
  icmpInUnsupportedType 0
    icmpInAddrMasks 0
  icmpInAddrMaskReps 0
    icmpOutMsgs 18
    icmpOutErrors 0
  icmpOutDestUnreachs 0
    icmpOutTimeExcds 0
    icmpOutParmProbs 0
    icmpOutSrcQuenchs 0
    icmpOutRedirects 0
    icmpOutEchos 11
    icmpOutEchoReps 7
    icmpOutTimestamps 0
  icmpOutTimestampReps 0
    icmpOutAddrMasks 0
  icmpOutAddrMaskReps 0
    icmpOutDiscards 0

*A:Dut-C>config>router>isis# /tools dump router icmp-stats interface "system"
    icmpInMsgs 0
    icmpInErrors 0
  icmpInDestUnreachs 0
    icmpInTimeExcds 0
    icmpInParmProbs 0
    icmpInSrcQuenchs 0
    icmpInRedirects 0
    icmpInEchos 0
```

```
    icmpInEchoReps 0
    icmpInTimestamps 0
    icmpInTimestampReps 0
    icmpInUnsupportedType 0
    icmpInAddrMasks 0
    icmpInAddrMaskReps 0
    icmpOutMsgs 0
    icmpOutErrors 0
    icmpOutDestUnreachs 0
    icmpOutTimeExcds 0
    icmpOutParmProbs 0
    icmpOutSrcQuenchs 0
    icmpOutRedirects 0
    icmpOutEchos 0
    icmpOutEchoReps 0
    icmpOutTimestamps 0
    icmpOutTimestampReps 0
    icmpOutAddrMasks 0
    icmpOutAddrMaskReps 0
    icmpOutDiscards 0

*A:Dut-C>config>router>isis# /tools dump router icmp-stats interface 1.1.1.3
    icmpInMsgs 0
    icmpInErrors 0
    icmpInDestUnreachs 0
    icmpInTimeExcds 0
    icmpInParmProbs 0
    icmpInSrcQuenchs 0
    icmpInRedirects 0
    icmpInEchos 0
    icmpInEchoReps 0
    icmpInTimestamps 0
    icmpInTimestampReps 0
    icmpInUnsupportedType 0
    icmpInAddrMasks 0
    icmpInAddrMaskReps 0
    icmpOutMsgs 0
    icmpOutErrors 0
    icmpOutDestUnreachs 0
    icmpOutTimeExcds 0
    icmpOutParmProbs 0
    icmpOutSrcQuenchs 0
    icmpOutRedirects 0
    icmpOutEchos 0
    icmpOutEchoReps 0
    icmpOutTimestamps 0
    icmpOutTimestampReps 0
    icmpOutAddrMasks 0
    icmpOutAddrMaskReps 0

*A:Dut-C>config>router>isis# /tools dump router icmp-stats interface 3fe::1.1.1.3

    icmpInMsgs 0
    icmpInErrors 0
    icmpInDestUnreachs 0
    icmpInTimeExcds 0
    icmpInParmProbs 0
    icmpInSrcQuenchs 0
    icmpInRedirects 0
    icmpInEchos 0
    icmpInEchoReps 0
    icmpInTimestamps 0
    icmpInTimestampReps 0
    icmpInUnsupportedType 0
```

```
icmpInAddrMasks 0
icmpInAddrMaskReps 0
  icmpOutMsgs 0
    icmpOutErrors 0
icmpOutDestUnreachs 0
  icmpOutTimeExcds 0
    icmpOutParmProbs 0
      icmpOutSrcQuenchs 0
        icmpOutRedirects 0
          icmpOutEchos 0
            icmpOutEchoReps 0
              icmpOutTimestamps 0
                icmpOutTimestampReps 0
                  icmpOutAddrMasks 0
                    icmpOutAddrMaskReps 0
                      icmpOutDiscards 0
*A:Dut-C>config>router>isis#
```

## 12.5 icmp6

### icmp6

#### Syntax

icmp6

#### Context

[\[Tree\]](#) (show>router icmp6)

#### Full Context

show router icmp6

#### Description

This command displays Internet Control Message Protocol Version 6 (ICMPv6) statistics. ICMP generates error messages (for example, ICMP destination unreachable messages) to report errors during processing and other diagnostic functions. ICMPv6 packets can be used in the neighbor discovery protocol and path MTU discovery.

#### Platforms

All

#### Output

The following output is an example of router ICMPv6 statistics, and [Table 182: ICMPv6 Fields](#) describes the fields.

#### Output Example

```
A:SR-3# show router icmp6
=====
Global ICMPv6 Stats
```

```

=====
Received
Total                : 0          Errors                : 0
Destination Unreachable : 0          Redirects             : 0
Time Exceeded         : 0          Pkt Too Big          : 0
Echo Request          : 0          Echo Reply            : 0
Router Solicits       : 0          Router Advertisements : 0
Neighbor Solicits     : 0          Neighbor Advertisements : 0
Parameter Problem     : 0
-----
Sent
Total                : 2          Errors                : 0
Destination Unreachable : 0          Redirects             : 0
Time Exceeded         : 0          Pkt Too Big          : 0
Echo Request          : 0          Echo Reply            : 0
Router Solicits       : 0          Router Advertisements : 0
Neighbor Solicits     : 2          Neighbor Advertisements : 0
Parameter Problem     : 0          Discarded             : 0
=====
A:SR-3#
A:SR-3# show router icmp6 interface "sample1"
=====
Interface ICMPv6 Stats
=====
Interface "sample1"
-----
Received
Total                : 0          Errors                : 0
Destination Unreachable : 0          Redirects             : 0
Time Exceeded         : 0          Pkt Too Big          : 0
Echo Request          : 0          Echo Reply            : 0
Router Solicits       : 0          Router Advertisements : 0
Neighbor Solicits     : 0          Neighbor Advertisements : 0
Parameter Problem     : 0
-----
Sent
Total                : 2          Errors                : 0
Destination Unreachable : 0          Redirects             : 0
Time Exceeded         : 0          Pkt Too Big          : 0
Echo Request          : 0          Echo Reply            : 0
Router Solicits       : 0          Router Advertisements : 0
Neighbor Solicits     : 2          Neighbor Advertisements : 0
Parameter Problem     : 0          Discarded             : 0
=====
A:SR-3#
    
```

Table 182: ICMPv6 Fields

Label	Description
Total	The total number of all messages
Destination Unreachable	The number of message that did not reach the destination
Time Exceeded	The number of messages that exceeded the time threshold
Echo Request	The number of echo requests
Router Solicits	The number of times the local router was solicited

Label	Description
Neighbor Solicits	The number of times the neighbor router was solicited
Errors	The number of error messages
Redirects	The number of packet redirects
Pkt Too big	The number of packets that exceed appropriate size
Echo Reply	The number of echo replies
Router Advertisements	The number of times the router advertised its location
Neighbor Advertisements	The number of times the neighbor router advertised its location
Parameter Problem	The number of packets with a parameter problem in the IP header
Discarded	The number of ICMPv6 messages that exceed the configured interface ICMPv6 rate or have an expired TTL

## icmp6

### Syntax

**icmp6 all**

**icmp6 global**

**icmp6 interface** *interface-name*

### Context

[\[Tree\]](#) (clear>router icmp6)

### Full Context

clear router icmp6

### Description

This command clears ICMPv6 statistics.

### Parameters

**all**

Clears all statistics.

**global**

Clears global router statistics.

***interface-name***

Clears ICMPv6 statistics for the specified interface, up to 32 characters.

**Platforms**

All

## 12.6 icmp6-redirect-route

### icmp6-redirect-route

**Syntax**

**icmp6-redirect-route** {**all** | *ipv6-address*}

**Context**

[\[Tree\]](#) (clear>router icmp6-redirect-route)

**Full Context**

clear router icmp6-redirect-route

**Description**

This command deletes routes created as a result of ICMPv6 redirects received on the management interface.

**Parameters**

**all**

Clears all routes.

***ipv6-address***

Clears the routes associated with the specified IPv6 address.

**Values** x:x:x:x:x:x:x (eight 16-bit pieces)

**Platforms**

All



## 12.7 icport

icport

### Syntax

**icport** [**down**] [**degraded**]

### Context

[\[Tree\]](#) (show>sfm icport)

### Full Context

show sfm icport

### Description

This command displays SFM interconnect port information.

### Parameters

#### **down**

Displays interconnect ports that are not operational.

#### **degraded**

Displays interconnect ports that are associated with fabric degradation.

### Platforms

7950 XRS

## 12.8 id

id

### Syntax

**id** *service-id*

**id** *service-id* **mac-notification**

**id** *service-id* **macsec**

**id** *service-id* **mvrp vlan** [**detail**]

**id** *service-id* **vpls-group** [*vpls-group-id*]

**id** *service-id* **vpls-group** *vpls-group-id* **non-template-saps**

## Context

**[Tree]** (show>service id)

## Full Context

show service id

## Description

This command displays information for a particular service ID.

## Platforms

All

id

## Syntax

*id service-id*

## Context

**[Tree]** (clear>service id)

**[Tree]** (clear>service>statistics id)

## Full Context

clear service id

clear service statistics id

## Description

This command clears the identification for a specific service.

## Parameters

*service-id*

The ID that uniquely identifies a service.

**Values** service-id: 1 to 214748364  
svc-name: A string up to 64 characters.

## Platforms

All

id

### Syntax

`id service-id`

### Context

[\[Tree\]](#) (tools>perform>service id)

[\[Tree\]](#) (tools>dump>service id)

### Full Context

tools perform service id

tools dump service id

### Description

This command specifies a service for which service debugging tools are enabled.

### Parameters

*service-id*

Specifies the service ID.

**Values** 1 to 2148278386, *svc-name*: 64 chars max

### Platforms

All

id

### Syntax

`id service-id`

### Context

[\[Tree\]](#) (clear>video id)

### Full Context

clear video id

### Description

This command clears video information pertaining to the specified service ID.

## Parameters

**service *service-id***

Specifies the service ID to clear.

**Values** 1 to 2148278317  
svc-name — a string up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s

id

## Syntax

id *service-id*

## Context

[\[Tree\]](#) (clear>video>statistics id)

## Full Context

clear video statistics id

## Description

This command clears video statistics for a particular service.

## Parameters

**service *service-id***

Specifies the service ID to clear statistics.

**Values** 1 to 2148278317  
svc-name — a string up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s

id

## Syntax

id *service-id*

## Context

[\[Tree\]](#) (monitor>service id)

## Full Context

monitor service id

## Description

This command displays statistics for a specific service, specified by the *service-id*, at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the *service-id*. The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *service-id*

Specifies the unique service identification number which identifies the service in the service domain.

## Platforms

All

## 12.9 idle-only-msap

### idle-only-msap

## Syntax

**idle-only-msap** *msap-policy-name*

## Context

[\[Tree\]](#) (clear>subscr-mgmt idle-only-msap)

## Full Context

clear subscriber-mgmt idle-only-msap

## Description

This command removes all idle MSAPs associated with the MSAP policy. This command only removes idle MSAPs without active subscribers. This command is considered safer than the **clear>subscr-mgmt>msap-policy** *msap-policy-name* **idle-only** command because in that command, the parameter **idle-only** is optional. Not specifying **idle-only** deletes MSAPs with active subscribers.

### Parameters

***msap-policy-name***

Specifies the MSAP policy for which all associated idle MSAPs are cleared.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 12.10 if-attribute

### if-attribute

#### Syntax

**if-attribute**

#### Context

[\[Tree\]](#) (show>router if-attribute)

#### Full Context

show router if-attribute

#### Description

Commands in this context display interface attribute related information.

#### Platforms

All

## 12.11 if-policy

### if-policy

#### Syntax

**if-policy** [*if-policy-name*]

**if-policy** *if-policy-name* **users**

#### Context

[\[Tree\]](#) (show>router>mcac if-policy)

## Full Context

```
show router mcac if-policy
```

## Description

This command displays information about MCAC interface policies. Display options are:

- no parameters: displays summary of configured MCAC interface policies in the system
- *if-policy-name*: if an existing interface policy name is specified, the configuration and operational details for the specified policy are displayed
- *if-policy-name users*: if **user** options is specified with the existing MCAC interface policy, then all instances where a given MCAC interface policy is used are listed

## Platforms

All

## Output

The following output is an example of MCAC interface information.

### Output Example

```
*A:bkvm34>show>router>mcac# if-policy
=====
Multicast CAC If-Policies
=====
If-Policy          Description
-----
if_poll            test policy
if_poll2
-----
If-Policies : 2
=====

*A:bkvm34>show>router>mcac# if-policy "if_poll"
=====
Multicast CAC If-Policy
=====
If-Policy      : if_poll
Description    : test policy
Admin state    : enabled
Unconstrained BW : 100000
Pre rsvd mand BW : 10000
In use mand BW  : 0
In use opt BW   : 0
Avail mand BW   : 10000
Avail opt BW    : 90000
=====

*A:bkvm34>show>router>mcac# if-policy "if_poll" users
=====
Multicast CAC If-Plcy if_poll Application Interfaces
=====
Application      Service ID  Interface
-----
IGMP              1          redir_itf1
IGMP              1          gi_1_1
```

```
MLD          1          redir_itf1
MLD          1          gi_1_1
IGMP         2          to_B2
MLD          2          to_B2
PIM          3          to_B3
-----
Application Interfaces : 7
=====
Multicast CAC If-Plcy if_poll Application Ports
=====
Application      Service ID   Sap/Sdp
-----
IGMP-Snpg        4           Sap:lag-1:4
IGMP-Snpg        5           Sdp:22:5
IGMP-Snpg        6           Sdp:23:6
IGMP-Snpg        7           Sap:lag-1:7
-----
Application Ports : 4
=====
```

## 12.12 igmp

### igmp

#### Syntax

**igmp** [*subscriber sub-ident-string*][*detail*]

#### Context

[\[Tree\]](#) (show>service>active-subscribers igmp)

#### Full Context

show service active-subscribers igmp

#### Description

This command displays active subscriber IGMP information.

#### Parameters

##### *sub-ident-string*

Displays the subscriber ID of the active subscriber, up to 32 characters.

##### *detail*

Displays detailed IGMP information for the specified subscriber ID.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## Output

The following output is an example of IGMP information for active subscribers.

### Output Example

```
*A:eng-BNG-2# show service active-subscribers igmp
=====
Active Subscribers
=====
Subscriber
IGMP-Policy
HostAddr                GrpItf                NumGroups
-----
user_1
igmp-policy-01
192.168.0.14            grp-int-01            1
-----
Number of Subscribers : 1
=====
```

## igmp

### Syntax

**igmp**

### Context

[\[Tree\]](#) (clear>router igmp)

### Full Context

clear router igmp

### Description

Commands in this context clear and reset IGMP entities.

### Platforms

All

## igmp

### Syntax

**igmp**

### Context

[\[Tree\]](#) (show>router igmp)

### Full Context

show router igmp

## Description

Commands in this context display IGMP related information.

## Platforms

All

## 12.13 igmp-policy

### igmp-policy

## Syntax

**igmp-policy**

**igmp-policy** *policy-name* **association**

**igmp-policy** *policy-name*

## Context

[\[Tree\]](#) (show>subscr-mgmt igmp-policy)

## Full Context

show subscriber-mgmt igmp-policy

## Description

This command displays IGMP policy information and only applies to the 7750 SR.

## Parameters

***policy-name***

Specifies an existing IGMP policy.

**association**

Displays the information configured with the IGMP policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management IGMP policy information.

### Output Example

```
*B:Dut-C# show subscriber-mgmt igmp-policy
```

```
=====
```

```
IGMP Policies
```

```
=====
```

```
IGMP Policy
```

```

    Import Policy          Admin Version
    Description
    Num Subscribers      Host Max Groups
    Fast Leave
    -----
    poll
    2                    3
    fast-leave          0
    pol2
    0                    3
    fast-leave          0
    =====
    *B:Dut-C#

    *B:Dut-C# show subscriber-mgmt igmp-policy "poll"
    =====
    IGMP Policy poll
    =====
    Import Policy          :
    Admin Version          : 3
    Num Subscribers        : 2
    Host Max Group         : 0
    Fast Leave             : yes
    =====
    *B:Dut-C#

    *B:Dut-C# show subscriber-mgmt igmp-policy "poll" association
    =====
    IGMP Policy poll Associations
    =====
    sub_1
    sub_2
    -----
    No. of subscriber(s): 2
    =====
    *B:Dut-C#
    
```

**Table 183: IGMP Policy Field Descriptions** describes subscriber management IGMP policy output fields.

*Table 183: IGMP Policy Field Descriptions*

Field	Description
IGMP Policy	The IGMP policy name
Import Policy	The import policy name to filter packets
Admin Version	The version of IGMP which is running for this host
Description	The user-provided description of this IGMP policy
Num Subscribers	The number of subscribers
Host Max Groups	The maximum number of groups for which IGMP can have local receiver information based on received IGMP reports for this host

Field	Description
Fast Leave	Whether fast leave is allowed for this host
Pol1	Information about the first reported IGMP policy
Pol2	Information about the second reported IGMP policy
Associations	The subscribers associated with the policy

## 12.14 igmp-snooping

### igmp-snooping

#### Syntax

**igmp-snooping**

#### Context

[\[Tree\]](#) (show>service>id igmp-snooping)

#### Full Context

show service id igmp-snooping

#### Description

This command displays the Internet Group Management Protocol (IGMP) snooping information.

#### Platforms

All

### igmp-snooping

#### Syntax

**igmp-snooping**

#### Context

[\[Tree\]](#) (clear>service>id igmp-snooping)

#### Full Context

clear service id igmp-snooping

#### Description

Commands in this context clear IGMP snooping-related data.

## Platforms

All

## 12.15 ignore-sap-port-state

### ignore-sap-port-state

#### Syntax

**ignore-sap-port-state**

#### Context

**[Tree]** (tools>dump>service>id>interface ignore-sap-port-state)

#### Full Context

tools dump service id interface ignore-sap-port-state

#### Description

This command displays all service interfaces that have accepted an **ignore-sap-port-state start** command.

Run this command without a *service-id* to display a complete list of interfaces that have accepted an **ignore-sap-port-state start** command. The command can be run within a specific *service-id* context for a list of all interfaces for the specified service that have accepted the **ignore-sap-port-state start** command. The *ip-int-name* parameter may be optionally configured to display results only for the specified interface. If the command is run against a specific interface that has not accepted an **ignore-sap-port-state start** command, the display command will display a message indicating that no action has been started for the interface.

## Platforms

All

## Output

The following output is an example of **ignore-sap-port-state** information.

### Output Example

```
tools dump service ignore-sap-port-state
=====
Interface Marked Ignore SAP Operational State
=====
SvcId      Interface-Name      Adm/Opr(v4/v6)  Type  Port/SapId
          IP-Address
-----
1001      ies-1001            Up/(Up/Down)    IES   1/1/1:1001.
          192.168.3.30/24    n/a
-----
Number of entries: 1
```

---

## ignore-sap-port-state

### Syntax

**ignore-sap-port-state** {start | stop}

### Context

[\[Tree\]](#) (tools>perform>service>id>interface ignore-sap-port-state)

### Full Context

tools perform service id interface ignore-sap-port-state

### Description

This command enables bypassing of the Ethernet operational state check, which would otherwise be part of the Ethernet SAP operational state checking function. All other checks are performed as normal.

This command may be run against IES and VPRN service IP interfaces directly configured over an Ethernet SAP. When the command is run against an operational Ethernet SAP, the command enters a pending state, waiting for a non-operational change. Network interfaces have no SAP association and do not support this feature. When using **subscriber-interface** and **group-interface**, the command is only applicable to the **group-interface** associated with the SAP. R-VPLS does not have Ethernet SAPs directly configured under the interface, and is not supported.

This command is meant to allow service validation and reachability testing when a physical Ethernet port has not been connected. The command may be run for a non-operational SAP that is cabled. However, if the SAP transitions to an operational state, ingress and egress packet processing may still occur.

This command configuration does not survive a system restart.

### Parameters

#### start

Enables port state bypass mode for the interface. If the Ethernet port SAP is already operational, there is no immediate effect of the command, and the Ignore Port state under the **show service id all** command will show "pending". However, if the interface Ethernet port transitions to a non-operational state, the command then bypasses this port state and executes the remainder of the operational checks, and the flag for the Ignore Port state transitions to "active". When this command is in effect, the SAP represents the state of the SAP ignoring the port state.

#### stop

Disables port state bypass mode for the interface attached to the SAP.

### Platforms

All

## 12.16 ike-exchange-failure-rate

### ike-exchange-failure-rate

#### Syntax

**ike-exchange-failure-rate** *esa-vm* *esa-id/vm-id*

**ike-exchange-failure-rate** *gateway* *name*

**ike-exchange-failure-rate** *reason* *reason* *gateway* *name* [**show-oid**]

**ike-exchange-failure-rate** *isa* *mda*

**ike-exchange-failure-rate** *reason* *reason* *isa* *mda* [**show-oid**]

**ike-exchange-failure-rate** *reason* *reason* [**show-oid**] *esa-vm* *esa-id/vm-id*

**ike-exchange-failure-rate** *system*

**ike-exchange-failure-rate** *reason* *reason* *system* [**show-oid**]

**ike-exchange-failure-rate** *tunnel-group* *tunnel-group-id* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*] [**current**]

**ike-exchange-failure-rate** *reason* *reason* *tunnel-group* *tunnel-group-id* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*] [**current**] [**show-oid**]

#### Context

**[Tree]** (show>isa>stats>ipsec-stats ike-exchange-failure-rate)

#### Full Context

show isa statistics ipsec-stats ike-exchange-failure-rate

#### Description

This command displays IKE exchange failure rate statistics of the specified scope.

This command supports following scopes:

- per system
- per ISA
- per tunnel group
- per IPsec GW

The rate includes the following reasons:

- authentication failure
- non-proposal chosen
- internal address assignment failure
- invalid traffic selector (TS)
- invalid key exchange (KE)

- DPD timeout
- Others

The start time value indicates the starting timestamp of measurement. The sampling duration indicates the duration of the measurement.

If a record has non-zero value, the system also shows the timestamp and local or remote tunnel endpoint for the first and last occurrence in the sampling duration.

## Parameters

### *name*

Displays information about the specified IPsec GW name up to 32 characters in length.

### *tunnel-type*

Displays information about the specified the tunnel type.

**Values** all, sl2l, dl2l, ra

### *reason*

Displays information for the cause of the failure.

**Values** auth-failure, non-proposal-chosen, internal-addr-assignment-failure, invalid-ts, invalid-ke, dpd-timeout, other

### *system*

Displays information about the system.

### *mda*

Displays information about the specified ISA ID.

**Values** slot/mda

### *tunnel-group-id*

Displays information about the specified tunnel group ID.

**Values** 1 to 16

### *name*

Displays information about the specified IPsec GW name up to 32 characters in length.

### *count*

Displays information for the number of statistics intervals to be displayed (starting with the most recent).

**Values** 1 to 96

### *minutes*

Displays information about the specified period covered by the statistics to be displayed (starting with the most recent).

**Values** 1 to 1440



**current**

Displays information about the current statistic value. The values of count and minutes are ignored by the system once this parameter is specified.

**show-oid**

Displays information about the Object Identifier (OID) of the current statistical value.

**esa-vm**

Displays the ID of the configured ESA and ESA VM.

<b>Values</b>	esa-vm:	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of the **show isa stats ipsec-stats ike-exchange-failure-rate** command.

**Output Example**

```
show>isa>stats>ipsec-stats# ike-exchange-failure-rate gateway "rw2"
=====
STATISTICS FOR IPSEC GATEWAY "RW2"
=====
INDEX      VALUE      INFO      START TIME      SAMPLING DURATION
FAILURE TM
-----
IKE EXCHANGE FAILURE RATE (FAILURES/SEC) - AUTHENTICATION FAILURE
1 (CURRENT) 0.00      2017/07/31 23:00:00 MIN 4 SEC 51
2          0.02      2017/07/31 22:52:15 MIN 7 SEC 40
  FST: 2017/07/31 22:54:30 RMT:10.1.1.100:[500]
        LCL:172.16.200.1:[500]
  LST: 2017/07/31 22:54:33 RMT:10.1.1.100:[500]
        LCL:172.16.200.1:[500]
IKE EXCHANGE FAILURE RATE (FAILURES/SEC) - NON-PROPOSAL CHOSEN
1 (CURRENT) 0.00      2017/07/31 23:00:00 MIN 4 SEC 51
2          0.00      2017/07/31 22:52:15 MIN 7 SEC 40
IKE EXCHANGE FAILURE RATE (FAILURES/SEC) - ADDRESS ASSIGNMENT FAILURE
1 (CURRENT) 0.00      2017/07/31 23:00:00 MIN 4 SEC 51
2          0.00      2017/07/31 22:52:15 MIN 7 SEC 40
IKE EXCHANGE FAILURE RATE (FAILURES/SEC) - INVALID TRAFFIC SELECTOR
1 (CURRENT) 0.00      2017/07/31 23:00:00 MIN 4 SEC 51
2          0.00      2017/07/31 22:52:15 MIN 7 SEC 40
IKE EXCHANGE FAILURE RATE (FAILURES/SEC) - INVALID KEY EXCHANGE
1 (CURRENT) 0.00      2017/07/31 23:00:00 MIN 4 SEC 51
2          0.00      2017/07/31 22:52:15 MIN 7 SEC 40
IKE EXCHANGE FAILURE RATE (FAILURES/SEC) - DPD TIMEOUT
1 (CURRENT) 0.00      2017/07/31 23:00:00 MIN 4 SEC 51
2          0.00      2017/07/31 22:52:15 MIN 7 SEC 40
IKE EXCHANGE FAILURE RATE (FAILURES/SEC) - OTHER FAILURE REASONS
1 (CURRENT) 0.00      2017/07/31 23:00:00 MIN 4 SEC 51
2          0.00      2017/07/31 22:52:15 MIN 7 SEC 40
```

```
-----  
NO. OF ENTRIES: 18  
=====
```

## 12.17 ike-initiate

### ike-initiate

#### Syntax

```
ike-initiate tunnel-group-id ipsec-group-id  
ike-initiate tunnel-name ipsec-tunnel-name
```

#### Context

[\[Tree\]](#) (tools>perform>ipsec ike-initiate)

#### Full Context

```
tools perform ipsec ike-initiate
```

#### Description

This command initiates tunnel setup for the specified LAN-to-LAN tunnel or for all static LAN-to-LAN tunnels in the specified tunnel group. This command initiates tunnel setup regardless of the configuration of the **ipsec-responder-only** command under the specified tunnel group.

The command only initiates tunnel setup when the tunnel group is in the MC-IPsec master state, or if MC-IPsec is not enabled for the tunnel group. If MC-IPsec is enabled and the tunnel group is not in the master state, the system will abort tunnel setup if MIMP goes down or if mastership changes during the tunnel setup.

Operationally up tunnels are not affected by this command. The system will not try to initiate a tunnel setup if the tunnel's operation flags are not clear.

The system does not automatically retry tunnel setup if a tunnel setup fails.

#### Parameters

##### *ipsec-group-id*

Specifies the ID of the tunnel group where all static LAN-to-LAN tunnels are initiated.

##### *ipsec-tunnel-name*

Specifies the name of the IPsec tunnel to be initiated.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.18 ike-policy

### ike-policy

#### Syntax

**ike-policy**

**ike-policy** *ike-policy-id*

**ike-policy** *ike-policy-id* **association** [all]

#### Context

[Tree] (show>ipsec ike-policy)

#### Full Context

show ipsec ike-policy

#### Description

This command displays content for the specified **ike-policy**.

#### Parameters

##### *ike-policy-id*

Specifies the ID of an IKE policy entry.

**Values** 1 to 2048

##### *association*

Lists the **ipsec-tunnel**, **ipsec-gw** and dynamic tunnel using the specified **ike-policy**.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the **show ipsec ike-policy** command.

#### Output Example

```
*A:ALA-48# show ipsec ike-policy 10
=====
IPsec IKE policy Configuration Detail
=====
Policy Id       : 10                IKE Mode       : main
DH Group       : Group2            Auth Method    : psk
PFS            : False             PFS DH Group   : Group2
Auth Algorithm  : Sha1              Encr Algorithm  : Aes128
ISAKMP Lifetime : 86400            IPsec Lifetime : 3600
NAT Traversal  : Disabled
NAT-T Keep Alive : 0                Behind NAT Only : True
```

```
DPD : Disabled
DPD Interval : 30          DPD Max Retries : 3
Description : (Not Specified)
=====
*A:ALA-48#
```

## 12.19 ike-stats

### ike-stats

#### Syntax

**ike-stats** *esa-vm* *esa-id/vm-id*

**ike-stats** *gateway* *name* [**dynamic-tunnel** *ip-address:port*]

**ike-stats** *isa* *mda*

**ike-stats** *ipsec-tunnel-name*

#### Context

[\[Tree\]](#) (tools>dump>ipsec>stats ike-stats)

#### Full Context

tools dump ipsec stats ike-stats

#### Description

This command dumps various internal IKE statistics for the specified scope:

- per ISA
- per static LAN-to-LAN tunnel
- per dynamic tunnel

The start time indicates the time of the last reset.

#### Parameters

##### *name*

Dumps information about the name of the IPsec GW, up to 32 characters.

##### *ip-address:port*

Dumps information about the IP address and port of the peer for dynamic tunneling.

##### *mda*

Dumps information about the specified ISA.

**Values** slot/mda

##### *ipsec-tunnel-name*

Dumps the name of the static LAN-to-LAN tunnel, up to 32 characters.

### **esa-vm**

Displays the ID of the configured ESA and ESA VM.

#### **Values**

esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

### **Platforms**

All

## ike-stats

### **Syntax**

**ike-stats esa-vm** *esa-id/vm-id*

**ike-stats gateway** *name* [**dynamic-tunnel** *ip-address:port*]

**ike-stats isa** *mda*

**ike-stats ipsec-tunnel-name**

### **Context**

[\[Tree\]](#) (clear>ipsec>stats ike-stats)

### **Full Context**

clear ipsec stats ike-stats

### **Description**

This command clears various internal IKE statistics for the specified scope:

- per ISA
- per static LAN-to-LAN tunnel
- per dynamic tunnel

The start time indicates the time of the last reset.

### **Parameters**

#### ***name***

Clears information about the name of the IPsec GW up to 32 characters.

#### ***ip-address:port***

Clears information about the IP address and port of the peer for dynamic tunneling.

#### ***mda***

Clears information about the specified ISA.

**Values** slot/mda

***ipsec-tunnel-name***

Clears the name of the static LAN-to-LAN tunnel up to 32 characters.

***esa-vm***

Displays the ID of the configured ESA and ESA VM.

<b>Values</b>	esa-vm:	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.20 ike-transform

### ike-transform

**Syntax**

**ike-transform** [*ike-transform-id*]

**Context**

[\[Tree\]](#) (show>ipsec ike-transform)

**Full Context**

show ipsec ike-transform

**Description**

This command displays information for the specified IKE transform instance. Information for all IKE transform instances is displayed when an *ike-transform-id* is not specified.

**Parameters**

***ike-transform-id***

Specifies an existing IKE transform instance

**Values** 1 to 4096

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of IKE transform information.

### Output Example

```
Node# show ipsec ike-transform
=====
IKE Transforms
=====
ID      Diffie-Hellman  Authentication  Encryption  ISAKMP
      Group          Algorithm       Algorithm    Lifetime
-----
100    14              sha1           aes128      86400
-----
No. of IKE Transforms: 1
=====
```

## 12.21 ikev2-msg-drop

### ikev2-msg-drop

#### Syntax

**ikev2-msg-drop message-type** *message-type* [ **show-oid**] **esa-vm** *esa-id/vm-id*

**ikev2-msg-drop message-type** *message-type* **isa** *mda* [**show-oid**]

#### Context

[\[Tree\]](#) (show>isa>stats>ipsec-stats ikev2-msg-drop)

#### Full Context

show isa statistics ipsec-stats ikev2-msg-drop

#### Description

This command displays the early drop counter for received IKEv2 messages on the specified ISA. These counters reflect the number of packets dropped early in the process when ISA is congested.

#### Parameters

##### *message-type*

Specifies the exchange type of the packet to display.

**Values** ike-sa-init, ike-auth, create-child-and-info

##### *mda*

Specifies the slot and MDA in the format *slot/mda*.

**Values** *slot* — 1 to 10  
*mda* — 1 or 2

**show-oid**

Displays the SNMP object ID of the counter.

**esa-vm**

Displays the ID of the configured ESA and ESA VM.

Values	esa-vm:	esa-id/vm-id	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of the **ikev2-msg-drop message-type** command.

**Output Example**

```
show>isa>stats>ipsec-stats# ikev2-msg-drop message-type ike-sa-init isa 1/2 show-oid
-----
Current Statistic Info
-----
OID: tmnxIPsecIsaHistStatsValue32.1.1.2.700.1
-----
=====
Statistics for ISA 1/2
=====
Index          Value                Start Time          Sampling Duration
-----
Number of IKE-SA-INIT exchange packet drops
1 (current)    0                    2018/03/06 21:28:37 min 3 sec 59
-----
No. of entries: 1
```

**12.22 ilm**

**ilm**

**Syntax**

ilm

**Context**

[Tree] (tools>dump>router>mpls ilm)

**Full Context**

tools dump router mpls ilm



### Description

This command dumps ILM information for MPLS.

### Platforms

All

## 12.23 inactive-peers

### inactive-peers

#### Syntax

**inactive-peers**

#### Context

[\[Tree\]](#) (clear>system>ptp inactive-peers)

#### Full Context

clear system ptp inactive-peers

#### Description

This command clears inactive peer information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 12.24 inband-tunnel

### inband-tunnel

#### Syntax

**inband-tunnel** [**type** {**rx** | **tx**}] [**prefix** *prefix*] [**tunnel-id** *tunnel-id*]

**inband-tunnel** [**prefix** *prefix*] [**tunnel-id** *tunnel-id*] **leaf**

#### Context

[\[Tree\]](#) (show>router>bier inband-tunnel)

#### Full Context

show router bier inband-tunnel

## Description

This command shows the BIER tunnels.

## Parameters

### type

Specifies the type of tunnel.

**Values** tx, rx

### prefix

Specifies the BFR prefix of the tunnel in IP address form.

### tunnel-id

Specifies the tunnel ID.

**Values** 0 to 4294967295

### leaf

Specifies that the tunnel leafs are displayed.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of a BIER in-band tunnel configuration. [Table 184: BIER In-band Tunnel Fields](#) provides BIER in-band tunnel descriptions.

### Output Example

```
*A:Dut-B# /show router bier inband-tunnel
=====
BIER Tunnels
=====
Tunnel-id      Type      Oper      No. Of Leaves
BFR Prefix    Bfr-ID    Mpls Label Sub-domain
-----
73748         rx        In service  0
10.20.1.4     4         0          0
=====
BIER Tunnel entries : 1
=====
```

Table 184: BIER In-band Tunnel Fields

Label	Description
Tunnel-id	The tunnel ID
Type	The tunnel type - Tx or Rx
Oper	The operational state of the tunnel
No. Of Leaves	The number of leafs in the tunnel

Label	Description
BFR Prefix	The BFR prefix of the tunnel
Bfr-IFD	The BFR ID of the tunnel
MPLS Label	The MPLS Label of the tunnel
Sub-domain	The sub-domain associated with the tunnel

## 12.25 incl-mcast

### incl-mcast

#### Syntax

```
incl-mcast [hunt | detail] [rd rd] [originator-ip originator-ip] [next-hop next-hop] [community comm-id] [tag tag] [aspath-regex reg-exp]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes>evpn incl-mcast)

#### Full Context

```
show router bgp routes evpn incl-mcast
```

#### Description

This command displays BGP-EVPN inclusive multicast routes.

#### Parameters

##### hunt

Displays entries for the specified route.

##### detail

Displays detailed information.

##### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

##### originator-ip

Specifies the IPv4 or IPv6 originator address.

**Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x: [0 to FFFF]H

d: [0 to 255]D

### **next-hop**

Specifies the IPv4 or IPv6 BGP next-hop address.

#### **Values**

ipv4-address: a.b.c.d

ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x: [0 to FFFF]H

d: [0 to 255]D

### **comm-id**

Specifies community ID, up to 72 characters.

**Values** [as-num:comm-val | ext-comm | well-known-comm]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type*:{ *ip-address:comm-val1* | *as-number1:comm-val2* | *as-number2:comm-val1* }  
where:
  - *as-number1* — 0 to 65535
  - *comm-val1* — 0 to 65535
  - **type** — target, origin
  - *ip-address* — a.b.c.d
  - *comm-val2* — 0 to 4294967295
  - *as-number2* — 0 to 4294967295
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** |

### **tag**

Specifies the inclusive multicast route tag.

**Values** 0to 4294967295 | MAX-ET

### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

## Platforms

All

## 12.26 information

### information

#### Syntax

**information**

#### Context

[\[Tree\]](#) (show>system information)

#### Full Context

show system information

#### Description

This command displays general system information including basic system, SNMP server, last boot and DNS client information.

#### Platforms

All

#### Output

The following output is an example of system information. [Table 185: System Information Field Descriptions](#) describes the output fields.

#### Output example

```
A:admin@node-2# show system information

=====
System Information
=====
System Name           : Dut-B
System Type           : 7750 SR-7s
Chassis Topology     : Standalone
System Version        : C-0.0.I7584
Crypto Module Version : SRCM 5.3.1.4
System Contact        :
System Location       :
System Coordinates    :
System Active Slot    : B
System Up Time        : 12 days, 04:01:43.17 (hr:min:sec)
System Up Time (64-bit) : 12 days, 04:01:43.18 (hr:min:sec)

Configuration Mode Cfg : mixed
Configuration Mode Oper: mixed
Last Mode Changed      : 2023/12/06 12:32:16 Duration: 0d 00:00:00
```

```
SNMP Port : 161
SNMP Engine ID : 0000197f0000dec0ff000000
SNMP Engine Boots : 10
SNMP Max Message Size : 1500
SNMP Max Bulk Duration : N/A
SNMP Admin State : Enabled
SNMP Oper State : Enabled
SNMP Index Boot Status : Not Persistent
SNMP Sync State : OK

Tel/Tel6/SSH/FTP Admin : Enabled/Disabled/Enabled/Enabled
Tel/Tel6/SSH/FTP Oper : Up/Down/Up/Up

BOF Source : cf3:
Image Source : primary
Config Source : primary
Last Booted Config File: ftp://*:*[192.168.192.135]/./images/dut-b.cfg
Last Boot Cfg Version : N/A
Last Boot Config Header: N/A
Last Boot Index Version: N/A
Last Boot Index Header : N/A
Last Saved Config : ftp://*:*[192.168.192.135]/kanvmlm3/results/2023/Month
                    _11/Nov_29/10:34:17.peter.roberts/device_logs/saved_co
                    nfigs/Dut-B.finished.cfg
Time Last Saved : 2023/11/29 10:49:54
Changes Since Last Save: Yes
User Last Modified : admin
Time Last Modified : 2023/12/06 12:32:16
Max Cfg/BOF Backup Rev : 5
Cfg-OK Script : ftp://*:*[192.168.192.135]/./images/env.cfg
Cfg-OK Script Status : success
Cfg-Fail Script : N/A
Cfg-Fail Script Status : not used

IPv4 autoconfiguration : Disabled
IPv6 autoconfiguration : Disabled
Management IPv4 Addr : 192.168.239.192/18
Management IPv6 Addr : 3000::c0a8:efc0/114
Primary DNS Server : 138.120.252.55
Secondary DNS Server : 138.120.252.57
Tertiary DNS Server : N/A
DNS Domain : labs.ca.alcatel-lucent.com
DNS Resolve Preference : ipv4-only
DNSSEC AD Validation : False
DNSSEC Response Control: drop
BOF Static Routes :
  To Next Hop
  128.251.10.0/24 192.168.192.134
  135.0.0.0/8 192.168.192.134
  138.0.0.0/8 192.168.192.134
  172.20.0.0/14 192.168.192.134
  172.31.0.0/16 192.168.192.134

ICMP Vendor Enhancement: Disabled
EFM OAM Grace Tx Enable: False
EFM OAM Dying Gasp Rst : Disabled

System Reboot Required : Yes
```

```
Reason(s)           : FP Resource Allocation Change
Last Reboot Reason  : admin
Admin Reboot User   : admin
Admin Reboot Router : management
Admin Reboot Address : 192.168.192.134
Admin Reboot Time   : 2023/07/28 15:36:45 UTC
```

Table 185: System Information Field Descriptions

Label	Description
System Name	The configured system name
System Type	The system is administratively configured to function as a Nokia SR OS Ethernet Service Switch (ESS) or not.
Chassis Topology	Indicates the inter-chassis topology mode in which the system is operating. It indicates how multiple chassis are arranged and operate together as a single system. A value of 'standalone' indicates that the system is composed of a single physical router chassis. A value of 'extended' (for a 7950 XRS based system) indicates that two router chassis are connected together in a 'back-to-back' topology with no additional switch fabric chassis. An extended chassis topology is composed of two XRS-20 chassis and is also known as an XRS-40 system.
System Version	The software product release version number for the software image currently running
Crypto Module Version	Version of the SR OS cryptographic module
System Contact	A text string that describes the system contact information
System Location	A text string that describes the system location
System Coordinates	A text string that describes the system coordinates
System Active Slot	Slot of the active CPM
System Up Time	The system uptime as a 32-bit value from the RFC 2578 sys UpTime MIB object. This value rolls over every 497 days.
System Up Time (64-bit)	The system uptime as a 64-bit value that does not roll over
Configuration Mode Cfg	Configured setting of the management interface configuration mode. The configuration mode affects the management interfaces (such as classic CLI and model-driven interfaces) that can be used to configure the router.
Configuration Mode Oper	Current management interface configuration mode that is operational in the router. The configuration mode affects the

Label	Description
	management interfaces (such as classic CLI and model-driven interfaces) that can be used to configure the router.
Last Mode Changed	The date and time at which the operational management interface configuration mode last changed
SNMP Port	The port number used by this node to receive SNMP request messages and to send replies
SNMP Engine ID	The SNMP engineID to uniquely identify the SNMPv3 node
SNMP Engine Boots	The number of times the SNMP engine has rebooted with the current SNMP Engine ID
SNMP Max Message Size	The maximum SNMP packet size generated by this node
SNMP Max Bulk Duration	The maximum duration to process before bulk responses are returned
SNMP Admin State	Enabled — SNMP is administratively enabled and running. Disabled — SNMP is administratively shutdown and not running.
SNMP Oper State	Enabled — SNMP is operationally enabled. Disabled — SNMP is operationally disabled.
SNMP Failure Reason	Additional information about general failure of the SNMP engine to be ready for normal operation
SNMP Index Boot Status	Persistent — System indices are saved between reboots. Not Persistent — System indices are not saved between reboots.
SNMP Sync State	The SNMP persistent indices synchronization state. <ul style="list-style-type: none"> <li>• Mismatch — There is a mismatch between the primary and standby CPM.</li> <li>• N/A — The standby CPM is not inserted or is offline, or indices are not persistent.</li> <li>• OK — The standby CPM is present and synchronized.</li> </ul>
Tel/Tel6/SSH/FTP Admin	Displays the administrative state of the Telnet, SSH, and FTP sessions
Tel/Tel6/SSH/FTP Oper	Displays the operational state of the Telnet, SSH, and FTP sessions
BOF Source	The location of the BOF
Image Source	Primary — Indicates that the directory location for runtime image file was loaded from the primary source.



Label	Description
	<p>Secondary — Indicates that the directory location for runtime image file was loaded from the secondary source.</p> <p>Tertiary — Indicates that the directory location for runtime image file was loaded from the tertiary source.</p>
Config Source	<p>Primary — Indicates that the directory location for configuration file was loaded from the primary source.</p> <p>Secondary — Indicates that the directory location for configuration file was loaded from the secondary source.</p> <p>Tertiary — Indicates that the directory location for configuration file was loaded from the tertiary source.</p>
Last Booted Config File	The URL and filename of the last loaded configuration file
Last Boot Cfg Version	The date and time of the last boot
Last Boot Config Header	The header information, such as image version, date built, date generated
Last Boot Index Version	The version of the persistence index file read when this card was last rebooted
Last Boot Index Header	The header of the persistence index file read when this card was last rebooted.
Last Saved Config	The location and filename of the last saved configuration file
Time Last Saved	The date and time of the last time configuration file was saved
Changes Since Last Save	<p>Yes — There are unsaved configuration file changes.</p> <p>No — There are no unsaved configuration file changes.</p>
Max Cfg/BOF Backup Rev	The maximum number of backup revisions maintained for a configuration file. This value also applies to the number of revisions maintained for the BOF file.
Cfg-OK Script	URL — The location and name of the CLI script file executed following successful completion of the bootup configuration file execution.
Cfg-OK Script Status	<p>Successful/Failed — The results from the execution of the CLI script file specified in the Cfg-OK Script location.</p> <p>Not used — No CLI script file was executed.</p>
Cfg-Fail Script	<p>URL — The location and name of the CLI script file executed following a failed bootup configuration file execution.</p> <p>Not used — No CLI script file was executed.</p>

Label	Description
Cfg-Fail Script Status	Successful/Failed — The results from the execution of the CLI script file specified in the Cfg-Fail Script location. Not used — No CLI script file was executed.
IPv4 autoconfiguration	Indicates whether the IPv4 DHCP-based router autoconfigure functionality is enabled or disabled
IPv6 autoconfiguration	Indicates whether the IPv6 DHCP-based router autoconfigure functionality is enabled or disabled
Management IP Addr	The management IPv4 address and mask
Management IP Addr	The management IPv6 address and mask
Primary DNS Server	The IP address of the primary DNS server
Secondary DNS Server	The IP address of the secondary DNS server
Tertiary DNS Server	The IP address of the tertiary DNS server
DNS Domain	The DNS domain name of the node
DNS Resolve Preference	ipv4-only — Dns-names are queried for A-records only. ipv6-first — Dns-server is queried for AAAA-records first and a successful reply is not received, the dns-server is queried for A-records.
DNSSEC AD Validation	Indicates whether the presence of the AD-bit is validated in responses from DNS servers
DNSSEC Response Control	fall-through — Permit DNS responses that do not pass DNSSEC validation fail — Reject DNS Responses that do not pass DNSSEC validation
BOF Static Routes	To — The static route destination. Next Hop — The next hop IP address used to reach the destination. Metric — Displays the priority of this static route versus other static routes. None — No static routes are configured.
ICMP Vendor Enhancement	Indicates whether vendor specific extensions to ICMP are enabled or disabled

Label	Description
Eth QinQ Untagged SAP	False — The <b>new-qinq-untagged-sap</b> flag is disabled. True — The <b>new-qinq-untagged-sap</b> flag is enabled.
EFM OAM Grace Tx Enable	True — Sending of EFM OAM grace period messages is enabled. False — Sending of EFM OAM grace period messages is disabled.
EFM OAM Dying Gasp Rst	Indicates whether EFM OAM dying gasp messages on reset are enabled or disabled
System Reboot Required	Indicates if a configuration change has been made that requires an operator-driven reboot to fully active
Reason(s)	Indicates the configuration change reason(s) that set the System Reboot Required to true
Last Reboot Reason	Indicates the reason that the system was last rebooted. <ul style="list-style-type: none"> <li>admin – Administrative reboot (for example, <b>admin reboot</b> command) from any management interface (for example, CLI, SNMP, and so on)</li> <li>other – The system was rebooted for other unspecified reasons (for example, power cycle, system crash).</li> </ul>
Admin Reboot User	Indicates the name of the user who initiated the reboot. Value of "CRON/EHS", indicate that the system was rebooted by a script. This is only displayed if the "Last System Reboot Reason" is "admin".
Admin Reboot Router	Indicates the source router for the management session used to reboot the router. If the session was via the console or bluetooth ports, the router shall be "Base" and the address shall be "0.0.0.0". This is only displayed if the "Last System Reboot Reason" is "admin".
Admin Reboot Address	Indicates the IP address for the management session used to reboot the router. If the session was via the console or bluetooth ports, the router is "Base" and the address is "0.0.0.0". This is only displayed if the "Last System Reboot Reason" is "admin".
Admin Reboot Time	Indicates the date and time that the reboot was initiated. Format is based on settings at time of the reboot. This is only displayed if the "Last System Reboot Reason" is "admin".

## information

### Syntax information

## Context

[\[Tree\]](#) (show>log>event-handling information)

## Full Context

show log event-handling information

## Description

This command displays general information about EHS, as well as handler and trigger statistics.

## Platforms

All

## Output

The following output is an example of log event handling information.

### Output Example

```

=====
Event Handling System - Event Trigger Statistics
=====
Application Name
Event Id          Total    Success  ErrNoEntry  AdmStatus
-----
OAM
2001              0        0         0            0
-----
Entry FilMatch  Trigger  Debounce  FilFail  ErrAdmSta  ErrFilter  ErrHandler
-----
1    0          0         0         0         0          0          0
10   0          0         0         0         0          0          0
-----
SUM  0          0         0         0         0          0          0
-----
Application Name
Event Id          Total    Success  ErrNoEntry  AdmStatus
-----
OAM
2004              0        0         0            0
-----
Entry FilMatch  Trigger  Debounce  FilFail  ErrAdmSta  ErrFilter  ErrHandler
-----
1    0          0         0         0         0          0          0
-----
SUM  0          0         0         0         0          0          0
=====
EVENTS PROCESSED          Total    Success  ErrNoEntry  AdmStatus
-----
                                0        0         0            0
=====
Event Handling System - Event Handler Statistics
=====
Handler          Total    Success  ErrNoEntry  AdmStatus
-----
my-handler-1     0        0         0            0
-----
Entry Id        Launch  MinDelay  ErrLaunch  ErrAdmSta
-----
    
```

1	0	0	0	0	
SUMMARY	0	0	0	0	
HANDLERS SUMMARY		Total	Success	ErrNoEntry	AdmStatus
		0	0	0	0

## information

### Syntax

**information**

### Context

[\[Tree\]](#) (clear>log>event-handling information)

### Full Context

clear log event-handling information

### Description

This command clears handler statistics in the **show log event-handling information** output.

### Platforms

All

## 12.27 ingress-label

## ingress-label

### Syntax

**ingress-label** *ingress-label1* [*ingress-label2*]

### Context

[\[Tree\]](#) (show>service ingress-label)

### Full Context

show service ingress-label

### Description

This command displays service information using the range of ingress labels.

If only the mandatory *ingress-label1* parameter is specified, only services using the specified label are displayed.

If both *ingress-label1* and *ingress-label2* parameters are specified, the services using the range of labels *X* where *ingress-label1* <= *X* <= *ingress-label2* are displayed.

Use the **show router vprn-service-id ldp bindings** command to display dynamic labels.

## Parameters

### *ingress-label1*

Displays the starting ingress label value for which to display services using the label range. If only *ingress-label1* is specified, services only using *ingress-label1* are displayed.

**Values** 0, 2048 to 131071

### *ingress-label2*

Displays the ending ingress label value for which to display services using the label range.

**Values** 2048 to 131071

**Default** The *ingress-label1* value.

## Platforms

All

## Output

The following output is an example of service ingress label information.

### Output Example

```
A:ALA-12# show service ingress label 0
=====
Martini Service Labels
=====
Svc Id      Sdp Id      Type I.Lbl      E.Lbl
-----
1           10:1        Mesh 0         0
1           20:1        Mesh 0         0
1           30:1        Mesh 0         0
1           50:1        Mesh 0         0
1           100:1       Mesh 0         0
1           101:1       Mesh 0         0
1           102:1       Mesh 0         0
1           103:1       Mesh 0         0
1           104:1       Mesh 0         0
1           105:1       Mesh 0         0
1           106:1       Mesh 0         0
1           107:1       Mesh 0         0
1           108:1       Mesh 0         0
1           300:1       Mesh 0         0
1           301:1       Mesh 0         0
1           302:1       Mesh 0         0
1           400:1       Mesh 0         0
1           500:2       Spok 131070     2001
1           501:1       Mesh 131069     2000
100        300:100     Spok 0         0
200        301:200     Spok 0         0
```

```

300      302:300      Spok 0      0
400      400:400      Spok 0      0
-----
Number of Bindings Found : 23
-----
A:ALA-12#
    
```

Table 186: Service Ingress Label Field Descriptions describes show service ingress label output fields.

Table 186: Service Ingress Label Field Descriptions

Label	Description
Svc ID	The value that identifies a specific service
SDP Id	The SDP identifier
Type	Indicates whether the SDP is a spoke or a mesh
I.Lbl	The ingress label used by the far-end device to send packets to this device in this service by the SDP
E.Lbl	The egress label used by this device to send packets to the far-end device in this service by the SDP
Number of Bindings Found	The number of SDP bindings within the label range specified

## ingress-label

### Syntax

**ingress-label** *start-label* [*end-label*]

### Context

[\[Tree\]](#) (show>service ingress-label)

### Full Context

show service ingress-label

### Description

Display services using the range of ingress labels.

If only the mandatory *start-label* parameter is specified, only services using the specified label are displayed.

If both *start-label* and *end-label* parameters are specified, the services using the range of labels X where *start-label* <= X <= *end-label* are displayed.

Use the **show router ldp bindings** command to display dynamic labels.

## Parameters

### *start-label*

The starting ingress label value for the label range. If only *start-label* is specified, services only using *start-label* are displayed.

**Values** 0, 2048 to 131071

### *end-label*

The ending ingress label value for the label range

**Default** The *start-label* value.

**Values** 2049 to 131071

## Platforms

All

## Output

The following output is an example of service ingress label information.

### Output Example

```
*A:ALA-12# show service ingress-label 0
=====
Martini Service Labels
=====
Svc Id      Sdp Id      Type I.Lbl      E.Lbl
-----
1           10:1       Mesh 0          0
1           20:1       Mesh 0          0
1           30:1       Mesh 0          0
1           50:1       Mesh 0          0
1           100:1      Mesh 0          0
1           101:1      Mesh 0          0
1           102:1      Mesh 0          0
1           103:1      Mesh 0          0
1           104:1      Mesh 0          0
1           105:1      Mesh 0          0
1           106:1      Mesh 0          0
1           107:1      Mesh 0          0
1           108:1      Mesh 0          0
1           300:1     Mesh 0          0
1           301:1     Mesh 0          0
1           302:1     Mesh 0          0
1           400:1     Mesh 0          0
100        300:100   Spok 0          0
200        301:200   Spok 0          0
300        302:300   Spok 0          0
400        400:400   Spok 0          0
-----
Number of Bindings Found : 21
-----
*A:ALA-12#
```

Table 187: Show Service Ingress-Label Fields describes show service ingress-label output fields.



Table 187: Show Service Ingress-Label Fields

Label	Description
Svc ID	The service identifier.
SDP Id	The SDP identifier.
Type	Indicates whether the SDP is spoke or mesh.
I.Lbl	The ingress label used by the far-end device to send packets to this device in this service by the SDP.
E.Lbl	The egress label used by this device to send packets to the far-end device in this service by the SDP.
Number of Bindings Found	The number of SDP bindings within the label range specified.

## ingress-label

### Syntax

**ingress-label** *start-label* [*end-label*]

### Context

[\[Tree\]](#) (show>service ingress-label)

### Full Context

show service ingress-label

### Description

This command displays services using the range of ingress labels. If only the mandatory *start-label* parameter is specified, only services using the specified label are displayed.

If both *start-label* and *end-label* parameters are specified, the services using the range of labels X where *start-label* <= X <= *end-label* are displayed.

For 7750 only, use the **show router vprn-service-id ldp bindings** command to display dynamic labels.

### Parameters

#### *start-label*

The starting ingress label value for which to display services using the label range. If only *start-label* is specified, services only using *start-label* are displayed.

**Values** 0, 2048 to 131071

#### *end-label*

The ending ingress label value for which to display services using the label range.

**Values** 2049 to 131071

**Default** The *start-label* value.

## Platforms

All

## Output

The following output is an example of ingress label information, and [Table 188: Show Service Ingress-Label Field Descriptions](#) describes the output fields.

### Output Example

```
*A:ALA-12# show service ingress-label 0
=====
Martini Service Labels
=====
Svc Id      Sdp Id          Type I.Lbl      E.Lbl
-----
1           10:1            Mesh 0         0
1           20:1            Mesh 0         0
1           30:1            Mesh 0         0
1           50:1            Mesh 0         0
1           100:1           Mesh 0         0
1           101:1           Mesh 0         0
1           102:1           Mesh 0         0
1           103:1           Mesh 0         0
1           104:1           Mesh 0         0
1           105:1           Mesh 0         0
1           106:1           Mesh 0         0
1           107:1           Mesh 0         0
1           108:1           Mesh 0         0
1           300:1           Mesh 0         0
1           301:1           Mesh 0         0
1           302:1           Mesh 0         0
1           400:1           Mesh 0         0
1           500:2           Spok 131070    2001
1           501:1           Mesh 131069    2000
100         300:100         Spok 0         0
200         301:200         Spok 0         0
300         302:300         Spok 0         0
400         400:400         Spok 0         0
-----
Number of Bindings Found : 23
-----
*A:ALA-12#
```

Table 188: Show Service Ingress-Label Field Descriptions

Label	Description
Svc ID	The service identifier.
SDP Id	The SDP identifier.
Type	Indicates whether the SDP is spoke or mesh.

Label	Description
I.Lbl	The ingress label used by the far-end device to send packets to this device in this service by the SDP.
E.Lbl	The egress label used by this device to send packets to the far-end device in this service by the SDP.
Number of Bindings Found	The number of SDP bindings within the label range specified.

## ingress-label

### Syntax

**ingress-label** *start-label* [*end-label*]

### Context

[\[Tree\]](#) (show>service ingress-label)

### Full Context

show service ingress-label

### Description

Display services using the range of ingress labels.

If only the mandatory *start-label* parameter is specified, only services using the specified label are displayed.

If both *start-label* and *end-label* parameters are specified, the services using the range of labels X where *start-label* <= X <= *end-label* are displayed.

Use the **show router vprn-service-id ldp bindings** command to display dynamic labels.

### Parameters

#### *start-label*

The starting ingress label value for which to display services using the label range. If only *start-label* is specified, services only using *start-label* are displayed.

**Values** 0, 2048 to 131071

#### *end-label*

The ending ingress label value for which to display services using the label range.

**Values** 2048 to 131071

**Default** The *start-label* value.

## Platforms

All

## Output

The following output is an example of show service ingress label information, and [Table 189: Show Service Ingress-Label Field Descriptions](#) describes the output fields.

### Output Example

```
*A:ALA-12# show service ingress-label 0
=====
Martini Service Labels
=====
Svc Id      Sdp Id      Type I.Lbl      E.Lbl
-----
1           10:1        Mesh 0         0
1           20:1        Mesh 0         0
1           30:1        Mesh 0         0
1           50:1        Mesh 0         0
1           100:1       Mesh 0         0
1           101:1       Mesh 0         0
1           102:1       Mesh 0         0
1           103:1       Mesh 0         0
1           104:1       Mesh 0         0
1           105:1       Mesh 0         0
1           106:1       Mesh 0         0
1           107:1       Mesh 0         0
1           108:1       Mesh 0         0
1           300:1       Mesh 0         0
1           301:1       Mesh 0         0
1           302:1       Mesh 0         0
1           400:1       Mesh 0         0
100         300:100    Spok 0         0
200         301:200    Spok 0         0
300         302:300    Spok 0         0
400         400:400    Spok 0         0
-----
Number of Bindings Found : 21
-----
*A:ALA-12#
```

Table 189: Show Service Ingress-Label Field Descriptions

Label	Description
Svc ID	The service identifier.
SDP Id	The SDP identifier.
Type	Indicates whether the SDP is a spoke or a mesh.
I.Lbl	The ingress label used by the far-end device to send packets to this device in this service by the SDP.
E.Lbl	The egress label used by this device to send packets to the far-end device in this service by the SDP.

Label	Description
Number of bindings found	The number of SDP bindings within the label range specified.

## 12.28 ingress-statistics

### ingress-statistics

#### Syntax

```
ingress-statistics color color [end-point {ipv4-address | ipv6-address}]
```

#### Context

[\[Tree\]](#) (show>router>segment-routing>sr-policies ingress-statistics)

#### Full Context

```
show router segment-routing sr-policies ingress-statistics
```

#### Description

This command displays the ingress traffic statistics of the SR policy specified by its color and end-point.

#### Parameters

##### *color*

Displays the color that is configured for this SR policy.

**Values** 0 to 4294967295

##### *ipv4-address* | *ipv6-address*

Displays the IPv4 or IPv6 address expressed in dotted decimal notation.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

#### Platforms

All

## Output

The following output is an example of ingress traffic statistics of the SR policy, and [Table 190: Show Ingress Statistics Field Descriptions](#) describes the output fields.

### Output Example Show Router Segment Route Policy Ingress Statistics

```
show router segment-routing sr-policies ingress-statistics color 10 end-point 3ffe::a14:102
=====
SR-Policies Ingress Statistics
=====

Ingress Statistics:

Color           : 10                Endpoint Addr   : 3ffe::a14:102
TunnelId        : 917520           BSID            : 100008
Pkt Count       : 3015            Octet Count     : 301500
=====
```

Table 190: Show Ingress Statistics Field Descriptions

Label	Description
Color	Indicates the color of the SR policy.
Endpoint Addr	Indicates the end-point address of the SR policy.
TunnelId	Indicates the tunnel identifier of the SR policy.
BSID	Indicates the binding SID value.
Pkt Count	Indicates the count of packets for the corresponding segment list.
Octet Count	Indicates the count of octets for the corresponding segment list.

## ingress-statistics

### Syntax

**ingress-statistics** color *color* [end-point {*ipv4-address* | *ipv6-address*}]

### Context

[\[Tree\]](#) (clear>router>segment-routing>sr-policies ingress-statistics)

### Full Context

clear router segment-routing sr-policies ingress-statistics

### Description

This command clears the ingress traffic statistics of the SR policy specified by its color and end-point.

## Parameters

### *color*

Displays the color that is configured for this SR policy.

**Values** 0 to 4294967295

### *ipv4-address* | *ipv6-address*

Displays the IPv4 or IPv6 address expressed in dotted decimal notation.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

## Platforms

All

## ingress-statistics

## Syntax

**ingress-statistics** *color* [0..4294967295] **end-point** *ip-address* | *ipv6-address* [ **interval** *seconds*] [**repeat** *repeat*]

## Context

[\[Tree\]](#) (monitor>router>seg-rt>sr-policies ingress-statistics)

## Full Context

monitor router segment-routing sr-policies ingress-statistics

## Description

This command monitors SR policy ingress statistics.

## Parameters

### *ip-address* | *ipv6-address*

Displays the IPv4 or IPv6 address expressed in dotted decimal notation.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)

- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

### **seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

## **Platforms**

All

## 12.29 ingress-stats-template

### ingress-stats-template

#### **Syntax**

**ingress-stats-template** [type {p2p | p2mp}] [SessionNameString] [ **sender** ip-address] [**detail**]

#### **Context**

[\[Tree\]](#) (show>router>mpls ingress-stats-template)

#### **Full Context**

show router mpls ingress-stats-template

#### **Description**

This command displays ingress statistics template details.

#### **Parameters**

##### **SessionNameString**

Displays the session name, up to 64 characters.

##### **ip-address**

Displays the sender IP address.

##### **detail**

Displays the number of static LSPs that terminate at the router.



## Platforms

All

## Output

The following output is an example of MPLS ingress statistics template information

[Table 191: Ingress Stats Template Output Fields](#) describes MPLS Ingress Statistics Template output fields.

### Output Example

```
*A:cses-V23# show router mpls ingress-stats-template
=====
MPLS LSP Template Ingress Stats
=====
Session Name                               Type      Sender    Session Count
-----
No Matching Entries Found
=====
```

Table 191: Ingress Stats Template Output Fields

Label	Description
Session Name	Specifies the session name.
Type	p2p – Specifies that p2p is the ingress stats template type p2mp – Specifies that p2mp is the ingress stats template type
Sender	Specifies the sender IP address.
Session Count	Specifies the session count.
No Matching Entries Found	Specifies the number of matching entries.

## 12.30 inside

inside

### Syntax

**inside routes**

### Context

[\[Tree\]](#) (show>router>nat inside)

### Full Context

show router nat inside

## Description

This command displays information about inside NAT routes.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of a NAT inside routes. [Table 192: NAT Inside Routes](#) describes NAT the output fields.

### Output Example

```
*A:Dut-C# /show router 101 nat inside routes
=====
NAT Inside Routes
=====
Router          Route Address      Prefix
                NAT Policy        Type
-----
vprn101         200.0.0.0         16
                static
vprn101         200.1.0.0         16
                n44Pool2-1       static
vprn101         210.0.1.0         24
                n44Pool1-1       dynamic
vprn101         210.1.1.0         24
                n44Pool2-1       dynamic
vprn101         210.6.1.0         24
                n44Pool7-1       dynamic
vprn101         210.7.1.0         24
                n44Pool8-1       dynamic
-----
No. of routes: 6
=====
```

Table 192: NAT Inside Routes

Label	Description
Router	The router name
Route Address	The route address
NAT Policy	The NAT policy name
Prefix	The router prefix
Type	The router type; dynamic or static

## 12.31 instance

### instance

#### Syntax

**instance**

**instance interface** *interface-name* [**vrid** *virtual-router-id*]

**instance interface** *interface-name* **vrid** *virtual-router-id* **ipv6**

#### Context

[\[Tree\]](#) (show>router>vrrp instance)

#### Full Context

show router vrrp instance

#### Description

This command displays information for VRRP instances.

If no command line options are specified, summary information for all VRRP instances displays.

#### Parameters

##### *interface-name*

Displays detailed information for the VRRP instances on the specified IP interface including status and statistics.

**Default** Summary information for all VRRP instances.

##### *virtual-router-id*

Displays detailed information for the specified VRRP instance on the IP interface.

**Default** All VRIDs for the IP interface.

**Values** 1 to 255

##### **ipv6**

Specifies the IPv6 instance.

#### Platforms

All

#### Output

The following output is an example of VRRP instance information for the 7450 ESS, and [Table 193: Show VRRP Instance Output Fields](#) describes the fields.

## Output Example

```
*A:Dut-B# show router vrrp instance interface "base-1-1" vrid 1

=====
VRRP Instance 1 for interface "base-1-1"
=====
Owner                : No                VRRP State          : Master
Primary IP of Master: 50.1.0.1 (Self)
Primary IP           : 50.1.0.1          Standby-Forwarding: Disabled
VRRP Backup Addr    : 50.1.0.10
Admin State         : Up                Oper State           : Up
Up Time             : 02/03/2022 20:37:28 Virt MAC Addr       : 00:00:5e:00:01:01
Auth Type           : None
Config Mesg Intvl   : 5                In-Use Mesg Intvl   : 5
Master Inherit Intvl: No
Base Priority        : 130              In-Use Priority      : 130
Policy ID           : n/a              Preempt Mode        : Yes
Ping Reply          : Yes              Telnet Reply        : No
Ntp Reply           : No
SSH Reply           : No                Traceroute Reply    : No
Init Delay          : 0                Init Timer Expires: 0.000 sec
Creation State      : Active
OperGroup           : op-ipv4-1
-----
BFD Interface
-----
Service ID          : None
Service Name        : 100
Interface Name      : bfd-1-1
Src IP              :
Dst IP              : 120.1.1.2
Session Oper State  : notConfigured
-----
Master Information
-----
Primary IP of Master: 50.1.0.1 (Self)
Addr List Mismatch  : No                Master Priority      : 130
Master Since        : 02/03/2022 20:37:43
-----
Masters Seen (Last 32)
-----
Primary IP of Master  Last Seen                Addr List Mismatch  Msg Count
-----
50.1.0.1              02/03/2022 20:37:43  No                  0
-----
Statistics
-----
Become Master        : 1                Master Changes      : 1
Adv Sent             : 154              Adv Received        : 0
Pri Zero Pkts Sent   : 0                Pri Zero Pkts Rcvd : 0
Preempt Events       : 0                Preempted Events    : 0
Mesg Intvl Discards  : 0                Mesg Intvl Errors   : 0
Addr List Discards   : 0                Addr List Errors     : 0
Auth Type Mismatch   : 0                Auth Failures       : 0
Invalid Auth Type    : 0                Invalid Pkt Type     : 0
IP TTL Errors        : 0                Pkt Length Errors   : 0
Total Discards       : 0
=====
*A:Dut-B# show router vrrp instance interface "base-1-1" vrid 2
```

```
=====
VRRP Instance 2 for interface "base-1-1"
=====
Owner                : No                VRRP State           : Master
Primary IP of Master: 50.1.0.1 (Self)
Primary IP           : 50.1.0.1          Standby-Forwarding: Disabled
VRRP Backup Addr    : 50.1.1.10
Admin State         : Up                Oper State           : Up
Up Time             : 02/03/2022 20:37:28 Virt MAC Addr        : 00:00:5e:00:01:02
Auth Type           : None
Config Mesg Intvl   : 5                In-Use Mesg Intvl   : 5
Master Inherit Intvl: No
Base Priority        : 130              In-Use Priority      : 130
Policy ID           : n/a              Preempt Mode        : Yes
Ping Reply          : Yes              Telnet Reply        : No
Ntp Reply           : No
SSH Reply           : No              Traceroute Reply    : No
Init Delay          : 0                Init Timer Expires: 0.000 sec
Creation State      : Active
Monitor OperGroup   : op-ipv4-1
-----
BFD Interface
-----
Service ID          : None
Service Name        : 100
Interface Name      : bfd-1-1
Src IP              :
Dst IP              : 120.1.1.2
Session Oper State  : notConfigured
-----
Master Information
-----
Primary IP of Master: 50.1.0.1 (Self)
Addr List Mismatch  : No                Master Priority      : 130
Master Since        : 02/03/2022 20:37:47
-----
Masters Seen (Last 32)
-----
Primary IP of Master  Last Seen          Addr List Mismatch  Msg Count
-----
50.1.0.1              02/03/2022 20:37:47  No                  0
-----
Statistics
-----
Become Master        : 1                Master Changes      : 1
Adv Sent             : 0                Adv Received        : 0
Pri Zero Pkts Sent   : 0                Pri Zero Pkts Rcvd : 0
Preempt Events       : 0                Preempted Events    : 0
Mesg Intvl Discards  : 0                Mesg Intvl Errors   : 0
Addr List Discards   : 0                Addr List Errors    : 0
Auth Type Mismatch   : 0                Auth Failures       : 0
Invalid Auth Type    : 0                Invalid Pkt Type    : 0
IP TTL Errors        : 0                Pkt Length Errors   : 0
Total Discards       : 0
-----
*A:Dut-B#
*A:Dut-B# show service oper-group "op-ipv4-1" detail
=====
Service Oper Group Information
=====
```

```

Oper Group      : op-ipv4-1
Creation Origin : manual
Hold DownTime  : 0 secs
Members        : 1
Oper Status: up
Hold UpTime: 4 secs
Monitoring : 3
=====
Member VRRP instance for OperGroup: op-ipv4-1
=====
ID      Service      Interface      Admin      Oper
-----
1       0                base-1-1      up         master
-----
VRRP instance Entries found: 1
=====
Monitoring VRRP instance for OperGroup: op-ipv4-1
=====
ID      Service      Interface      Admin      Oper
-----
2       0                base-1-1      up         master
3       0                base-1-1      up         master
4       0                base-1-1      up         master
-----
VRRP instance Entries found: 3
=====
*A:Dut-B#
    
```

The following output is an example of VRRP instance information for the 7750 SR and 7950 XRS, and [Table 193: Show VRRP Instance Output Fields](#) describes the fields.

### Output Example

```

*A:ALA-A# show router vrrp instance interface n2 vrid 1 ipv6
=====
VRRP Instance 1 for interface "n2"
=====
No Matching Entries
=====
*A:ALA-A#

*A:ALA-A# show router vrrp instance interface n2 vrid 10 ipv6
=====
VRRP Instance 10 for interface "n2"
=====
Owner          : No          VRRP State      : Master
Primary IP of Master: FE80::1 (Self)
Primary IP      : FE80::1
Standby-Forwarding: Disabled

VRRP Backup Addr : 5::10
                  : FE80::10

Admin State      : Up          Oper State       : Up
Up Time          : 09/23/2004 06:55:12 Virt MAC Addr    : 00:00:5e:00:02:0a
Config Mesg Intvl : 1.0       In-Use Mesg Intvl : 1.0
Master Inherit Intvl: Yes
Base Priority     : 100        In-Use Priority  : 100
Policy ID        : n/a       Preempt Mode     : Yes
Ping Reply       : No        Telnet Reply     : No
Init Delay       : 0          Traceroute Reply : No
Creation State   : Active     Init Timer Expires: 0.000 sec
    
```

```

-----
Master Information
-----
Primary IP of Master: FE80::1 (Self)
Addr List Mismatch : No           Master Priority   : 100
Master Since       : 09/23/2004 06:55:16
=====
Masters Seen (Last 32)
=====
Primary IP of Master      Last Seen           Addr List Mismatch    Msg Count
-----
FE80::1                   09/23/2004 06:55:16  No                     0
-----
Statistics
-----
Master Transitions : 1           Discontinuity Time: 09/09/2004 01:57*
Adv Sent           : 23           Adv Received          : 0
Pri Zero Pkts Sent : 0           Pri Zero Pkts Rcvd   : 0
Preempt Events     : 0           Preempted Events     : 0
Mesg Intvl Discards : 0         Mesg Intvl Errors    : 0
Total Discards     : 0           Addr List Errors     : 0
Auth Failures      : 0           Invalid Pkt Type     : 0
IP TTL Errors      : 0           Pkt Length Errors    : 0
=====
* indicates that the corresponding row element may have been truncated.
    
```

Table 193: Show VRRP Instance Output Fields

Label	Description
Interface name	The name of the IP interface
VR ID	The virtual router ID for the IP interface
Own Owner	Yes — specifies that the virtual router instance as owning the virtual router IP addresses
	No — indicates that the virtual router instance is operating as a non-owner
Adm	Up — indicates that the administrative state of the VRRP instance is up
	Down — indicates that the administrative state of the VRRP instance is down
Opr	Up — indicates that the operational state of the VRRP instance is up
	Down — indicates that the operational state of the VRRP instance is down
State	<ul style="list-style-type: none"> <li>When owner, <b>backup</b> defines the IP addresses that are advertised within VRRP advertisement messages</li> </ul>

Label	Description
	<ul style="list-style-type: none"> <li>When non-owner, <b>backup</b> actually creates an IP interface IP address used for routing IP packets and communicating with the system when the access commands are defined ( <b>ntp-reply</b>, <b>ping-reply</b>, <b>telnet-reply</b>, and <b>ssh-reply</b>)</li> </ul>
Pol Id	The value that uniquely identifies a priority control policy
Base Priority	The <i>base-priority</i> value used to derive the in-use priority of the virtual router instance as modified by any optional VRRP priority control policy
InUse Priority	The current in-use priority associated with the VRRP virtual router instance
Msg Int	The administrative advertisement message timer used by the master virtual router instance to send VRRP advertisement messages and to derive the master down timer as backup
Inh Int	Yes — when the VRRP instance is a non-owner and is operating as a backup and the <b>master-int-inherit</b> command is enabled, the master down timer is indirectly derived from the value in the advertisement interval field of the VRRP message received from the current master
	No — when the VRRP instance is operating as a backup and the <b>master-int-inherit</b> command is <i>not</i> enabled, the configured advertisement interval is matched against the value in the advertisement interval field of the VRRP message received from the current master; if the two values do not match then the VRRP advertisement is discarded; if the VRRP instance is operating as a master, this value has no effect
Backup Addr	The backup virtual router IP address
BFD	Indicates BFD is enabled
VRRP State	Specifies whether the VRRP instance is operating in a master or backup state
Policy ID	<p>The VRRP priority control policy associated with the VRRP virtual router instance</p> <p>A value of 0 indicates that no control policy is associated with the virtual router instance</p>
Preempt Mode	Yes — the preempt mode is enabled on the virtual router instance where it will preempt a VRRP master with a lower priority
	No — the preempt mode is disabled and prevents the non-owner virtual router instance from preempting another, less desirable virtual router



Label	Description
Ping Reply	Yes — a non-owner master is enabled to reply to ICMP Echo requests directed to the virtual router instance IP addresses  Ping Reply is valid only if the VRRP virtual router instance associated with this entry is a non-owner  A non-owner backup virtual router never responds to such ICMP echo requests irrespective if Ping Reply is enabled
	No — ICMP echo requests to the virtual router instance IP addresses are discarded
Telnet Reply	Yes — non-owner masters can to reply to TCP port 23 Telnet requests directed at the virtual router instances IP addresses
	No — telnet requests to the virtual router instance IP addresses are discarded
SSH Reply	Yes — non-owner masters can to reply to SSH requests directed at the virtual router instances IP addresses
	No — all SSH request messages destined to the non-owner virtual router instance IP addresses are discarded
Primary IP of Master	The IP address of the VRRP master
Primary IP	The IP address of the VRRP owner
Up Time	The date and time when the operational state of the event last changed
Virt MAC Addr	The virtual MAC address used in ARP responses when the VRRP virtual router instance is operating as a master
Auth Type	Specifies the VRRP authentication Type 0 (no authentication), Type 1 (simple password), or Type 2 (MD5) for the virtual router
Addr List Mismatch	Specifies whether a trap was generated when the IP address list received in the advertisement messages received from the current master did not match the configured IP address list  This is an edge triggered notification; a second trap will not be generated for a packet from the same master until this event has been cleared
Master Priority	The priority of the virtual router instance which is the current master
Master Since	The date and time when operational state of the virtual router changed to master  For a backup virtual router, this value specifies the date and time when it received the first VRRP advertisement message from the virtual router which is the current master

Label	Description
OperGroup	The operational group name associated with the VRRP interface, if configured
Monitor OperGroup	The monitor operational group associated with the VRRP

## instance

### Syntax

**instance** [ipv4 | ipv6]

### Context

[\[Tree\]](#) (clear>router>ldp instance)

### Full Context

clear router ldp instance

### Description

This command resets the LDP instance.

### Platforms

All

## instance

### Syntax

**instance**

### Context

[\[Tree\]](#) (tools>dump>router>ldp instance)

### Full Context

tools dump router ldp instance

### Description

This command dumps information for the LDP instance.

### Platforms

All

## instance

### Syntax

```
instance interface interface-name vr-id virtual-router-id [ipv6] [interval seconds] [repeat repeat] [{  
  absolute | rate}]
```

### Context

[\[Tree\]](#) (monitor>router>vrrp instance)

### Full Context

monitor router vrrp instance

### Description

Monitor statistics for a VRRP instance.

### Parameters

#### *interface-name*

Specifies the name of the existing IP interface on which VRRP is configured.

#### *virtual-router-id*

Specifies the virtual router ID for the existing IP interface, expressed as a decimal integer.

#### **ipv6**

Monitors IPv6 instances.

#### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 5 seconds

#### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

#### **absolute**

When the **absolute** keyword is specified, the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

#### **rate**

When the **rate** keyword is specified, the rate-per-second for each statistic is displayed instead of the delta.

## Platforms

All

## Output

The following output is an example of VRRP instance information.

### Output Example

```
*A:ALA-A# monitor router vrrp instance interface n2 vr-id 1
=====
Monitor statistics for VRRP Instance 1 on interface "n2"
=====
-----
At time t = 0 sec (Base Statistics)
-----
Become Master      : 1                Master Changes    : 1
Adv Sent           : 1439             Adv Received      : 0
Pri Zero Pkts Sent : 0                Pri Zero Pkts Rcvd: 0
Preempt Events     : 0                Preempted Events  : 0
Mesg Intvl Discards : 0             Mesg Intvl Errors : 0
Addr List Discards : 0                Addr List Errors  : 0
Auth Type Mismatch : 0                Auth Failures     : 0
Invalid Auth Type  : 0                Invalid Pkt Type  : 0
IP TTL Errors      : 0                Pkt Length Errors : 0
Total Discards     : 0
=====
```

The following output is an example of VRRP instance information for the 7750 SR and 7950 XRS.

### Output Example

```
*A:ALA-A# monitor router vrrp instance interface n2 vr-id 10 ipv6
=====
Monitor statistics for VRRP Instance 10 on interface "n2"
=====
-----
At time t = 0 sec (Base Statistics)
-----
Master Transitions : 1                Discontinuity Time: 09/09/2004 01:57*
Adv Sent           : 1365             Adv Received      : 0
Pri Zero Pkts Sent : 0                Pri Zero Pkts Rcvd: 0
Preempt Events     : 0                Preempted Events  : 0
Mesg Intvl Discards : 0             Mesg Intvl Errors : 0
Total Discards     : 0                Addr List Errors  : 0
Auth Failures      : 0                Invalid Pkt Type  : 0
IP TTL Errors      : 0                Pkt Length Errors : 0
=====
```

## 12.32 inter-as-label

inter-as-label

### Syntax

**inter-as-label** [**next-hop** *ip-address* | **backup-next-hop** *ip-address*] [**received-label** *received-label*]

## Context

[\[Tree\]](#) (show>router>bgp inter-as-label)

## Full Context

show router bgp inter-as-label

## Description

This command displays BGP inter-AS label information.

## Parameters

### *ip-address*

Displays information for the specified IP address.

- Values** ipv4-address:
- a.b.c.d (host bits must be 0)

### *received-label*

Displays information for the received label.

- Values** 0 to 429496729

## Platforms

All

## 12.33 inter-chassis

### inter-chassis

## Syntax

**inter-chassis**

## Context

[\[Tree\]](#) (tools>perform>system inter-chassis)

## Full Context

tools perform system inter-chassis

## Description

Commands in this context provide inter-chassis tools.

## Platforms

7950 XRS

## 12.34 interface

### interface

#### Syntax

**interface** *subscriber-interface* [**id** *srrp-id*]

#### Context

[\[Tree\]](#) (clear>router>srrp interface)

#### Full Context

clear router srrp interface

#### Description

This command clears and resets SRRP interface instances.

#### Parameters

##### ***subscriber-interface***

Specifies an existing subscriber interface name up to 32 characters.

##### ***srrp-id***

Specifies an existing SRRP ID.

**Values** 1 to 4294967295

#### Platforms

All

### interface

#### Syntax

**interface** *[[ip-address | ip-int-name] [interface-type] [detail] [family]] summary*

#### Context

[\[Tree\]](#) (show>service>id interface)

#### Full Context

show service id interface

#### Description

This command displays information for the IP interfaces associated with the service.

If no optional parameters are specified, a summary of all IP interfaces associated to the service are displayed.

## Parameters

### *ip-address*

Specifies the IP address of the interface for which to display information.

**Values** 1.0.0.0 — 223.255.255.255

### *ip-int-name*

Specifies the IP interface name for which to display information, 32 characters.

### *family*

Specifies the family to display.

**Values** ipv4, ipv6

### *interface-type*

Specifies the interface type.

**Values** subscriber, group, redundant

### *detail*

Displays detailed IP interface information.

**Default** IP interface summary output

### *summary*

Displays a summary.

## Platforms

All

## Output

The following output is an example of IP interface information, and [Table 194: Show Service-ID Interface Field Descriptions](#) describes the output fields.

### Output Example

```
A:cses-V96# /show service id 1 interface
- interface [{"<ip-address|ip-int-name>"} [interface-type] [detail]
  [family]] | summary]
<ip-int-name|ip-ad*> : ip-int-name      - 32 chars max
                    ipv4-address     - a.b.c.d
                    ipv6-address     - x:x:x:x:x:x:x      (eight 16-bit
                    pieces)
                    x:x:x:x:x:d.d.d.d
                    x - [0..FFFF]H
                    d - [0..255]D
<detail>           : keyword - adds details to the display
<family>           : ipv4|ipv6
<interface-type>  : subscriber|group|redundant
<summary>         : keyword - displays summary
```

### Output Example

```
*A:ALA-12# show service id 321 interface
=====
Interface Table
=====
Interface-Name          Type IP-Address      Adm   Opr   Type
-----
test                    Pri  10.11.1.1/24     Up    Up    IES
-----
Interfaces : 1
=====
*A:ALA-12#

A:ALA-49# show service id 88 interface detail
=====
Interface Table
=====
Interface
-----
If Name       : Sector A
Admin State   : Up
Oper State    : Down
Protocols     : None

IP Addr/mask  : Not Assigned
-----
Details
-----
Description   :
If Index      : 26
SAP Id        : 7/1/1.2.2
TOS Marking   : Untrusted
SNTP B.Cast   : False
MAC Address   : Not configured.
IP MTU        : 1500
Arp Populate  : Disabled
Cflowd       : None
Virt. If Index : 26
If Type       : IES
IES ID        : 88
Arp Timeout   : 14400
ICMP Mask Reply : True

Proxy ARP Details
Proxy ARP     : Enabled
Local Proxy ARP : Disabled
Policies      : ProxyARP

DHCP Details
Admin State   : Up
Lease Populate : 0
Action        : Keep
Trusted       : Disabled

ICMP Details
Redirects     : Number - 100
Time (seconds) - 10
Unreachables : Number - 100
Time (seconds) - 10
TTL Expired  : Number - 100
Time (seconds) - 10
-----
Interface
-----
If Name       : test
Admin State   : Up
Oper State    : Down
Protocols     : None
IP Addr/mask  : Not Assigned
-----
Details
-----
Description   :
If Index      : 27
SAP Id        : 10/1/2:0
TOS Marking   : Untrusted
Virt. If Index : 27
If Type       : IES
```



```

SNTP B.Cast : False
MAC Address : Not configured.
IP MTU      : 1500
Arp Populate : Disabled
Cflowd     : None

IES ID      : 88
Arp Timeout : 14400
ICMP Mask Reply : True

Proxy ARP Details
Proxy ARP   : Disabled
Local Proxy ARP : Disabled

DHCP Details
Admin State : Up
Action      : Keep
Lease Populate : 0
Trusted     : Disabled

ICMP Details
Redirects   : Number - 100
Unreachables : Number - 100
TTL Expired : Number - 100
Time (seconds) - 10
Time (seconds) - 10
Time (seconds) - 10
-----
Interfaces : 2
=====
A:ALA-49#

*A:SetupCLI# show service id 3 interface "ab" detail
=====
Interface Table
=====
-----
Interface
-----
If Name      : ab
Admin State  : Up
Oper (v4/v6) : Down/--
Protocols    : None

IP Addr/mask : Not Assigned
-----
Details
-----
Description  : (Not Specified)
If Index     : 2
Last Oper Chg: 10/08/2009 07:07:58
SDP Id       : spoke-2000:1
Virt. If Index : 2
Global If Index : 329

Spoke-SDP Details
Admin State  : Up
Hash Label   : Enabled
Oper State   : Down
Flags        : SvcAdminDown SdpOperDown
              NoIngVCLabel NoEgrVCLabel

TOS Marking  : Trusted
If Type      : VPRN
SNTP B.Cast  : False
MAC Address  : 76:6d:ff:00:00:00
Arp Timeout  : 14400
IP Oper MTU  : 0
ICMP Mask Reply : True
Arp Populate : Disabled
Host Conn Verify : Disabled
Cflowd      : None
LdpSyncTimer : None
LSR Load Bal*: system
uRPF Chk    : disabled
uRPF Fail By*: 0
uRPF Chk Fail Pk*: 0

Proxy ARP Details
Rem Proxy ARP: Disabled
Local Proxy ARP : Disabled
Policies     : none
    
```

```
Proxy Neighbor Discovery Details
Local Pxy ND : Disabled
Policies      : none

DHCP no local server

DHCP Details
Description   : (Not Specified)
Admin State   : Down
Gi-Addr       : Not configured
Action        : Keep
Lease Populate : 0
Gi-Addr as Src Ip: Disabled
Trusted       : Disabled

DHCP Proxy Details
Admin State   : Down
Lease Time    : N/A
Emul. Server  : Not configured

Subscriber Authentication Details
Auth Policy   : None

DHCP6 Relay Details
Description   : (Not Specified)
Admin State   : Down
Oper State    : Down
If-Id Option  : None
Src Addr      : Not configured
Lease Populate : 0
Nbr Resolution : Disabled
Remote Id     : Disabled

DHCP6 Server Details
Admin State   : Down
Max. Lease States: 8000

ICMP Details
Redirects     : Number - 100
Unreachables : Number - 100
TTL Expired   : Number - 100
Time (seconds) - 10
Time (seconds) - 10
Time (seconds) - 10

IPCP Address Extension Details
Peer IP Addr*: Not configured
Peer Pri DNS*: Not configured
Peer Sec DNS*: Not configured

Routed VPLS Details
VPLS Name     :
Binding Status : Up
-----
Interfaces : 1
=====
* indicates that the corresponding row element may have been truncated.
*A:SetupCLIP#
```

```
# show service id 1000 interface "group-int-1-1" detail
=====
Interface Table
=====
-----
Interface
-----
If Name       : group-int-1-1
Sub If Name   : sub-int-1
Red If Name   :
Admin State   : Up
Oper (v4/v6) : Up/Up
Protocols     : None
Ignore Port State: None
Ping Template : N/A
```

```

-----
Details
-----
Description      : This is a group interface
If Index         : 16                               Virt. If Index   : 16
Last Oper Chg   : 12/17/2020 12:32:13             Global If Index  : 265
Mon Oper Grp    : None
Srrp En Rtng    : Disabled                         Hold time       : N/A
MACSec          : N/A
Group Port      : 1/1/4
TOS Marking     : Untrusted                         If Type         : IES Grp
SNTP B.Cast     : False                            IES ID          : 1000
MAC Address     : 06:0c:01:01:00:04               Mac Accounting   : Disabled
Ingress stats   : Enabled                          IPv6 DAD        : Enabled
TCP MSS V4     : 0                                TCP MSS V6      : 0
ARP Timeout     : 14400s                          IPv6 Nbr ReachTime: 30s
ARP Retry Timer : 5000ms
ARP Limit       : Disabled                         IPv6 Nbr Limit  : Disabled
ARP Threshold   : Disabled                       IPv6 Nbr Threshold: Disabled
ARP Limit Log On* : Disabled                      IPv6 Nbr Log Only : Disabled
IP MTU          : (default)
IP Oper MTU     : 1500
Ignore DF Bit   : Disabled
ARP Populate    : Enabled                         Host Conn Verify : Disabled
SHCV pol       : None
SHCV pol IPv4   : None
SHCV pol IPv6   : None
Cflowd (unicast) : None                          Cflowd (multicast): None
LdpSyncTimer   : None
LSR Load Balance : system
EGR Load Balance : both
Vas If Type     : none
TEID Load Balance: Disabled
SPI Load Balance : Disabled
uRPF Chk       : disabled
uRPF Ipv6 Chk  : disabled
uRPF Select VPRN : False
PTP HW Assist  : Disabled
Rx Pkts        : 3                               Rx Bytes        : 817
Rx V4 Pkts     : 2                               Rx V4 Bytes     : 608
Rx V4 Help. Pkts : 0                          Rx V4 Help. Bytes : 0
Rx V6 Pkts     : 1                               Rx V6 Bytes     : 209
Tx Pkts        : 0                               Tx Bytes       : 0
Tx V4 Pkts     : 0                               Tx V4 Bytes    : 0
Tx V4 Discard Pk* : 0                          Tx V4 Discard Byt* : 0
Tx V6 Pkts     : 0                               Tx V6 Bytes    : 0
Tx V6 Discard Pk* : 0                          Tx V6 Discard Byt* : 0
Tx DBcast Dis. P* : 0                          Tx DBcast Dis. Byt* : 0
Mpls Rx Pkts   : 0                               Mpls Rx Bytes   : 0
Mpls Tx Pkts   : 0                               Mpls Tx Bytes   : 0
GRE Termination : Disabled
Inter-AS selective ILM untrusted : Disabled
Untrusted default forwarding : forward
OperDCpuProtPlcy : N/A
IP-Helper Address: Disabled
Static Delay    : <none>
Proxy ARP Details
Rem Proxy ARP   : Disabled                       Local Proxy ARP  : Enabled
Policies        : none
Proxy Neighbor Discovery Details
Local Pxy ND    : Disabled
Policies        : none
DHCP no local server
DHCP Details
    
```

```

Description : (Not Specified)
Filter-Id : None
Admin State : Up Lease Populate : 1
Servers : 192.0.2.3
Gi-Addr : 10.250.13.254 Gi-Addr as Src Ip : Enabled
* = inferred gi-address from interface IP address
Action : Keep Trusted : Enabled
Match CircId : Disabled MAC from L2 Hdr : Disabled
Fixed L2 MAC : N/A
User-DB : N/A
Client Appls : DHCP
Python policy : N/A
DHCP Proxy Details
Admin State : Up
Lease Time : 0d 00:15:00 Radius Override : False
Emul. Server : Not configured
DHCP Relay Proxy Details
Relay ucast : none
Siaddr ovr : N/A
DHCP Offer Selection Details
Discover Delay : N/A
Client MAC : N/A
Discover Delay : N/A
Subscriber Authentication Details
Auth Policy : None
Diam app plcy : None
DHCP6 Details
User Db : ladb-1
If-Id Option : AsciiTuple Remote Id : Disabled
PD Mngd Route : Enabled PD Mngd Route NH : ipv6
Override SLAAC : Disabled
Filter-id : No
User-ident : mac
Python policy :
DHCP6 Snooping Details
Admin State : Down
DHCP6 Proxy Details
Admin State : Down
Renew Timer : 0d 00:30:00 Rebind Timer : 0d 00:48:00
Valid LT : 1d 00:00:00 Pref LT : 0d 01:00:00
Applications : DHCP6
Server Id : duid-ll
DHCP6 Relay Details
Description : (Not Specified)
Admin State : Up Applications : DHCP6
Oper State : Up
Link Address : Not configured
Servers : 2001:db8::3
Source Address : Not configured
DHCP6 Relay Advertise Selection Details
Solicit Delay : N/A Preference : N/A
Client MAC : N/A
Solicit Delay : N/A Preference : N/A
DHCP6 Lease Split Details
Admin State : Up
Valid LT : 0d 00:15:00
IPv6 Bridging Details
IPoE Bridging : Disabled
IPoE Linking Details
Admin State : Down
Share CircId : Disabled
Grat Rtr-Adv : Disabled
ARP host
Admin State : outOfService Min Auth Interval : 15 minutes
    
```

```

Host Limit      : 1                SAP Host Limit   : 1
Data trigger
Admin state    : disabled
ICMP Details
Redirects      : Number - 100      Time (seconds)  - 10
Unreachables  : Number - 100      Time (seconds)  - 10
TTL Expired   : Number - 100      Time (seconds)  - 10
Parameter Problem: Number - 100    Time (seconds)  - 10
ICMP Mask Reply : True
ICMPv6 Details
Packet Too Big : Number - 100      Time (seconds)  - 10
Parameter Problem: Number - 100    Time (seconds)  - 10
Redirects      : Number - 100      Time (seconds)  - 10
Time Exceeded  : Number - 100      Time (seconds)  - 10
Unreachables  : Number - 100      Time (seconds)  - 10
IPCP Address Extension Details
Peer IP Addr   : Not configured
Peer Pri DNS Addr: Not configured
Peer Sec DNS Addr: Not configured
IPoE Details
Description    : (Not Specified)
Last Mgmt Chg : 12/16/2020 13:24:15
Session Limit  : N/A                SAP Session Limit: 2
IPoE Policy    : ipoe-policy-1      Admin State      : Up
User-DB        : ludb-1
Min Auth Interval: 60 seconds
Force Auth     : Disabled
Stateless red. : disabled
PPPoE Details
Description    : (Not Specified)
Last Mgmt Chg : 12/16/2020 13:24:11
Session Limit  : 1                  SAP Session Limit: 1
PPPoE Policy   : default            Admin State      : Down
User-DB        : N/A
PPP Details
Description    : (Not Specified)
Last Mgmt Chg : 12/16/2020 13:24:11
Session Limit  : 1
PPP Policy     : default            Admin State      : Down
User-DB        : N/A
=====
SAP(Summary), Service 1000 Interface group-int-1-1
=====
PortId          SvcId      Ing. Ing.  Egr. Egr.  Adm  Opr
                QoS  Fltr  QoS  Fltr
-----
[1/1/4:2111.51] 1000        1  none  1   none  Up  Up
-----
Number of SAPs : 1
-----
Number of Managed SAPs : 1, indicated by [<sap-id>]
Flags : (I) = Idle MSAP
-----
Network Domains Associated
default
-----
Admin Groups
-----
No Matching Entries
-----
Srlg Groups
-----
    
```

```

No Matching Entries
-----
-----
QoS Queue-Group Redirection Details
-----
Ingress FP QGrp : (none)           Egress Port QGrp : (none)
Ing FP QGrp Inst : (none)         Egr Port QGrp Inst: (none)
-----
Interfaces : 1
=====
* indicates that the corresponding row element may have been truncated.
    
```

The Oper Hash Label and Hash Lbl Sig Cap spoke SDP fields display when signal-capability is enabled and operational state of hash-label in datapath.

```

-----
Service Destination Points(SDPs)
-----
-----
Sdp Id 1:555  -(10.2.2.2)
-----
Description      : (Not Specified)
SDP Id           : 1:555                Type                : Spoke
Spoke Descr     : (Not Specified)
VC Type         : Ether                VC Tag              : n/a
Admin Path MTU  : 0                    Oper Path MTU       : 1568
Far End         : 10.2.2.2             Delivery            : MPLS
Tunnel Far End  : n/a                 LSP Types          : RSVP
Hash Label      : Disabled             Hash Lbl Sig Cap    : Disabled
Oper Hash Label : Disabled

Admin State      : Up                  Oper State          : Up
Acct. Pol       : None                 Collect Stats       : Disabled
Ingress Label   : 131065               Egress Label       : 131059
Ingr Mac Fltr-Id : n/a                 Egr Mac Fltr-Id    : n/a
Ingr IP Fltr-Id : n/a                 Egr IP Fltr-Id     : n/a
Ingr IPv6 Fltr-Id : n/a              Egr IPv6 Fltr-Id   : n/a
Admin ControlWord : Not Preferred       Oper ControlWord    : False
Admin BW(Kbps)  : 0                    Oper BW(Kbps)       : 0
Last Status Change : 11/25/2010 13:06:14      Signaling           : TLDP
Last Mgmt Change : 11/24/2010 13:00:48      Force Vlan-Vc      : Disabled
Endpoint        : N/A                  Precedence          : 4
PW Status Sig   : Enabled
Class Fwding State : Down
Flags           : None
Peer Pw Bits    : None
Peer Fault Ip   : None
Peer Vccv CV Bits : lspPing
Peer Vccv CC Bits : mplsRouterAlertLabel
Application Profile: None
Standby Sig Slave : False
    
```

**ping-template** information can be displayed and extracted using the **detail** parameter and the **match** statement below.

```

show service id 12101 interface "int-PE-2-CE-101" detail | match "Ping Template Values in Use"
post-lines 29
    
```

```

Ping Template Values in Use
Name          : base-template
Description   : Basic standard template
Dscp          : ncl
Dot1p         : 7
Interval     : 60
Timeout      : 5
Failure Threshold: 4
React Fail Thresh: 3
React Interval : 1
React Timeout : 1
React Threshold : 3
Size         : 56
TTL          : 1
Ping Template Operational Data
Admin State   : Up
Destination  : 172.16.101.2
Current Interval : Interval
Current State : Success
Ping Template Counters
Fail Counter  : 0
Pass Counter  : 444
-----
    
```

Table 194: Show Service-ID Interface Field Descriptions

Label	Description
Interface-Name	The name used to refer to the interface.
Type	Specifies the interface type.
IP-Address	Specifies the IP address/IP subnet/broadcast address of the interface.
Adm	The desired state of the interface.
Opr	The operating state of the interface.
Interface	
If Name	The name used to refer to the interface.
Admin State	The desired state of the interface.
Oper State	The operating state of the interface.
IP Addr/mask	Specifies the IP address/IP subnet/broadcast address of the interface.
Ignore Port State	<p>Indicates whether or not the <b>tools perform service id service-id interface ip-int-name ignore-sap port-state</b> command has been executed for a service interface directly connected to a SAP:</p> <p>none — The command has not been executed for or accepted by the interface.</p> <p>active — The command has been executed and accepted, and the port state check is currently being bypassed for the interface.</p> <p>pending — The command has been executed and accepted, but the port state for the interface is already operational.</p>

Label	Description
Details	
If Index	The index corresponding to this interface. The primary index is 1. For example, all interfaces are defined in the Base virtual router context.
If Type	Specifies the interface type.
Port Id	Specifies the SAP's port ID.
SNTP B.Cast	Specifies whether SNTP broadcast client mode is enabled or disabled.
Arp Timeout	Specifies the timeout for an ARP entry learned on the interface.
MAC Address	Specifies the 48-bit IEEE 802.3 MAC address.
ICMP Mask Reply	Specifies whether ICMP mask reply is enabled or disabled.
Cflowd	Specifies whether cflowd collection and analysis on the interface is enabled or disabled.
ICMP Details	
Redirects	Specifies the rate for ICMP redirect messages.
Unreachables	Specifies the rate for ICMP unreachable messages.
TTL Expired	Specifies the rate for ICMP TTL messages.
Admin State (DHCP6 Lease Split)	DHCPv6 lease split admin state (subscriber and group interfaces only)
Valid LT	DHCPv6 lease split valid lifetime (subscriber and group interfaces only)

## interface

### Syntax

**interface** [*ip-int-name* | *ip-address*] [**group**] [*grp-ip-address*] [**detail**]

### Context

[\[Tree\]](#) (show>router>igmp interface)

### Full Context

show router igmp interface

### Description

This command displays IGMP interface information.



## Parameters

### *ip-int-name*

Displays information associated with the specified IP interface name.

### *ip-address*

Displays information associated with the specified IP address.

### *group grp-ip-address*

Displays IP multicast group address information for the specified group IP address.

### *detail*

Displays detailed IP interface information along with the source group information learned on that interface.

## Platforms

All

## Output

The following output is an example of IGMP interface information. [Table 195: IGMP Fields](#) provides IGMP field descriptions.

### Output Example

```
*A:ALA-BA# show router 100 interface
=====
Interface Table (Service: 100)
=====
Interface-Name      Adm      Opr(v4/v6)  Mode      Port/SapId
IP-Address          PfxState
-----
IGMP_to_CE         Up       Up          VPRN      1/1/7
10.1.1.1/24        n/a
system             Up       Up          VPRN      loopback
10.20.1.2/32      n/a
-----
Interfaces : 2
=====
*A:ALA-BA#

*A:ALA-BA# show router 100 interface IGMP_to_CE
=====
Interface Table (Service: 100)
=====
Interface-Name      Adm      Opr(v4/v6)  Mode      Port/SapId
IP-Address          PfxState
-----
IGMP_to_CE         Up       Up          VPRN      1/1/7
10.1.1.1/24        n/a
-----
Interfaces : 1
=====
*A:ALA-BA#

*A:ALA-BA# show router 100 igmp interface
=====
IGMP Interfaces
=====
Interface           Adm  Oper  Querier          Cfg/Opr Num      Policy
```

```

Version Groups
-----
IGMP_to_CE          Up  Up  10.1.1.1          1/1  3    igmppol
-----
Interfaces : 1
=====
*A:ALA-BA#

*A:ALA-BA# show router 100 igmp interface IGMP_to_CE
=====
IGMP Interface IGMP_to_CE
=====
Interface          Adm  Oper  Querier          Cfg/Opr Num  Policy
                   Version Groups
-----
IGMP_to_CE          Up  Up  10.1.1.1          1/1  3    igmppol
-----
Interfaces : 1
=====
*A:ALA-BA#

*A:ALA-BA# show router 100 igmp interface 10.1.1.1
=====
IGMP Interface 10.1.1.1
=====
Interface          Adm  Oper  Querier          Cfg/Opr Num  Policy
                   Version Groups
-----
IGMP_to_CE          Up  Up  10.1.1.1          1/1  3    igmppol
-----
Interfaces : 1
=====
*A:ALA-BA#

*A:ALA-BA# show router 100 igmp interface IGMP_to_CE group 239.1.1.1
=====
IGMP Interface IGMP_to_CE
=====
Interface          Adm  Oper  Querier          Cfg/Opr Num  Policy
                   Version Groups
-----
IGMP_to_CE          Up  Up  10.1.1.1          1/1  3    igmppol
-----
IGMP Group
-----
Group Address : 239.1.1.1          Up Time      : 0d 00:03:52
Interface     : IGMP_to_CE             Expires      : never
Last Reporter : 0.0.0.0                   Mode         : exclude
V1 Host Timer : Not running              Type         : static
V2 Host Timer : Not running              Compat Mode  : IGMP Version 3
-----
Interfaces : 1
=====
*A:ALA-BA#

*A:ALA-BA# show router 100 igmp interface IGMP_to_CE group 239.1.1.1 detail
=====
IGMP Interface IGMP_to_CE
=====
Interface          : IGMP_to_CE
Admin Status       : Up
Oper Status        : Up
Querier            : 10.1.1.1
Querier Up Time    : 0d 00:04:01
Querier Expiry Time: N/A
Time for next query: 0d 00:13:42
Admin/Oper version : 1/1
Num Groups         : 3
    
```

```

Policy          : igmppol          Subnet Check      : Disabled
Max Groups Allowed : 16000         Max Groups Till Now: 3
MCAC Policy Name  :                 MCAC Const Adm St : Enable
MCAC Max Unconst BW: no limit      MCAC Max Mand BW  : no limit
MCAC In use Mand BW: 0             MCAC Avail Mand BW : unlimited
MCAC In use Opnl BW: 0             MCAC Avail Opnl BW : unlimited
-----
IGMP Group
-----
Group Address   : 239.1.1.1         Up Time           : 0d 00:04:02
Interface      : IGMP_to_CE       Expires           : never
Last Reporter   : 0.0.0.0         Mode              : exclude
V1 Host Timer   : Not running      Type              : static
V2 Host Timer   : Not running      Compat Mode       : IGMP Version 3
-----
Interfaces : 1
=====
*A:ALA-BA#
    
```

Table 195: IGMP Fields

Label	Description
Interface	The interfaces that participate in the IGMP protocol.
Adm Admin Status	The administrative state for the IGMP protocol on this interface.
Oper Oper Status	The current operational state of IGMP protocol on the interface.
Querier	The address of the IGMP querier on the IP subnet to which the interface is attached.
Querier Up Time	The time since the querier was last elected as querier.
Querier Expiry Timer	The time remaining before the querier ages out. If the querier is the local interface address, the value will be zero.
Cfg/Opr Version Admin/Oper version	Cfg — The configured version of IGMP running on this interface. For IGMP to function correctly, all routers on a LAN must be configured to run the same version of IGMP on that LAN.  Opr — The operational version of IGMP running on this interface. If the cfg value is 3 but all of the routers in the local subnet of this interface use IGMP version v1 or v2, the operational version will be v1 or v2.
Num Groups	The number of multicast groups which have been learned by the router on the interface.
Policy	The policy that is to be applied on the interface.
Group Address	The IP multicast group address for which this entry contains information.

Label	Description
Up Time	The time since this source group entry got created.
Last Reporter	The IP address of the source of the last membership report received for this IP Multicast group address on this interface. If no membership report has been received, this object has the value 0.0.0.0.
Mode	The mode is based on the type of membership report(s) received on the interface for the group. In the 'include' mode, reception of packets sent to the specified multicast address is requested only from those IP source addresses listed in the source-list parameter of the IGMP membership report. In 'exclude' mode, reception of packets sent to the given multicast address is requested from all IP source addresses except those listed in the source-list parameter.
V1 Host Timer	The time remaining until the local router will assume that there are no longer any IGMP version 1 members on the IP subnet attached to this interface. Upon hearing any IGMPv1 Membership Report, this value is reset to the group membership timer. While this time remaining is non-zero, the local router ignores any IGMPv2 Leave messages for this group that it receives on this interface.
V2 Host Timer	The time remaining until the local router will assume that there are no longer any IGMP version 2 members on the IP subnet attached to this interface. Upon hearing any IGMPv2 Membership Report, this value is reset to the group membership timer. While this time remaining is non-zero, the local router ignores any IGMPv3 Leave messages for this group that it receives on this interface.
Type	Indicates how this group entry was learned. If this group entry was learned by IGMP, it will be set to "dynamic". For statically configured groups, the value will be set to 'static'.
Compat Mode	Used in order for routers to be compatible with older version routers. IGMPv3 hosts must operate in version 1 and version 2 compatibility modes. IGMPv3 hosts must keep state per local interface regarding the compatibility mode of each attached network. A host's compatibility mode is determined from the Host Compatibility Mode variable which can be in one of three states: IGMPv1, IGMPv2 or IGMPv3. This variable is kept per interface and is dependent on the version of General Queries heard on that interface as well as the Older Version Querier Present timers for the interface.

## interface

### Syntax

**interface**

### Context

[\[Tree\]](#) (show>service>id>spb interface)

### Full Context

show service id spb interface

### Description

This command displays SPB interfaces.

### Platforms

All

### Output

The following output is an example of service SPB interface information.

### Output Example

```
*A:Dut-A# show service id 100001 spb interface
=====
ISIS Interfaces
=====
Interface                               Level CircID  Oper State  L1/L2 Metric
-----
sap:1/1/20:500                          L1    65536    Up          10/-
-----
Interfaces : 1
=====
```

## interface

### Syntax

**interface** [{*ip-int-name* | *ip-address*}] [**urpf-stats**] [**statistics**] [**hold-time**]

**interface** [{*ip-int-name* | *ip-address*}] **policy-accounting** [**class**] [**index**]

**interface** [*ip-int-name* | *ip-address*] **mac** [*ieee-address*]

### Context

[\[Tree\]](#) (clear>router interface)

### Full Context

clear router interface

## Description

This command clears IP interface statistics.

If no IP interface is specified either by IP interface name or IP address, the command will perform the clear operation on all IP interfaces.

## Parameters

### *ip-int-name* | *ip-address*

Specifies IP interface name or IP interface address.

**Values** ip-int-name: 32 chars max  
ip-address: a.b.c.d

**Default** all IP interfaces

### *urpf-stats*

Resets the statistics associated with uRPF failures.

### *statistics*

Resets the IP interface traffic statistics.

### *hold-time*

Clears the IP interface activation hold time.

### *policy-accounting*

Clears the accounting statistics.

### *class*

Specifies whether to clear source class counters or destination class counters.

**Values** source-class, dest-class

### *index*

Specifies the source or destination class index.

**Values** 1 to 255

### *ieee-address*

Specifies the MAC address.

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

## Platforms

All

## interface

## Syntax

**interface** *interface-name* [**vrid** *virtual-router-id*]

**interface** *interface-name* **vrid** *virtual-router-id* **ipv6**

### Context

[\[Tree\]](#) (clear>router>vrrp interface)

### Full Context

clear router vrrp interface

### Description

This command resets VRRP protocol instances on an IP interface.

### Parameters

#### *interface-name*

Specifies the IP interface to reset the VRRP protocol instances.

#### *virtual-router-id*

Resets the VRRP protocol instance for the specified VRID on the IP interface.

**Default** All VRIDs on the IP interface.

**Values** 1 to 255

#### **ipv6**

Clears IPv6 information for the specified interface.

### Platforms

All

## interface

### Syntax

**interface** *ip-int-name*

### Context

[\[Tree\]](#) (tools>dump>service>id interface)

[\[Tree\]](#) (tools>perform>service>id interface)

### Full Context

tools dump service id interface

tools perform service id interface

### Description

This command specifies an IP interface for which service debugging tools are enabled.

## Parameters

### *ip-int-name*

Specifies the name of the IP interface, up to 32 characters.

## Platforms

All

## interface

## Syntax

**interface** [{{{*ip-address* | *ip-int-name*}}] [ **detail**] [ **family**] | **summary** | **exclude-services**]]

**interface** {*ip-address* | *ip-int-name*} **eth-cfm** [ **detail**]

**interface** {*ip-address* | *ip-int-name*} **mac** [ *ieee-address*]

**interface** {*ip-address* | *ip-int-name*} **statistics**

**interface** {*ip-address* | *ip-int-name*} **dist-cpu-protection** [ **detail**]

**interface** {*ip-address* | *ip-int-name*} **policy-accounting** [ **class** [*index*]]

**interface description**

**interface global-if-index** *global-if-index* [ **family**] [ **detail**]

**interface global-if-index** *global-if-index* **statistics**

## Context

[\[Tree\]](#) (show>router interface)

## Full Context

show router interface

## Description

This command displays the router IP interface table sorted by interface index.

## Parameters

### *ip-address*

Displays the interface information associated with the specified IP address.

#### Values

ipv4-address	a.b.c.d (host bits must be 0)
ipv6-address	x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	where:
	x: [0 to FFFF]H



d: [0 to 255]D

### **ip-int-name**

Displays the interface information associated with the specified IP interface name, up to 32 characters.

### **detail**

Displays detailed IP interface information. For **dist-cpu-protection**, **detail** includes the adapted operational rate parameters in the CLI output. The adapted Oper. parameters are only applicable if the policer is instantiated (for example, if the associated forwarding plane is operational, or for an interface if there is a physical port configured for the interface, or if the dynamic policers are allocated), otherwise values of 0 kb/s, and so on, are displayed. and includes the adapted operational rate parameters in the CLI output. The adapted Oper. parameters are only applicable if the policer is instantiated (for example, if the associated forwarding plane is operational, or for an interface if there is a physical port configured for the interface, or if the dynamic policers are allocated), otherwise values of 0 kb/s, and so on, are displayed.

### **family**

Specifies the router IP interface family to display.

**Values**    **ipv4** — Displays only those peers that have the IPv4 family enabled.  
              **ipv6** — Displays the peers that are IPv6-capable.

### **summary**

Displays summary IP interface information for the router.

### **exclude-services**

Displays IP interface information, excluding IP interfaces configured for customer services. Only core network IP interfaces are displayed.

### **eth-cfm**

Displays Ethernet CFM information.

### **mac**

Displays information associated with the MAC address.

### **ieee-address**

Displays the information associated with the specified IEEE address. The address is in the xx-xx-xx-xx-xx-xx or xx:xx:xx:xx:xx:xx format.

### **statistics**

Displays packet statistics for an interface on the router.



#### **Note:**

The **show router interface statistics** command also shows the MPLS statistics that are shown in using the **show router mpls interface statistics** command. This allows the operator to see MPLS statistics from interfaces that are not added to MPLS, such as a carrier's network interfaces. [Output Example](#) for an example of the MPLS fields that are displayed. These fields are displayed regardless of the state of MPLS.

**dist-cpu-protection**

Displays the distributed CPU protection parameters and status at the interface level.

**class**

Indicates whether to display accounting policy statistics for the source or destination class.

**Values** source-class, dest-class

**index**

Specifies an integer value for the accounting source or destination class index.

**Values** 1 to 255

**description**

Displays all interfaces in all routing contexts.

**global-if-index**

Specifies the global interface index value.

**Values** 1 to 262144

**Platforms**

All

**Output**

**Standard IP Interface Output**—The following output is an example of standard IP interface information, and [Table 196: Standard IP Interface Field Descriptions](#) describes the fields.

**Output Example**

```
*A:Dut-B# show router Base interface description
=====
Router Interface Summary
=====
Port/SAP                Admin Oper  Description
                        v4/v6
-----
system                  Up    Up/Dn
1/1/2                   Up    Up/Dn  this is the interface towards dut-d
1/1/3                   Up    Up/Dn
1/1/1                   Up    Up/Dn
1/1/10                  Up    Dn/Dn  interface_ies_1-with a long
                        description that wraps to multiple
                        lines.
```

```
**A:Dut-B# show router 20 interface description
=====
Router Interface Summary
=====
Port/SAP                Admin Oper  Description
                        v4/v6
-----
1/1/11                  Up    Dn/Dn  This is a very long description
                        for the interface vprn_1 which
                        belongs to vprn 1
```

```

=====
*A:SwSim100# show router interface "to101port1-1"
=====
Interface Table (Router: Base)
=====
Interface-Name          Adm      Opr(v4/v6)  Mode      Port/SapId
IP-Address              PfxState
MACSec      admin    subport    encap     ca
status
-----
to101port1-1           Up       Up/Down     Network   1/1/c1/1
100.101.1.1/24        n/a
Enabled      5        un-tag     ca-5
-----
Interfaces : 1
=====
    
```

```

=====
*A:SwSim100# show router interface
=====
Interface Table (Router: Base)
=====
Interface-Name          Adm      Opr(v4/v6)  Mode      Port/SapId
IPAddress              MACSec sp  PfxState
-----
loop1                   Up       Up/Down     Network   loopback
100.0.1.100/32        na      n/a
loop2                   Up       Up/Down     Network   loopback
100.0.2.100/32        na      n/a
system                  Up       Up/Down     Network   system
100.0.0.100/32        na      n/a
to101port1-1           Up       Up/Down     Network   1/1/c1/1
100.101.1.1/24        10     n/a
-----
Interfaces : 4
    
```

```

=====
A:ALA-A# show router interface 10.10.0.3/32
=====
Interface Table
=====
Interface-Name          Type IP-Address      Adm  Opr  Mode
-----
system                  Pri  10.10.0.3/32     Up   Up   Network
=====
A:ALA-A#
    
```

```

=====
A:ALA-A# show router interface exclude-services
=====
Interface Table
=====
Interface-Name          Type IP-Address      Adm  Opr  Mode
-----
system                  Pri  10.10.0.3/32     Up   Up   Network
to-ser1                 Pri  10.10.13.3/24    Up   Up   Network
to-ser4                 Pri  10.10.34.3/24    Up   Up   Network
to-ser5                 Pri  10.10.35.3/24    Up   Up   Network
to-ser6                 n/a  n/a               Up   Down Network
management              Pri  192.168.2.93/20  Up   Up   Network
=====
    
```

```

A:ALA-A#

*A:DUT-A>config>router# /show router interface "second" policy-accounting

=====
Accounting Statistics
=====
If Name          : second
Admin State      : Up                Oper State (v4/v6) : Up/Down
-----
Class            : source-class 1
Rx Fwd Packets   : 0                Rx Fwd Bytes       : 0
-----
Class            : source-class 10
Rx Fwd Packets   : 0                Rx Fwd Bytes       : 0
-----
Class            : dest-class 1      Policer            : 1
Rx Fwd Packets   : 0                Rx Fwd Bytes       : 0
-----
Class            : dest-class 2      Policer            : 5
Rx Fwd Packets   : 2000            Rx Fwd Bytes       : 356000
-----
Class            : dest-class 10     Policer            : 10
Rx Fwd Packets   : 0                Rx Fwd Bytes       : 0
=====
Policer Stats
-----
Policer          : 1
Drop Packets     : 0                Drop Bytes         : 0
Fwd Packets      : 0                Fwd Bytes          : 0
-----
Policer          : 2
Drop Packets     : 0                Drop Bytes         : 0
Fwd Packets      : 0                Fwd Bytes          : 0
-----
Policer          : 5
Drop Packets     : 1891            Drop Bytes         : 378200
Fwd Packets      : 109             Fwd Bytes          : 21800
-----
Policer          : 10
Drop Packets     : 0                Drop Bytes         : 0
Fwd Packets      : 0                Fwd Bytes          : 0
=====
    
```

Table 196: Standard IP Interface Field Descriptions

Label	Description
Interface-Name IF Name	The IP interface name
Type	n/a — no IP address has been assigned to the IP interface, so the IP address type is not applicable  Pri — the IP address for the IP interface is the Primary address on the IP interface  Sec — the IP address for the IP interface is a secondary address on the IP interface

Label	Description
IP-Address	The IP address and subnet mask length of the IP interface n/a — indicates no IP address has been assigned to the IP interface
Adm Admin State	Down — the IP interface is administratively disabled Up — the IP interface is administratively enabled
Opr Oper State	Down — the IP interface is operationally disabled Up — the IP interface is operationally disabled
Mode	Network — the IP interface is a network/core IP interface Service — the IP interface is a service IP interface
Port/SAP Id	The physical network port or the SAP identifier associated with the IP interface
MACSec	Lists the MACsec settings for the IP interface
Class	Specifies the source or destination class index
Policer	The policer ID
Rx Fwd Packets	The number of received forwarded packets
Rx Fwd Bytes	The number of received forwarded bytes
Drop Packets	The number of dropped packets
Drop Bytes	The number of dropped bytes
Fwd Packets	The number of forwarded packets
Fwd Bytes	The number of forwarded bytes

**Detailed IP Interface Output** — The following output is an example of detailed IP interface information, and [Table 197: Detailed IP Interface Field Descriptions](#) describes the fields.

**Output Example**

```
*A:SwSim100# show router interface "to101port1-1" detail
=====
Interface Table (Router: Base)
=====
-----
Interface
-----
If Name       : to101port1-1
Admin State   : Up
Down Reason V6 : ifProtoOperDown
Oper (v4/v6)  : Up/Down
Protocols     : OSPFv2 ISIS LDP
IP Addr/mask  : 100.101.1.1/24
IGP Inhibit   : Disabled
HoldUp-Time   : 0
Address Type  : Primary
Broadcast Address : Host-ones
Track Srrp Inst : 0
```

```
-----
Details
-----
Description      : (Not Specified)
If Index         : 4                      Virt. If Index   : 4
Last Oper Chg   : 07/23/2018 17:55:49  Global If Index  : 3
Lag Link Map Prof: none
Lag Per Link Hash
Class           : 1                      Weight          : 1
Port Id        : 1/1/c1/1
Macsec: enabled, subport 5, encap-match un-tag, ca ca-5
TOS Marking    : Trusted                 If Type         : Network
-----
```

```
*A:Dut-B>config>router>if# show router interface "to-ASBR-F" detail
=====
Interface Table (Router: Base)
=====
-----
Interface
-----
If Name          : to-ASBR-F
Admin State     : Up                    Oper (v4/v6)    : Up/Up
Protocols       : ISIS MPLS RSVP LDP
IP Addr/mask    : 10.10.14.2/24           Address Type    : Primary
IGP Inhibit     : Disabled              Broadcast Address : Host-ones
HoldUp-Time    : 0                      Track Srrp Inst : 0
IPv6 Address    : 3ffe::a0a:e02/120
IPv6 Address Type: Primary
IPv6 Addr State : PREFERRED
CGA modifier    : (Not Specified)
HoldUp-Time    : 0                      Track Srrp Inst : 0
Link Lcl Address : fe80::208b:1ff:fe01:8/64
Link Lcl State  : PREFERRED
-----
Details
-----
Description      : (Not Specified)
If Index         : 4                      Virt. If Index   : 4
Last Oper Chg   : 10/15/2018 15:43:04  Global If Index  : 3
Lag Link Map Prof: none
Lag Per Link Hash
Class           : 1                      Weight          : 1
Port Id        : 1/1/8
TOS Marking    : Trusted                 If Type         : Network
Egress Filter  : none                    Ingress Filter  : none
Egr IPv6 Flt   : none                    Ingr IPv6 Flt   : none
SNTP B.Cast    : False                   Network QoS Policy: 1
MAC Address    : 22:8b:01:01:00:08       Mac Accounting  : Disabled
Ingress stats  : Disabled                 IPv6 DAD        : Enabled
TCP MSS V4     : 0                       TCP MSS V6      : 0
ARP Timeout    : 14400s                   IPv6 Nbr ReachTime: 30s
ARP Retry Timer : 5000ms                    IPv6 stale time : 14400s
ARP Limit      : Disabled                 IPv6 Nbr Limit  : Disabled
ARP Threshold  : Disabled                 IPv6 Nbr Threshold: Disabled
ARP Limit Log On*: Disabled               IPv6 Nbr Log Only : Disabled
ARP Learn Unsoli*: Disabled               ND Learn Unsolici*: None
ARP Proactive Re*: Disabled               ND Proactive Refr*: None
IP MTU         : (default)
IP Oper MTU    : 1500
ARP Populate   : Disabled
Cflowd (unicast) : None                    Cflowd (multicast): None
LdpSyncTimer  : None                      Strip-Label     : Disabled
LSR Load Balance : system
-----
```

```

EGR Load Balance : both
Vas If Type      : none
TEID Load Balance: Disabled
SPI Load Balance : Disabled
uRPF Chk        : disabled
uRPF Ipv6 Chk   : disabled
uRPF Select VPRN : False
PTP HW Assist    : Disabled
Rx Pkts         : 996
Rx V4 Pkts      : N/A
Rx V6 Pkts      : N/A
Tx Pkts         : 1583
Tx V4 Pkts      : 1161
Tx V4 Discard Pk*: 0
Tx V6 Pkts      : 422
Tx V6 Discard Pk*: 0
Tx DBcast Dis. P*: 0
Mpls Rx Pkts    : 249
Mpls Tx Pkts    : 340
GRE Termination : Disabled
Inter-AS selective ILM untrusted : Disabled
Untrusted default forwarding : forward
Rx Bytes        : 94024
Rx V4 Bytes     : N/A
Rx V6 Bytes     : N/A
Tx Bytes        : 153481
Tx V4 Bytes     : 110788
Tx V4 Discard Byt*: 0
Tx V6 Bytes     : 42693
Tx V6 Discard Byt*: 0
Tx DBcast Dis. Byt*: 0
Mpls Rx Bytes   : 24301
Mpls Tx Bytes   : 32109
    
```

Table 197: Detailed IP Interface Field Descriptions

Label	Description
If Name	The IP interface name
Admin State	Down — the IP interface is administratively disabled Up — the IP interface is administratively enabled
Oper (v4/v6)	Down — the IP interface is operationally disabled Up — the IP interface is operationally enabled
IP Addr/mask	The IP address and subnet mask length of the IP interface Not Assigned — indicates no IP address has been assigned to the IP interface
IPv6 Addr	The IPv6 address of the interface
If Index	The interface index of the IP router interface
Virt If Index	The virtual interface index of the IP router interface
Last Oper Change	The last change in operational status
Global If Index	The global interface index of the IP router interface
Sap ID	The SAP identifier
TOS Marking	The ToS byte value in the logged packet
If Type	Network — the IP interface is a network/core IP interface Service — the IP interface is a service IP interface

Label	Description
SNTP B.cast	Displays if the <b>broadcast-client</b> global parameter is configured
IES ID	The IES identifier
QoS Policy	The QoS policy ID associated with the IP interface
MAC Address	The MAC address of the interface
Arp Timeout	The ARP timeout for the interface, in seconds, which is the time an ARP entry is maintained in the ARP cache without being refreshed
ICMP Mask Reply	False — the IP interface will not reply to a received ICMP mask request True — the IP interface will reply to a received ICMP mask request
Arp Populate	Displays whether ARP is enabled or disabled
Host Conn Verify	The host connectivity verification
LdpSyncTimer	Specifies the IGP/LDP sync timer value
uRPF Chk	Specifies whether unicast RPF (uRPF) Check is enabled on this interface
uRPF Iv6 Chk	Specifies whether unicast RPF (uRPF) Check IPv6 is enabled on this interface
PTP HW Assist	Specifies whether the PTP Hardware Assist function is enabled on this interface
cflowd	Specifies the type of cflowd analysis that is applied to the interface acl — ACL cflowd analysis is applied to the interface interface — interface cflowd analysis is applied to the interface none — no cflowd analysis is applied to the interface
Inter-AS selective ILM untrusted	Specifies whether the inter-AS selective ILM untrusted function is enabled on this interface
Untrusted default forwarding	Specifies whether the untrusted default forwarding function is enabled on this interface

**Statistics IP Interface Output** — The following output is an example of router IP interface statistics when **enable-interface-statistics** is enabled, and [Table 198: Statistics IP Interface Fields](#) describes the fields.

**Output Example**

```
A:ALA-A# show router interface "to_ixia" statistics
=====
```



```

Interface Statistics
=====
If Name       : to_Ixia
Admin State   : Up
Oper (v4/v6)  : Up/Up
Rx Pkts      : 6244
Rx V4 Pkts   : 3122
Rx V6 Pkts   : 3122
Tx Pkts      : 0
Tx V4 Pkts   : 0
Tx V4 Discard Pk*: 0
Tx V6 Pkts   : 0
Tx V6 Discard Pk*: 0
uRPF Chk Fail Pk*: 6244
uRPF Fail V4 Pk : 3122
uRPF Fail V6 Pk : 3122
Mpls Rx Pkts : 0
Mpls Tx Pkts : 0
Rx Bytes     : 599424
Rx V4 Bytes  : 299712
Rx V6 Bytes  : 299712
Tx Bytes     : 0
Tx V4 Bytes  : 0
Tx V4 Discard Byt*: 0
Tx V6 Bytes  : 0
Tx V6 Discard Byt*: 0
uRPF Fail Bytes : 487032
uRPF Fail V4 Byt : 243516
uRPF Fail V6 Byt : 243516
Mpls Rx Bytes : 0
Mpls Tx Bytes : 0
=====
    
```

Table 198: Statistics IP Interface Fields

Label	Description
lfname	The interface name
Admin State	The administrative status of the router interface
Oper	The operational status of the router instance

**Summary IP Interface Output** — The following output is an example of summary IP information, and [Table 199: Summary IP Interface Fields](#) describes the fields.

**Output Example**

```

A:ALA-A# show router interface summary
=====
Router Summary (Interfaces)
=====
Instance Router Name           Interfaces Admin-Up Oper-Up
-----
1         Base                   7         7         5
=====
    
```

Table 199: Summary IP Interface Fields

Label	Description
Instance	The router instance number
Router Name	The name of the router instance
Interfaces	The number of IP interfaces in the router instance
Admin-Up	The number of administratively enabled IP interfaces in the router instance

Label	Description
Oper-Up	The number of operationally enabled IP interfaces in the router instance

**Global-if-index Output** — The following output is an example of summary global-if-index information, and [Table 200: Global-if-index Interface Field Descriptions](#) describes the fields.

**Output Example**

```
*A:SwSim102# show router interface global-if-index 1
=====
Interface Table (Router: Base)
=====
Interface-Name      Adm      Opr(v4/v6)  Mode      Port/SapId
IP-Address          PfxState
-----
loop1
100.0.1.2/32        Up        Up/Down     Network  loopback
n/a
-----
Interfaces : 1
=====
*A:SwSim102# show router interface global-if-index 1 detail
=====
Interface Table (Router: Base)
=====
Interface
-----
If Name           : loop1
Admin State       : Up
Down Reason V6   : ifProtoOperDown
Protocols         : OSPFv2
IP Addr/mask     : 100.0.1.2/32
IGP Inhibit      : Disabled
HoldUp-Time      : 0
Address Type     : Primary
Broadcast Address : Host-ones
Track Srrp Inst  : 0
Oper (v4/v6)     : Up/Down
-----
Details
-----
Description      : (Not Specified)
If Index         : 2
Virt. If Index   : 2
Last Oper Chg   : 03/15/2018 01:00:02
Global If Index  : 1
Lag Link Map Prof: none
Lag Per Link Hash
Class           : 1
Weight         : 1
Port Id        : loopback
TOS Marking    : Trusted
If Type        : Network
Egress Filter  : none
Ingress Filter : none
Egr IPv6 Flt   : none
Ingr IPv6 Flt  : none
SNTP B.Cast    : False
Network QoS Policy: 1
MAC Address    : d6:ce:ff:00:00:00
Mac Accounting : Disabled
IPv6 DAD       : Enabled
Ingress stats  : Disabled
TCP MSS V4     : 0
TCP MSS V6     : 0
IPv6 Nbr ReachTime: 30s
ARP Timeout    : 14400s
IPv6 stale time : 14400s
ARP Retry Timer : 5000ms
IPv6 Nbr Limit : Disabled
ARP Limit      : Disabled
IPv6 Nbr Threshold: Disabled
ARP Threshold  : Disabled
IPv6 Nbr Log Only : Disabled
ARP Limit Log On* : Disabled
ND Learn Unsoli* : None
ARP Proactive Re* : Disabled
ND Proactive Refr* : None
IP MTU         : (default)
IP Oper MTU    : 1500
```

```
ARP Populate      : Disabled
Cflowd (unicast) : None
LdpSyncTimer     : None
LSR Load Balance : system
EGR Load Balance : both
Vas If Type      : none
TEID Load Balance: Disabled
SPI Load Balance : Disabled
uRPF Chk         : disabled
uRPF Ipv6 Chk    : disabled
uRPF Select VPRN : False
Rx Pkts          : 0
Rx V4 Pkts       : N/A
Rx DBcast Drop P*: 0
Rx V6 Pkts       : N/A
Tx Pkts          : 0
Tx V4 Pkts       : 0
Tx V4 Discard Pk*: 0
Tx V6 Pkts       : 0
Tx V6 Discard Pk*: 0
Mpls Rx Pkts     : 0
Mpls Tx Pkts     : 0
OperDCpuProtPcly : N/A
Proxy ARP Details
Rem Proxy ARP    : Disabled
Policies         : none

Local Proxy ARP  : Disabled

Proxy Neighbor Discovery Details
Local Pxy ND     : Disabled
Policies         : none
ICMP Details
Redirects        : Number - 100
Unreachables    : Number - 100
TTL Expired     : Number - 100
Parameter Problem: Number - 100
ICMP Mask Reply : True
ICMPv6 Details
Packet Too Big  : Number - 100
Parameter Problem: Number - 100
Redirects       : Number - 100
Time Exceeded   : Number - 100
Unreachables   : Number - 100
IPCP Address Extension Details
Peer IP Addr    : Not configured
Peer Pri DNS Addr: Not configured
Peer Sec DNS Addr: Not configured

Network Domains Associated
default
-----
Admin Groups
-----
No Matching Entries
-----
Srlg Groups
-----
No Matching Entries
-----
QoS Queue-Group Redirection Details
-----
Ingress FP QGrp : (none)
Egress Port QGrp : (none)
Ing FP QGrp Inst : (none)
Egr Port QGrp Inst: (none)

Rx Bytes          : 0
Rx V4 Bytes       : N/A
Rx DBcast Drop By*: 0
Rx V6 Bytes       : N/A
Tx Bytes          : 0
Tx V4 Bytes       : 0
Tx V4 Discard Byt*: 0
Tx V6 Bytes       : 0
Tx V6 Discard Byt*: 0
Mpls Rx Bytes     : 0
Mpls Tx Bytes     : 0
```

=====

\* indicates that the corresponding row element may have been truncated.

Table 200: Global-if-index Interface Field Descriptions

Label	Description
Interface-Name	The IP interface name
Type	n/a — no IP address has been assigned to the IP interface, so the IP address type is not applicable Pri — the IP address for the IP interface is the Primary address on the IP interface Sec — the IP address for the IP interface is a secondary address on the IP interface
IP-Address	The IP address and subnet mask length of the IP interface n/a — indicates no IP address has been assigned to the IP interface
Adm	Down — the IP interface is administratively disabled Up — the IP interface is administratively enabled
Opr	Down — the IP interface is operationally disabled Up — the IP interface is operationally disabled
Mode	Network — the IP interface is a network/core IP interface Service — the IP interface is a service IP interface
Port/SAP Id	The physical network port or the SAP identifier associated with the IP interface

The following output is an example of Distributed CPU Protection Policer Output information.

[Table 201: Show Distributed CPU Protection Policer Output Fields](#) describes Distributed CPU Protection Policer output fields.

### Output Example

```
*A:Dut-A# show router interface "test" dist-cpu-protection detail
=====
Interface "test" (Router: Base)
=====
Distributed CPU Protection Policy : dcpuPol
-----
Statistics/Policer-State Information
=====
Static Policer
-----
Policer-Name       : staticArpPolicer
Card/FP           : 4/1           Policer-State       : Exceed
Protocols Mapped  : arp
Exceed-Count      : 10275218
```

```

Detec. Time Remain : 29 seconds      Hold-Down Remain. : none
Operational (adapted) Rate Parameters:
  Oper. Packets    : 100 ppi          Oper. Within      : 1 seconds
  Oper. Initial Delay: none
  Oper. Depth      : 100 packets
-----
Local-Monitoring Policer
-----
Policer-Name      : localMonitor
Card/FP           : 4/1              Policer-State     : Exceed
Protocols Mapped  : icmp, ospf
Exceed-Count      : 8019857
All Dyn-Plcr Alloc. : True
Operational (adapted) Rate Parameters:
  Oper. Packets    : 200 ppi          Oper. Within      : 1 seconds
  Oper. Initial Delay: none
  Oper. Depth      : 0 packets
-----
Dynamic-Policer (Protocol)
-----
Protocol(Dyn-Plcr) : icmp
Card/FP            : 4/1              Protocol-State    : Exceed
Exceed-Count       : 1948137
Detec. Time Remain : 29 seconds      Hold-Down Remain. : none
Dyn-Policer Alloc. : True
Operational (adapted) Rate Parameters:
  Oper. Kbps       : 25 kbps          Oper. MBS         : 256 bytes
  Oper. Depth      : 274 bytes
-----
Protocol(Dyn-Plcr) : ospf
Card/FP            : 4/1              Protocol-State    : Exceed
Exceed-Count       : 1487737
Detec. Time Remain : 29 seconds      Hold-Down Remain. : none
Dyn-Policer Alloc. : True
Operational (adapted) Rate Parameters:
  Oper. Kbps       : 25 kbps          Oper. MBS         : 256 bytes
  Oper. Depth      : 284 bytes
-----
=====
    
```

Table 201: Show Distributed CPU Protection Policer Output Fields

Label	Description
Distributed CPU Protection Policy	Displays the DCP policy assigned to the object.
Policer-Name	Displays the configured name of the static policer
Card/FP	Displays the card and FP identifier. FP identifies the instance of the FP (FastPath) chipset. Some cards have a single FP and some cards can contain multiple FPs (for example, an XCM can house multiple FPs via its two XMAS).
Policer-State	Displays the state of the policer with the following potential values:  <i>Exceed</i> - The policer has been detected as nonconforming to the associated DCP policy parameters (packets exceeded)

Label	Description
	<p>the configured rate and the DCP polling process identified this occurrence)</p> <p><i>Conform</i> - The policer has been detected as conforming to the associated DCP policy parameters (rate)</p> <p><i>not-applicable</i> - newly-created policers or policers that are not currently instantiated. This includes policers configured on line cards that are not in service.</p>
Protocols Mapped	<p>Displays a list of protocols that are configured to map to the particular policer.</p>
Oper. xyz fields	<p>The actual hardware may not be able to perfectly rate limit to the exact configured rate parameters in a DCP policy. In this case the configured rate parameters will be adapted to the closest supported rate. These adapted operational values are displayed in CLI when the <b>detail</b> keyword is included in the show command. The adapted Oper. parameters are only applicable if the policer is instantiated (for example, if the associated forwarding plane is operational, or for an interface if there is a physical port configured for the interface, or if the dynamic policers are allocated), otherwise values of 0 kb/s, and so on, are displayed.</p> <p><i>Oper. Kbps</i> - Displays the adapted "kilobits-per-second" value for DCP "kbps" rates</p> <p><i>Oper. MBS</i> - Displays the adapted "mbs size" value for DCP "kbps" rates</p> <p><i>Oper. Depth</i> - Displays the calculated policer bucket depth in packets (for DCP "packets" rates) or in bytes (for DCP "kbps" rates)</p> <p><i>Oper. Packets</i> - Displays the adapted "ppi" value for DCP "packets" rates</p> <p><i>Oper. Within</i> - Displays the adapted "within seconds" value for DCP "packets" rates</p> <p><i>Oper. Init. Delay</i> - Displays the adapted "initial-delay packets" value for DCP "packets" rates</p>
Exceed-Count	<p>Displays the count of packets exceeding the policing parameters since the given policer was previously declared as conforming or newly-instantiated. This counter has the same behavior as the exceed counter in the DCP the log events – they are baselined (reset) when the policer transitions to conforming.</p>
Detec. Time Remain	<p>Displays the remaining time in the detection-time countdown during which a policer in the exceed state is being monitored to see if it conforms again.</p>

Label	Description
Hold-Down Remain	Displays the remaining time in the hold-down countdown during which a policer is treating all packets as exceeding.
All Dyn-Plcr Alloc.	Indicates that all the dynamic enforcement policers have been allocated and instantiated for a given local-monitor.
Dyn-Policer Alloc.	Indicates that a dynamic policer has been instantiated.

## interface

### Syntax

**interface** [*ip-int-name*] [**detail**] [*family*]

**interface resource-failures** [*family*]

### Context

[\[Tree\]](#) (show>router>ldp interface)

### Full Context

show router ldp interface

### Description

This command displays configuration information about LDP interfaces.

### Parameters

#### *ip-int-name*

The name of an existing interface. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

#### **detail**

Displays detailed information.

#### *family*

Displays either IPv4 or IPv6 active LDP information.

#### **resource-failures**

Displays which interfaces are in overload.

### Platforms

All

### Output

LDP Interface Output

[Table 202: LDP Interface Output Fields](#) describes the LDP interface output fields.

Table 202: LDP Interface Output Fields

Label	Description
Interface	Specifies the interface associated with the LDP instance.
Adm	Up — The LDP is administratively enabled. Down — The LDP is administratively disabled.
Opr	Up — The LDP is operationally enabled. Down — The LDP is operationally disabled.
Hello Factor	The value by which the hello timeout should be divided to give the hello time, for example, the time interval (in s), between LDP hello messages. LDP uses hello messages to discover neighbors and to detect loss of connectivity with its neighbors.
Hold Time	The hello time, also known as hold time. It is the time interval (in s), that LDP waits before declaring a neighbor to be down. Hello timeout is local to the system and is sent in the hello messages to a neighbor.
KA Factor	The value by which the keepalive timeout should be divided to give the keepalive time, for example, the time interval (in s), between LDP keepalive messages. LDP keepalive messages are sent to keep the LDP session from timing out when no other LDP traffic is being sent between the neighbors.
KA Timeout	The time interval (in s), that LDP waits before tearing down a session. If no LDP messages are exchanged during this time interval, the LDP session is torn down. Generally the value is configured to be 3 times the keepalive time (the time interval between successive LDP keepalive messages).

### Output Example

```
*A:Dut-A# show router ldp interface
=====
LDP Interfaces
=====
Interface           Adm/Opr
Sub-Interface(s)   Adm/Opr  Hello Hold  KA   KA   Transport
                  Fctr Time Fctr Time Fctr Time Address
-----
ip-10.10.1.1       Up/Up
  ipv4              Up/Up    3    15   3    30   System
  ipv6              Up/Up    3    15   3    30   System
ip-10.10.2.1       Up/Up
  ipv4              Up/Up    3    15   3    30   System
  ipv6              Up/Up    3    15   3    30   System
-----
No. of Interfaces: 2
=====
*A:Dut-A#
*A:Dut-A# show router ldp interface "ip-10.10.1.1"
=====
LDP Interfaces
=====
```



```

Interface                               Adm/Opr
Sub-Interface(s)                       Adm/Opr  Hello Hold  KA   KA   Transport
                                           Fctr  Time Fctr  Time Address
-----
ip-10.10.1.1                            Up/Up
  ipv4                                   Up/Up   3    15   3    30   System
  ipv6                                   Up/Up   3    15   3    30   System
-----
No. of Interfaces: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp interface "ip-10.10.1.1" detail
=====
LDP Interfaces
=====
Interface "ip-10.10.1.1"
=====
BASE
-----
Admin State       : Up           Oper State       : Up
BFDD Status      : Disabled
-----
IPv4
-----
IPv4 Admin State : Up           IPv4 Oper State : Up
Last Oper Chg   : 0d 00:37:59
Hold Time       : 15           Hello Factor     : 3
Oper Hold Time  : 15
Keepalive Timeout : 30       Keepalive Factor : 3
Transport Addr  : System      Last Modified    : 02/27/15 23:23:19
Active Adjacencies : 1
Local LSR Type  : System
Local LSR       : None
IPv4 Pfx Fec Cap : Enabled     IPv6 Pfx Fec Cap : Enabled
IPv4 P2MP Fec Cap : Enabled     IPv6 P2MP Fec Cap: Enabled
-----
IPv6
-----
IPv6 Admin State : Up           IPv6 Oper State : Up
Last Oper Chg   : 0d 00:37:36
Hold Time       : 15           Hello Factor     : 3
Oper Hold Time  : 15
Keepalive Timeout : 30       Keepalive Factor : 3
Transport Addr  : System      Last Modified    : 02/27/15 23:23:19
Active Adjacencies : 1
Local LSR Type  : System
Local LSR       : None
IPv4 Pfx Fec Cap : Enabled     IPv6 Pfx Fec Cap : Enabled
IPv4 P2MP Fec Cap : Enabled     IPv6 P2MP Fec Cap: Enabled
=====
No. of Interfaces: 1
=====
*A:Dut-A#
*A:Dut-A# show router ldp interface "ip-10.10.1.1" detail ipv6
=====
LDP IPv6 Interfaces
=====
Interface "ip-10.10.1.1"
=====
    
```

```
-----  
BASE  
-----  
Admin State      : Up           Oper State      : Up  
BFD Status       : Disabled  
-----  
IPv6  
-----  
IPv6 Admin State : Up           IPv6 Oper State : Up  
Last Oper Chg    : 0d 00:37:47  
Hold Time       : 15           Hello Factor    : 3  
Oper Hold Time  : 15  
Keepalive Timeout : 30         Keepalive Factor : 3  
Transport Addr  : System      Last Modified   : 02/27/15 23:23:19  
Active Adjacencies : 1  
Local LSR Type   : System  
Local LSR        : None  
IPv4 Pfx Fec Cap : Enabled      IPv6 Pfx Fec Cap : Enabled  
IPv4 P2MP Fec Cap : Enabled     IPv6 P2MP Fec Cap: Enabled  
=====
```

No. of Interfaces: 1  
=====

```
*A:Dut-A#  
  
*A:Dut-A# show router ldp interface resource-failures  
=====
```

LDP IPv4 Interface Resource Failures  
=====

No Matching Entries Found  
=====

LDP IPv6 Interface Resource Failures  
=====

No Matching Entries Found  
=====

```
*A:Dut-A# show router ldp interface resource-failures ipv6  
=====
```

LDP IPv6 Interface Resource Failures  
=====

No Matching Entries Found  
=====

```
*A:Dut-A#
```

## interface

### Syntax

**interface** [*ip-int-name*] [**statistics**] [**ipv4** | **ipv6**]

### Context

[\[Tree\]](#) (clear>router>ldp interface)

### Full Context

clear router ldp interface

### Description

This command restarts or clears statistics for LDP interfaces.

## Parameters

### *ip-int-name*

The name of an existing interface. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### *family*

Specifies to clear IPv4 or IPv6 information.

## Platforms

All

## Output

### Output Example

```
*A:Dut-A# clear router ldp interface "ip-10.10.1.1" ipv4
*A:Dut-A#

*A:Dut-A# clear router ldp interface "ip-10.10.1.1" ipv6
*A:Dut-A#
```

## interface

## Syntax

**interface** *ip-int-name*

## Context

[\[Tree\]](#) (tools>dump>router>ldp interface)

## Full Context

tools dump router ldp interface

## Description

This command dumps information for an LDP interface.

## Parameters

### *ip-int-name*

Specifies the name of an existing router.

## Platforms

All

## interface

### Syntax

```
interface [ip-int-name | ip-address] [label-map label]  
interface [ip-int-name | ip-address] statistics [ aux-stats]
```

### Context

[\[Tree\]](#) (show>router>mpls interface)

### Full Context

```
show router mpls interface
```

### Description

This command displays MPLS interface information.

### Parameters

#### *ip-int-name*

Specifies the name of the network IP interface. An interface name cannot be in the form of an IP address. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

#### *ip-address*

Specifies the system or network interface IP address.

#### *label-map label*

Specifies the MPLS label on which to match.

**Values** 32 to 1048575

#### **statistics**

Displays the MPLS interface name and the number of packets and octets sent and received on an MPLS interface.

#### **aux-stats**

Displays auxiliary MPLS statistics next to the default MPLS statistics.

### Platforms

All

### Output

The following output is an example of MPLS interface information.

[Table 203: MPLS Interface Output Fields](#) describes MPLS interface output fields.

Table 203: MPLS Interface Output Fields

Label	Description
Interface	The interface name.
Port-id	The port ID.
Adm	Specifies the administrative state of the interface.
Opr	Specifies the operational state of the interface.
Te-metric	Specifies the traffic engineering metric used on the interface.
Srlg Groups	Specifies the shared risk loss group (SRLG) name(s).
Interfaces	The total number of interfaces.
Transmitted	Displays the number of packets and octets transmitted from the interface.
Received	Displays the number of packets and octets received.
In Label	Specifies the ingress label.
In I/F	Specifies the ingress interface.
Out Label	Specifies the egress label.
Out I/F	Specifies the egress interface.
Next Hop	Specifies the next hop IP address for the static LSP.
Type	Specifies whether the label value is statically or dynamically assigned.

### Output Example

```
*A:SRU4>config>router>mpls# show router mpls interface
=====
MPLS Interfaces
=====
Interface                Port-id          Adm   Opr   TE-metric
-----
system                   system           Up    Up    None
  Admin Groups           None
  Srlg Groups            None
sr4-1                     1/1/4           Up    Up    None
  Admin Groups           None
  Srlg Groups            3440
ess-7-1                   3/2/4           Up    Up    None
  Admin Groups           None
  Srlg Groups            45100
ess-7-2                   3/2/5           Up    Up    None
  Admin Groups           None
  Srlg Groups            45110
...
g7600                    3/1/2           Up    Up    None
```

```

Admin Groups          None
Srlg Groups          41.80
m160
Admin Groups          None
Srlg Groups          420.40
-----
Interfaces : 35
=====
*A:SRU4>config>router>mpls#

*A:SRU4>config>router>mpls# show router mpls interface "hubA"
=====
MPLS Interface : hubA
=====
Interface            Port-id          Adm   Opr   TE-metric
-----
hubA                  3/2/8           Up    Up    None
  Admin Groups        None
  Srlg Groups         44.200
-----
Interfaces : 1
=====
*A:SRU4>config>router>mpls#

*A:SRU4>config>router>mpls# show router mpls interface "hubA" label-map 203
=====
MPLS Interface : hubA (Label-Map 203)
=====
In Label  In I/F    Out Label  Out I/F    Next Hop          Type    Adm  Opr
-----
203       3/2/8    403        1/1/9      10.22.10.3       Static  Up   Up
-----
Interfaces : 1
=====
*A:SRU4>config>router>mpls#

*A:SRU4>config>router>mpls# show router mpls interface statistics
=====
MPLS Interface (statistics)
=====
Interface      : aps-1
  Transmitted  : Pkts - 76554          Octets - 7930285
  Received    : Pkts - 17068       Octets - 3626842

Interface      : aps-2
  Transmitted  : Pkts - 0            Octets - 0
  Received    : Pkts - 1311       Octets - 219888

Interface      : aps-3
  Transmitted  : Pkts - 0            Octets - 0
  Received    : Pkts - 3          Octets - 234

Interface      : sr4-1
  Transmitted  : Pkts - 0            Octets - 0
  Received    : Pkts - 0          Octets - 0

Interface      : ess-7-1
  Transmitted  : Pkts - 113537       Octets - 15058332
  Received    : Pkts - 13193        Octets - 1091492

Interface      : ess-7-2
    
```

```

Transmitted : Pkts - 166133      Octets - 22762482
Received    : Pkts - 16672       Octets - 1368464

Interface   : ess-7-3
Transmitted : Pkts - 122934      Octets - 11033246
Received    : Pkts - 12256       Octets - 1026826
...

Interface   : m160
Transmitted : Pkts - 17188024    Octets - 2183076528
Received    : Pkts - 677745     Octets - 59367236
=====
*A:SRU4>config>router>mpls#
    
```

```

show router mpls interface statistics aux-stats
=====
MPLS Interface (statistics)
=====
Interface   : intf1
Transmitted : Pkts - 0           Octets - 0
Received    : Pkts - 0           Octets - 0
Transmitted : SR-Pkts - 0        SR-Octets - 0
Received    : SR-Pkts - 0        SR-Octets - 0

Interface   : intf2
Transmitted : Pkts - 0           Octets - 0
Received    : Pkts - 0           Octets - 0
Transmitted : SR-Pkts - 0        SR-Octets - 0
Received    : SR-Pkts - 0        SR-Octets - 0
    
```

## interface

### Syntax

**interface** [*ip-int-name* | *ip-address*] **statistics** [ **detail**]

### Context

[\[Tree\]](#) (show>router>rsvp interface)

### Full Context

show router rsvp interface

### Description

This command shows RSVP interfaces.

### Parameters

#### *ip-int-name*

Specifies the network IP interface. An interface name cannot be in the form of an IP address. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**ip-address**

Specifies the system or network interface IP address.

**statistics**

Displays the RSVP interface name and counts of various RSVP packets sent and received on the interface.

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of RSVP interface information.

[Table 204: RSVP Interface Output Fields](#) describes RSVP interface output fields.

*Table 204: RSVP Interface Output Fields*

Label	Description
Interface	The name of the IP interface.
Total Sessions	The total number of RSVP sessions on this interface. This count includes sessions that are active as well as sessions that have been signaled but a response has not yet been received.
Active Sessions	The total number of active RSVP sessions on this interface.
Total BW (Mbps)	The amount of bandwidth in Mb/s available to be reserved for the RSVP protocol on the interface.
Resv BW (Mbps)	The amount of bandwidth in Mb/s reserved on this interface. A value of zero (0) indicates that no bandwidth is reserved.
Adm	Down — The RSVP interface is administratively disabled. Up — The RSVP interface is administratively enabled.
Bfd	Yes — BFD is enabled on the RSVP interface. No — BFD is disabled on the RSVP interface.
Opr	Down — The RSVP interface is operationally down. Up — The RSVP interface is operationally up.
Port ID	Specifies the physical port bound to the interface.
Active Resvs	The total number of active RSVP sessions that have reserved bandwidth.
Subscription	Specifies the percentage of the link bandwidth that RSVP can use for reservation. When the value is zero (0), no new sessions are permitted on this interface.



Label	Description
Port Speed	Specifies the speed for the interface.
Unreserved BW	Specifies the amount of unreserved bandwidth.
Reserved BW	Specifies the amount of bandwidth in Mb/s reserved by the RSVP session on this interface. A value of zero (0) indicates that no bandwidth is reserved.
Total BW	Specifies the amount of bandwidth in Mb/s available to be reserved for the RSVP protocol on this interface.
Aggregate	Aggregate messages are used to pack multiple RSVP messages into a single packet to reduce the network overhead. When the value is true, RSVP negotiates with each neighbor and gets consensus before sending aggregate messages.
Hello Interval	Specifies the length of time (in s) between the hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network. When the value is zero (0), the sending of hello messages is disabled.
Refresh Time	Specifies the interval between the successive Path and Resv refresh messages. RSVP declares the session down after it misses $((\text{keep-multiplier} + 0.5) * 1.5 * \text{refresh-time})$ consecutive refresh messages.
Hello Timeouts	The total number of hello messages that timed out on this RSVP interface.
Neighbors	The IP address of the RSVP neighbor.
Sent	The total number of error free RSVP packets that have been transmitted on the RSVP interface.
Recd	The total number of error free RSVP packets received on the RSVP interface.
Total Packets	The total number of RSVP packets, including errors, received on the RSVP interface.
Bad Packets	The total number of RSVP packets with errors transmitted on the RSVP interface.
Paths	The total number of RSVP PATH messages received on the RSVP interface.
Path Errors	The total number of RSVP PATH ERROR messages transmitted on the RSVP interface.
Path Tears	The total number of RSVP PATH TEAR messages received on the RSVP interface.
Resvs	The total number of RSVP RESV messages received on the RSVP interface.
Resv Confirms	The total number of RSVP RESV CONFIRM messages received on the RSVP interface.
Resv Errors	Total RSVP RESV ERROR messages received on RSVP interface.
Resv Tears	Total RSVP RESV TEAR messages received on RSVP interface.

Label	Description
Refresh Summaries	Total RSVP RESV summary refresh messages received on interface.
Refresh Acks	Total RSVP RESV acknowledgment messages received when refresh reduction is enabled on the RSVP interface.
Bundle Packets	Total RSVP RESV bundled packets received on the RSVP interface.
Hellos	Total RSVP RESV HELLO REQ messages received on the interface.
DBw Multiplier	Displays the configured dark bandwidth multiplier.
DBw Up Threshold	Displays the configured dark bandwidth up threshold (per interface or inherited).
DBw Down Threshold	Displays the configured dark bandwidth down threshold (per interface or inherited).
DBw Sample Index	Displays the index of the dark bandwidth current sample.
DBw Last Sample	Displays the latest sampled value of the dark bandwidth.
Latest Cal DBw	Displays the latest value of the calculated dark bandwidth (calculated over average interval = sample-interval X sample-multiplier). The value indicated here has already been multiplied by the dbw-multiplier.
Advertised MRLB	Displays the value of the latest advertised Maximum Reservable Link Bandwidth.

### Output Example

```
*A:Dut-A>config>router>mpls>lsp$ /show router rsvp interface "ip-10.10.1.1" detail
```

```
=====
RSVP Interface (Detailed) : ip-10.10.1.1
=====
```

```
-----
Interface : ip-10.10.1.1
-----
```

```
Interface       : ip-10.10.1.1
Port ID        : 1/1/1
Admin State    : Up
Active Sessions : 1
Total Sessions : 1
Subscription   : 100 %
Total BW       : 100 Mbps
Hello Interval : n/a
Authentication : Disabled
Auth Rx Seq Num : n/a
Auth Tx Seq Num : n/a
Refresh Reduc. : Disabled
Bfd Enabled    : n/a
ImplicitNullLabel : Disabled*
Oper State     : Up
Active Resvs   : 0
Port Speed     : 100 Mbps
Aggregate      : Dsabl
Hello Timeouts : n/a
Auth Key Id    : n/a
Auth Win Size  : n/a
Reliable Deli. : Disabled
Graceful Shut. : Disabled
GR helper      : n/a
```

```
Percent Link Bandwidth for Class Types*
```

```
Link Bw CT0    : 100
Link Bw CT1    : 0
Link Bw CT2    : 0
Link Bw CT3    : 0
Link Bw CT4    : 0
Link Bw CT5    : 0
Link Bw CT6    : 0
Link Bw CT7    : 0
```

```

Bandwidth Constraints for Class Types (Kbps)
BC0          : 100000          BC4          : 0
BC1          : 0              BC5          : 0
BC2          : 0              BC6          : 0
BC3          : 0              BC7          : 0

Bandwidth for TE Class Types (Kbps)
TE0-> Resv. Bw : 0              Unresv. Bw  : 100000
TE1-> Resv. Bw : 0              Unresv. Bw  : 100000
TE2-> Resv. Bw : 0              Unresv. Bw  : 100000
TE3-> Resv. Bw : 0              Unresv. Bw  : 100000
TE4-> Resv. Bw : 0              Unresv. Bw  : 100000
TE5-> Resv. Bw : 0              Unresv. Bw  : 100000
TE6-> Resv. Bw : 0              Unresv. Bw  : 100000
TE7-> Resv. Bw : 0              Unresv. Bw  : 100000

IGP Update
Up Thresholds(%) : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100 *
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0 *
IGP Update Pending : No
Next Update      : N/A
Neighbors       : 10.20.1.2

Dark Bandwidth
DBw Multiplier   : 100 *
DBw Up Threshold : 0 % *
DBw Down Threshold : 0 % *
DBw Sample Index : 0              DBw Last Sample : 0 Mbps
Latest Cal DBw   : 0 Mbps        Advertised MRLB  : 1000 Mbps
Neighbors       : 12.1.1.2
* indicates inherited values
    
```

```

=====
*A:Dut-A>config>router>mpls>lsp$
    
```

```

*A:SRU4>show>router>rsvp# interface
    
```

```

=====
RSVP Interfaces
    
```

Interface	Total Sessions	Active Sessions	Total BW (Mbps)	Resv BW (Mbps)	Adm	Opr
system	-	-	-	-	Up	Up
aps-1	0	0	6012	0	Up	Up
aps-2	0	0	6010	0	Up	Up
aps-3	0	0	6010	0	Up	Up
sr4-1	0	0	6010	0	Up	Up
ess-7-1	9	9	100	0	Up	Up
ess-7-2	7	7	100	0	Up	Up
ess-7-3	4	4	100	0	Up	Up
ess-7-4	0	0	800	0	Up	Up
ess-7-5	0	0	800	0	Up	Up
ess-7-6	0	0	800	0	Up	Up
hubA	0	0	100	0	Up	Up
germ-1	0	0	1000	0	Up	Up
src-1.1	3	3	100	0	Up	Up
src-1.2	2	2	100	0	Up	Up
src-1.3	3	3	100	0	Up	Up
src-1.4	5	5	100	0	Up	Up
...						
g7600	0	0	1000	0	Up	Up
m160	481	481	1000	82	Up	Up

```

-----
Interfaces : 35
=====
*A:SRU4>show>router>rsvp#

*A:SRU4>show>router>rsvp# interface statistics
=====
RSVP Interface (statistics)
=====
-----
Interface system
-----
Interface                : Up
Total Packets            (Sent) : 0                (Recd.): 0
Bad Packets              (Sent) : 0                (Recd.): 0
Paths                    (Sent) : 0                (Recd.): 0
Path Errors              (Sent) : 0                (Recd.): 0
Path Tears               (Sent) : 0                (Recd.): 0
Resvs                    (Sent) : 0                (Recd.): 0
Resv Confirms           (Sent) : 0                (Recd.): 0
Resv Errors              (Sent) : 0                (Recd.): 0
Resv Tears               (Sent) : 0                (Recd.): 0
Refresh Summaries       (Sent) : 0                (Recd.): 0
Refresh Acks             (Sent) : 0                (Recd.): 0
Bundle Packets          (Sent) : 0                (Recd.): 0
Hellos                   (Sent) : 0                (Recd.): 0
Auth Errors              (Sent) : 0                (Recd.): 0
-----
...
-----
Interface m160
-----
Interface                : Up
Total Packets            (Sent) : 883643           (Recd.): 3052503
Bad Packets              (Sent) : 0                (Recd.): 0
Paths                    (Sent) : 592153           (Recd.): 373610
Path Errors              (Sent) : 464            (Recd.): 30716
Path Tears               (Sent) : 29563           (Recd.): 3480
Resvs                    (Sent) : 93970           (Recd.): 2518660
Resv Confirms           (Sent) : 0                (Recd.): 0
Resv Errors              (Sent) : 136815          (Recd.): 54115
Resv Tears               (Sent) : 13338           (Recd.): 71922
Refresh Summaries       (Sent) : 0                (Recd.): 0
Refresh Acks             (Sent) : 0                (Recd.): 0
Bundle Packets          (Sent) : 0                (Recd.): 0
Hellos                   (Sent) : 17340           (Recd.): 0
Auth Errors              (Sent) : 0                (Recd.): 0
=====
*A:SRU4>show>router>rsvp#

*A:SRU4>show>router>rsvp# interface "sr4-1" statistics
=====
RSVP Interface : sr4-1 (statistics)
=====
-----
Interface sr4-1
-----
Interface                : Up
Total Packets            (Sent) : 33100           (Recd.): 20405
Bad Packets              (Sent) : 0                (Recd.): 0
Paths                    (Sent) : 0                (Recd.): 1833
Path Errors              (Sent) : 1783           (Recd.): 9
Path Tears               (Sent) : 0                (Recd.): 1157
    
```

```

Resvs                (Sent) : 76                (Recd.): 0
Resv Confirms        (Sent) : 0                (Recd.): 0
Resv Errors          (Sent) : 0                (Recd.): 0
Resv Tears           (Sent) : 1                (Recd.): 0
Refresh Summaries    (Sent) : 4                (Recd.): 33
Refresh Acks         (Sent) : 1520             (Recd.): 4
Bundle Packets       (Sent) : 0                (Recd.): 0
Hellos               (Sent) : 29716            (Recd.): 17369
Auth Errors          (Sent) : 0                (Recd.): 0
=====
*A:SRU4>show>router>rsvp#

*A:SRU4>show>router>rsvp# interface detail
=====
RSVP Interfaces (Detailed)
=====
-----
Interface : system
-----
Interface          : system
Port ID            : system
Admin State        : Up                    Oper State         : Up
Active Sessions    : 0                    Active Resvs       : 0
Total Sessions     : 0
Subscription       : 100 %                 Port Speed         : 0 Mbps
Total BW           : 0 Mbps                 Aggregate          : Dsabl
Hello Interval     : 3000 ms                 Hello Timeouts     : 0
Authentication     : Disabled
Auth Rx Seq Num    : n/a                    Auth Key Id        : n/a
Auth Tx Seq Num    : n/a                    Auth Win Size      : n/a
Refresh Reduc.    : Enabled                 Reliable Deli.     : Disabled
Bfd Enabled        : No                    Graceful Shut.     : Disabled
ImplicitNullLabel  : Disabled*

Percent Link Bandwidth for Class Types*
Link Bw CT0        : 100                    Link Bw CT4        : 0
Link Bw CT1        : 0                      Link Bw CT5        : 0
Link Bw CT2        : 0                      Link Bw CT6        : 0
Link Bw CT3        : 0                      Link Bw CT7        : 0

Bandwidth Constraints for Class Types (Kbps)
BC0                 : 0                      BC4                 : 0
BC1                 : 0                      BC5                 : 0
BC2                 : 0                      BC6                 : 0
BC3                 : 0                      BC7                 : 0

Bandwidth for TE Class Types (Kbps)
TE0-> Resv. Bw      : 0                    Unresv. Bw         : 0
TE1-> Resv. Bw      : 0                    Unresv. Bw         : 0
TE2-> Resv. Bw      : 0                    Unresv. Bw         : 0
TE3-> Resv. Bw      : 0                    Unresv. Bw         : 0
TE4-> Resv. Bw      : 0                    Unresv. Bw         : 0
TE5-> Resv. Bw      : 0                    Unresv. Bw         : 0
TE6-> Resv. Bw      : 0                    Unresv. Bw         : 0
TE7-> Resv. Bw      : 0                    Unresv. Bw         : 0

IGP Update
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100 *
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0 *
IGP Update Pending : No
Next Update        : N/A
No Neighbors.
-----
Interface : m160
    
```

```

-----
Interface      : m160
Port ID       : 3/2/1
Admin State   : Up
Oper State    : Up
Active Sessions : 218
Active Resvs  : 0
Total Sessions : 517
Subscription  : 1000 %
Total BW      : 1000 Mbps
Port Speed    : 100 Mbps
Hello Interval : 3000 ms
Aggregate     : Dsabl
Hello Timeouts : 0
Authentication : Disabled
Auth Rx Seq Num : n/a
Auth Key Id    : n/a
Auth Tx Seq Num : n/a
Auth Win Size  : n/a
Refresh Reduc. : Enabled
Reliable Deli. : Disabled
Bfd Enabled    : No
Graceful Shut. : Disabled
ImplicitNullLabel : Disabled*

Percent Link Bandwidth for Class Types*
Link Bw CT0    : 100
Link Bw CT1    : 0
Link Bw CT2    : 0
Link Bw CT3    : 0
Link Bw CT4    : 0
Link Bw CT5    : 0
Link Bw CT6    : 0
Link Bw CT7    : 0

Bandwidth Constraints for Class Types (Kbps)
BC0            : 1000000
BC1            : 0
BC2            : 0
BC3            : 0
BC4            : 0
BC5            : 0
BC6            : 0
BC7            : 0

Bandwidth for TE Class Types (Kbps)
TE0-> Resv. Bw : 0
TE1-> Resv. Bw : 0
TE2-> Resv. Bw : 0
TE3-> Resv. Bw : 0
TE4-> Resv. Bw : 0
TE5-> Resv. Bw : 0
TE6-> Resv. Bw : 0
TE7-> Resv. Bw : 0
Unresv. Bw    : 1000000
Unresv. Bw    : 1000000
Unresv. Bw    : 1000000
Unresv. Bw    : 1000000
Unresv. Bw    : 1000000
Unresv. Bw    : 1000000
Unresv. Bw    : 1000000

IGP Update
Up Thresholds(%) : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100 *
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0 *
IGP Update Pending : No
Next Update       : N/A
Neighbors        : 10.100.30.20
* indicates inherited values
=====
*A:SRU4>show>router>rsvp#
    
```

## interface

### Syntax

**interface** *ip-int-name* [**statistics** | **aux-stats**]

### Context

[\[Tree\]](#) (clear>router>mpls interface)

## Full Context

```
clear router mpls interface
```

## Description

This command resets or clears statistics for MPLS interfaces.

## Parameters

### *ip-int-name*

Specifies an existing IP interface. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### *statistics*

Clears only packet and octet counters, and only these of the default MPLS statistics.

### *aux-stats*

Clears only packet and octet counters, and only these of the default auxiliary MPLS statistics.

## Platforms

All

## interface

## Syntax

```
interface [ip-int-name] [statistics]
```

## Context

[\[Tree\]](#) (clear>router>rsvp interface)

## Full Context

```
clear router rsvp interface
```

## Description

This command resets or clears statistics for an RSVP interface.

## Parameters

### *ip-int-name*

Specifies the IP interface to clear. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### *statistics*

Clears only statistics.

## Platforms

All

## interface

### Syntax

**interface** [**service** *service-id*] [**interface** *ip-int-name*] [**stats** { **rt-server** | **fcc-server**}]

**interface** [**service** *service-id*] [**interface** *ip-int-name*] **summary**

### Context

[\[Tree\]](#) (show>video interface)

### Full Context

show video interface

### Description

This command displays video interface information.

### Parameters

#### **service** *service-id*

Displays video interface information pertaining to the specified service ID.

**Values** 1 to 2148278317

*svc-name* — a string up to 64 characters.

#### **interface** *ip-int-name*

Displays video interface information pertaining to the specified interface.

#### **stats**

Displays video interface statistics.

**Values** **rt-server** — Displays video interface statistics for the RET server.

**fcc-server** — Displays video interface statistics for the FCC server.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s

### Output

The following output is an example of this command.

#### Output Example

```
*A:Dut-C# show video interface
=====
Video interface
=====
Service Id       : 1
Name             : vi
Admin/Oper State : Up/Up           If Index       : 0
Video Group Id  : 1                Sap Id        : lag-201:5
```



```

Sessions      : 2000                Mcast Protocol : PIM
Address       : 10.3.3.3/32
Tx Failed Pkts : 0
SCTE30 TCP sess : 0                SCTE30 INIT sess : 0
SD RT Svr State : Enabled
SD RT Requests : 0                SD Failed Req   : 0
SD RTP Pkts Req : 0                SD RT Replies   : 0
Tx SD Bytes    : 0                Tx SD Packets   : 0
HD RT Svr State : Enabled
HD RT Requests : 0                HD Failed Req   : 0
HD RTP Pkts Req : 0                HD RT Replies   : 0
Tx HD Bytes    : 0                Tx HD Packets   : 0
PIP RT Svr State : Enabled
PIP RT Requests : 0                PIP Failed Req  : 0
PIP RTP Pkts Req : 0                PIP RT Replies  : 0
Tx PIP Bytes    : 0                Tx PIP Packets  : 0
SD FCC Svr State : Enabled
SD FCC Requests : 0                SD FCC Svr Mode : Burst
Tx SD Bytes     : 0                SD Failed Req   : 0
SD FCC Replies  : 0                Tx SD Packets   : 0
HD FCC Svr State : Enabled
HD FCC Requests : 448820           HD FCC Svr Mode : Burst
Tx HD Bytes     : 17150845788      HD Failed Req   : 0
HD FCC Replies  : 448820           Tx HD Packets   : 293148098
PIP FCCSvr State : Enabled
PIP FCC Requests : 0                PIP FCC Svr Mode : Burst
Tx PIP Bytes    : 0                PIP Failed Req  : 0
PIP FCC Replies : 0                Tx PIP Pkts     : 0
-----
Interfaces : 1
=====
*A:Dut-C#
    
```

## interface

### Syntax

**interface** *ip-int-name* [**address** *ip-address*] [**rt-client**] [**rt-server**] [**fcc-server**] [**ad-insert**]

### Context

[\[Tree\]](#) (clear>video>statistics>id interface)

### Full Context

clear video statistics id interface

### Description

This command clears video statistics for a particular channel.

### Parameters

***ip-int-name***

Clears statistics for the specified interface.

**address *ip-address***

Clears statistics for the specified IP address.

**rt-client**

Clears all RET client related statistics.

**rt-server**

Clears all RET server related statistics.

**fcc-server**

Clears all FCC server related statistics.

**ad-insert**

Clears all ad insert related statistics.

**grp-address**

Clears statistics for the specified channel group address.

**source *srcAddr***

Clears statistics for the specified source address.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s

## interface

**Syntax**

**interface** [*ip-int-name* | *ipv6-address*] [ **group**] [*grp-ipv6-address*] [**detail**]

**Context**

[\[Tree\]](#) (show>router>mld interface)

**Full Context**

show router mld interface

**Description**

This command displays MLD interface information.

**Parameters**

***ip-int-name***

Displays the information associated with the specified IPv6 interface name.

***ipv6-address***

Displays the information associated with the specified IPv6 address.

**group *grp-ipv6-address***

Displays IPv6 multicast group address for which this entry contains information.

**detail**

Displays detailed IPv6 interface information along with the source group information learned on that interface.

**Platforms**

All

**Output**

The following output is an example of MLD interface information. [Table 205: MLD Fields](#) displays MLD field descriptions.

**Output Example**

```
*A:Dut-A# show router mld interface
=====
MLD Interfaces
=====
Interface          Adm  Oper  Cfg/Opr      Num Policy
  Querier          Version  Groups
-----
intf_to_ixia      Up   Up    2/2          5 none
  fe0:db8:4403:1ff:fe01:3
-----
Interfaces : 1
=====
*A:Dut-A#
```

Table 205: MLD Fields

Label	Description
Interface	The interfaces that participate in the MLD protocol.
Adm Admin Status	The administrative state for the MLD protocol on this interface.
Oper Oper Status	The current operational state of MLD protocol on the interface.
Querier	The address of the MLD querier on the IP subnet to which the interface is attached.
Querier Up Time	The time since the querier was last elected as querier.
Querier Expiry Timer	The time remaining before the querier ages out. If the querier is the local interface address, the value will be zero.
Cfg/Opr Version Admin/Oper version	Cfg — The configured version of MLD running on this interface. For MLD to function correctly, all routers on a LAN must be configured to run the same version of MLD on that LAN.  Opr — The operational version of MLD running on this interface.

Label	Description
Num Groups	The number of multicast groups which have been learned by the router on the interface.
Policy	The policy that is to be applied on the interface.
Group Address	The IP multicast group address for which this entry contains information.

## interface

### Syntax

**interface** [*ip-int-name* | *mt-int-name* | *ip-address*] [**group** *grp-ip-address* | **source** *ip-address* [**type** {**starstarrp** | **starg** | **sg**}] [**detail**] [*family*]

### Context

[\[Tree\]](#) (show>router>pim interface)

### Full Context

show router pim interface

### Description

This command displays PIM interface information and the (S,G)/(\*,G)/(\*, \*, rp) state of the interface.

### Parameters

#### *ip-int-name*

Displays interface information associated with the specified IP interface name.

#### *mt-int-name*

Displays Multicast Tunnel (MT) interface information for a VPRN.

**Values** <*vprn-id*>-mt-<*grp-ip-address*>

#### *ip-address*

Displays interface information associated with the specified IP address.

#### **group** *grp-ip-address*

Displays the IP multicast group address information for which this entry contains information.

#### **source** *ip-address*

Displays information about the source address for which this entry contains information.

If the type is **starg**, the value of this object is zero.

If the type is **starstarrp**, the value of this object is the address of the RP.

**type**

Displays information for the specified entry type.

**Values** starstarrp, starg, sg

**detail**

Displays detailed interface information.

**family**

Displays family information for the interface.

**Values** ipv4, ipv6

**Platforms**

All

**Output**

The following output is an example of a PIM interface configuration. [Table 206: PIM Interface Fields](#) provides PIM interface field descriptions.

**Output Example**

```
ALA-1# show router pim interface
=====
PIM Interfaces
=====
Interface                Admin Oper  DR           DR        Hello
                        State State          Priority  Intvl
-----
system                   Up    Up    N/A          1         30
ip-10.1.7.1              Up    Up    10.1.7.7    5         30
ip-10.1.2.1              Up    Up    10.1.2.2    5         30
ip-10.111.1.1            Up    Up    10.111.1.1  5         30
-----
Interfaces : 4
=====
ALA-1#
ALA-1# show router pim interface ip-10.1.2.1 detail
=====
PIM Interface ip-10.1.2.1
=====
Interface                Admin Oper  DR           DR        Hello
                        State State          Priority  Intvl
-----
ip-10.1.2.1              Up    Up    10.1.2.2    5         30
-----
PIM Group Source
-----
Group Address      : 239.101.0.5      Src Address       : 10.111.1.2
Interface          : ip-10.1.2.1     Type              : <S,G>
RP Address         : 239.200.200.4
Join Prune State   : Join           Expires           : 0d 00:03:00
Prune Pend Expires : N/A
Assert State       : No Info
-----
```

```

Interfaces : 1
=====
ALA-1#
ALA-1# show router pim interface group
=====
PIM Interface ip-10.1.7.1
=====
Interface                Admin Oper  DR           DR           Hello
                          State State  Address      Priority     Intvl
-----
ip-10.1.7.1              Up    Up    10.1.7.7     5            30
-----
Group Address    Source Address    RP Address      Type    JP    Assert
-----
239.101.0.0     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.1     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.2     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.3     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.4     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.6     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.7     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.8     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
239.101.0.9     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
=====
PIM Interface ip-10.1.2.1
=====
Interface                Admin Oper  DR           DR           Hello
                          State State  Address      Priority     Intvl
-----
ip-10.1.2.1          Up    Up    10.1.2.2     5            30
-----
Group Address    Source Address    RP Address      Type    JP    Assert
-----
239.101.0.5     10.111.1.2       239.200.200.4  <S,G>  Join  No Info
=====
PIM Interface ip-10.111.1.1
=====
Interface                Admin Oper  DR           DR           Hello
                          State State  Address      Priority     Intvl
-----
ip-10.111.1.1      Up    Up    10.111.1.1   5            30
-----
Group Address    Source Address    RP Address      Type    JP    Assert
-----
239.102.0.0     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.1     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.2     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.3     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.4     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.5     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.6     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.7     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.8     *                239.200.200.4  <*,G>  Join  No Info
239.102.0.9     *                239.200.200.4  <*,G>  Join  No Info
-----
Interfaces : 3
=====
ALA-1#
ALA-1# show router pim interface group 239.102.0.0 detail
=====
PIM Interface ip-10.111.1.1
=====

```

```

Interface                               Admin Oper  DR           DR           Hello
                                     State State  Address      Priority     Intvl
-----
ip-10.111.1.1                          Up    Up    10.111.1.1  5           30
-----
PIM Group Source
-----
Group Address       : 239.102.0.0      Src Address       : *
Interface          : ip-10.111.1.1  Type              : <*,G>
RP Address         : 239.200.200.4
Join Prune State   : Join              Expires           : 0d 00:02:05
Prune Pend Expires : N/A
Assert State       : No Info
-----
Interfaces : 1
=====
ALA-1#
ALA-1# show router pim interface type starg
=====
PIM Interface ip-10.111.1.1
=====
Interface                               Admin Oper  DR           DR           Hello
                                     State State  Address      Priority     Intvl
-----
ip-10.111.1.1                          Up    Up    10.111.1.1  5           30
-----
Group Address   Source Address  RP Address      Type      JP      Assert
-----
239.102.0.0    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.1    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.2    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.3    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.4    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.5    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.6    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.7    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.8    *                239.200.200.4 <*,G>    Join    No Info
239.102.0.9    *                239.200.200.4 <*,G>    Join    No Info
-----
Interfaces : 1
=====
ALA-1#
A:SetupCLI# show router pim interface detail
=====
PIM Interface ipv4 toRemoteSite_1001
=====
Admin Status       : Up                Oper Status       : Up
IPv4 Admin Status  : Up                IPv4 Oper Status  : Up
DR                 : 10.1.1.5
Oper DR Priority    : 5
OperGroup          : vrrpl_1          OprGrp Active oper : set
Cfg OprGrp Priority: 255
BSM RA Check       : Disabled          Cfg DR Priority    : 1
Hello Interval     : 30                Time for next hello: 0d 00:00:03
Multicast Senders  : auto              Hello Multiplier   : 35
J/P Tracking Admin : Disabled          J/P Tracking Oper  : Disabled
Auto-created       : No                Improved Assert    : Enabled
Sticky-DR         : Disabled          Sticky-DR Priority : N/A
Max Groups Allowed : 0                Max Groups Till Now: 0
Num Groups         : 0                Bfd enabled       : No
    
```

```

Three-way Hello      : 0                Assert-Period       : No
Instant Prune Echo  : Disabled          P2MP LDP Tree Join : Disabled
MCAC Policy Name    : 0                MCAC Const Adm St  : Enable
MCAC Max Unconst BW: no limit          MCAC Max Mand BW   : no limit
MCAC In use Mand BW: 0                MCAC Avail Mand BW : unlimited
MCAC In use Opnl BW: 0                MCAC Avail Opnl BW : unlimited
Use LAG port weight: no
MCAC If-Policy Name:
-----
Interfaces : 1 Tunnel-Interfaces : 0
=====
    
```

Table 206: PIM Interface Fields

Label	Description
Admin State	The administrative state for PIM protocol on this interface
Oper State	The current operational state of PIM protocol on this interface
DR	The designated router on this PIM interface
DR Priority	The priority value sent in PIM Hello messages and that is used by routers to elect the designated router (DR).
Hello Intvl	The frequency at which PIM Hello messages are transmitted on this interface
OperGroup	The OperGroup name associated with the PIM interface
OprGrp Active oper	The OperGroup operation (add, set, subtract) to the DR priority
Cfg OprGrp Priority	The configured OperGroup DR priority

## interface

### Syntax

**interface** [*ip-int-name*]

### Context

**[Tree]** (show>cflowd interface)

### Full Context

show cflowd interface

### Description

Displays the administrative and operational status of the interfaces with cflowd enabled.



## Parameters

### *ip-int-name*

Displays information only for the IP interface with the specified name.

**Default** all interfaces with cflowd enabled

## Platforms

All

## Output

The following output is an example of cflowd interface information, and [Table 207: Show cflowd Interface Output Fields](#) describes the output fields.

*Table 207: Show cflowd Interface Output Fields*

Label	Description
Interface	Displays the physical port identifier
IPv4 Address	Displays the primary IPv4 address for the associated IP interface
IPv6 Address	Displays the primary IPv6 address for the associated IP interface
Router	Displays the virtual router index (Base = 0)
IF Index	Displays the Global IP interface index
Mode	Displays the cflowd sampling type and direction intf — Interface based sampling acl — ACL based sampling ingr — Ingress sampling egr — Egress sampling both — Both ingress and egress sampling
Admin	Displays the administrative state of the interface
Opr-IPv4	Displays the operational state for IPv4 sampling
Opr-IPv6	Displays the operational state for IPv6 sampling

## Output Example

```
B:sr-002# show cflowd interface [ip-addr | ip-int-name]
=====
Cflowd Interfaces
=====
Interface          Router      IF Index  Mode      Admin
  IPv4 Address                Oper IPv4
  IPv6 Address                Oper IPv6
-----
ip4ip6NamedIf      Base       381      intf/ing  Up
```

```

    5.5.5.5/24                               Up
    55::55/128                               Up
    ipv4NamedIf                             5          254       acl-egr   Up
    10.10.10.10/24                          Up
    N/A                                       Down
    ipv6NamedIf                             Base       380       i/f-both Up
    N/A                                       Down
    2001:db8::9/128                          Up
-----
Interfaces : 3
=====

B:sr-002# show cflowd interface 11.10.1.2
=====
Cflowd Interfaces
=====
Interface: To_Sr1
IP address: 11.10.1.2/24
Admin/Oper state: Up/Up
Sampling Mode: (ingress | egress | both)
Total Flows seen: 1302000
Pkts sampled (ingress/egress) : 60103/70102
Bytes sampled (ingress/egress) : 6010300/7010200
Active flows (ingress/egress) : 6010/7010

B:sr-002# show cflowd interface
=====
Cflowd Interfaces
=====
Interface                IP Address           Mode                Admin  Oper
-----
To_Sr1                   1.10.1.2/24         Interface           Up     Up
To_C2                    1.12.1.2/24         Interface           Up     Up
To_Cisco_7600            1.13.1.2/24         Interface           Up     Up
To_E                      1.11.1.2/24         Interface           Up     Up
To_G2                    150.153.1.1/24      Interface           Up     Up
To_Sr1_Sonet             150.140.1.2/24      Interface           Up     Down
Main                     120.1.1.1/24         Filter              Down   Down
New                      120.2.1.1/24         Filter              Up     Up
-----
Interfaces : 8
=====
B:sr12-002#
    
```

## interface

### Syntax

**interface** [*interface-name*] [**family**]

**interface** [*interface-name*] **detail**

**interface summary**

### Context

[\[Tree\]](#) (show>router>bfd interface)

## Full Context

show router bfd interface

## Description

This command displays interface information.

## Parameters

### *interface-name*

Specifies the interface name.

### **family**

Specifies whether IPv4 or IPv6 routes are displayed.

### **detail**

Displays detailed interface information.

### **summary**

Displays summary interface information for the router.

## Platforms

All

## Output

The following output is an example of BFD interface information, and [Table 208: BFD Interface Fields](#) describes the fields.

### Output Example

```
*A:Dut-B# show router bfd interface
=====
BFD Interface
=====
Interface name           Tx Interval   Rx Interval   Multiplier
-----
port-1-1                 500           500           3
port-1-1                 10            10            3
port-1-2                 500           500           3
port-1-2                 10            10            3
port-1-3                 500           500           3
port-1-3                 10            10            3
port-1-4                 500           500           3
port-1-4                 10            10            3
port-1-5                 500           500           3
...
=====
```

Table 208: BFD Interface Fields

Label	Description
TX Interval	Displays the interval, in milliseconds, between the transmitted BFD messages to maintain the session

Label	Description
RX Interval	Displays the expected interval, in milliseconds, between the received BFD messages to maintain the session
Multiplier	Displays the integer used by BFD to declare when the neighbor is down

## interface

### Syntax

**interface** [*interface-name*]

### Context

[\[Tree\]](#) (show>router>icmp6 interface)

[\[Tree\]](#) (show>router>icmp interface)

### Full Context

show router icmp6 interface

show router icmp interface

### Description

This command displays interface ICMP and ICMP6 statistics.

### Parameters

***interface-name***

Only displays entries associated with the specified IP interface name.

### Platforms

All

### Output

The following output is an example of ICMPv6 interface statistics, and [Table 209: ICMP6 Interface Fields](#) describes the fields.

### Output Example

```
B:CORE2# show router icmp6 interface net1_1_2
=====
Interface ICMPV6 Stats
=====
Interface "net1_1_2"
-----
Received
Total                : 41          Errors                : 0
Destination Unreachable : 0          Redirects            : 0
Time Exceeded         : 0          Pkt Too Big         : 0
```

```

Echo Request      : 0          Echo Reply      : 0
Router Solicits  : 0          Router Advertisements : 0
Neighbor Solicits : 20       Neighbor Advertisements : 21
-----
Sent
Total             : 47          Errors          : 0
Destination Unreachable : 0      Redirects      : 0
Time Exceeded    : 0          Pkt Too Big    : 0
Echo Request     : 0          Echo Reply     : 0
Router Solicits  : 0          Router Advertisements : 0
Neighbor Solicits : 27       Neighbor Advertisements : 20
=====
B: CORE2#
    
```

Table 209: ICMP6 Interface Fields

Label	Description
Total	The total number of all messages
Destination Unreachable	The number of message that did not reach the destination
Time Exceeded	The number of messages that exceeded the time threshold
Echo Request	The number of echo requests
Router Solicits	The number of times the local router was solicited
Neighbor Solicits	The number of times the neighbor router was solicited
Errors	The number of error messages
Redirects	The number of packet redirects
Pkt Too big	The number of packets that exceed appropriate size
Echo Reply	The number of echo replies
Router Advertisements	The number of times the router advertised its location
Neighbor Advertisements	The number of times the neighbor router advertised its location

## interface

### Syntax

**interface** [*ip-int-name* | *ip-address*] [**detail**]

### Context

[\[Tree\]](#) (show>router>isis interface)

## Full Context

```
show router isis interface
```

## Description

This command displays IS-IS interface information. When no *ip-addr* or the *ip-int-name* is specified, all interfaces are listed.

## Parameters

### *ip-address*

Only displays the interface information associated with the specified IP address.

- Values**
- ipv4-address
    - a.b.c.d (host bits must be 0)
  - ipv6-address
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF]H
    - d: [0 to 255]D

### *ip-int-name*

Only displays the interface information associated with the specified IP interface name.

### *detail*

All output is displayed in the detailed format.

## Platforms

All

## Output

The following outputs are examples of IS-IS interface information, and [Table 210: IS-IS Interface Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-C# show router isis interface
=====
Rtr Base ISIS Instance 0 Interfaces
=====
Interface                               Level CircID  Oper   L1/L2 Metric  Type
                               State
-----
To_PE1                                 L1L2  2      Down    0/0          bcst
-----
Interfaces : 1
=====
```

### Output Example

```
A:Dut-A# show router isis 0 interface detail
=====
```

Rtr Base ISIS Instance 0 Interfaces (detail)

```

=====
-----
Interface      : Loopback0                      Level Capability: L1L2
Oper State     : Up                          Admin State      : Up
Auth Keychain  : Disabled
Auth Type      : None                        Auth State       : Enabled
Circuit Id     : 2                          Retransmit Int. : 5
Type           : Pt-to-Pt                    LSP Pacing Int. : 100
Oper Type      : Pt-to-Pt                    CSNP Int.        : 10
Mesh Group     : Inactive                     BER              : none
LFA NH Template : None                       Bfd Enabled      : No
Topology       : IPv4-Unicast, IPv6-Unicast, IPv4-Multicast, IPv6-Multicast
Te Metric      : 0                          Te State         : Down
Admin Groups   : None
Ldp Sync       : outOfService                 Ldp Sync Wait   : Disabled
Ldp Timer State : Disabled                     Ldp Tm Left     : 0
Route Tag      : None                         LFA              : Included
Default Instance: N/A                       Load Bal Weight : None
Hello Padding  : Disabled
IPv4 Node SID  : Index 1                      IPv6 Node SID    : none
Flex Algo     : 128
  IPv4 Node SID : Index 11
  Level         : 1
  Auth Keychain : Disabled
  Auth Type     : None                        Metric           : 0
  Hello Timer   : 9                          IPv6-Ucast-Met  : 0
  Priority      : 64                          IPv6-Mcast-Met  : 0
  Passive       : Yes                         IPv4-Mcast-Met  : 0
  SD-Offset     : 0                          SF-Offset        : 0
  Hello Mult.   : 3                          LSP Tx Q Count  : 0
  Hello Padding : Disabled
  Level         : 2
  Auth Keychain : Disabled
  Auth Type     : None                        Metric           : 0
  Hello Timer   : 9                          IPv6-Ucast-Met  : 0
  Priority      : 64                          IPv6-Mcast-Met  : 0
  Passive       : Yes                         IPv4-Mcast-Met  : 0
  SD-Offset     : 0                          SF-Offset        : 0
  Hello Mult.   : 3                          LSP Tx Q Count  : 0
  Hello Padding : Disabled
-----
Interface      : To_B                          Level Capability: L2
Oper State     : Up                          Admin State      : Up
Auth Keychain  : Disabled
Auth Type      : None                        Auth State       : Enabled
Circuit Id     : 3                          Retransmit Int. : 5
Type           : Pt-to-Pt                    LSP Pacing Int. : 100
Oper Type      : Pt-to-Pt                    CSNP Int.        : 10
Mesh Group     : Inactive                     BER              : none
LFA NH Template : None                       Bfd Enabled      : No
Topology       : IPv4-Unicast, IPv6-Unicast, IPv4-Multicast, IPv6-Multicast
Te Metric      : 0                          Te State         : Down
Admin Groups   : None
Ldp Sync       : outOfService                 Ldp Sync Wait   : Disabled
Ldp Timer State : Disabled                     Ldp Tm Left     : 0
Route Tag      : None                         LFA              : Included
Default Instance: N/A                       Load Bal Weight : None
Hello Padding  : Disabled
  Level         : 2
  Auth Keychain : Disabled
  Auth Type     : None                        Metric           : 10
  Hello Timer   : 9                          IPv6-Ucast-Met  : 10
  Priority      : 64                          IPv6-Mcast-Met  : 10
-----

```

```

Passive      : No                IPv4-Mcast-Met : 10
SD-Offset   : 0                SF-Offset      : 0
Hello Mult.  : 3                LSP Tx Q Count : 0
Hello Padding : Disabled
-----
Interface    : To_C            Level Capability: L2
Oper State   : Up              Admin State     : Up
Auth Keychain : Disabled
Auth Type    : None            Auth State      : Enabled
Circuit Id   : 4                Retransmit Int. : 5
Type         : Pt-to-Pt        LSP Pacing Int. : 100
Oper Type    : Pt-to-Pt        CSNP Int.      : 10
Mesh Group   : Inactive        BER             : none
LFA NH Template : None        Bfd Enabled    : No
Topology     : IPv4-Unicast, IPv6-Unicast, IPv4-Multicast, IPv6-Multicast
Te Metric    : 0                Te State       : Down
Admin Groups : None
Ldp Sync     : outOfService    Ldp Sync Wait  : Disabled
Ldp Timer State : Disabled     Ldp Tm Left    : 0
Route Tag    : None            LFA            : Included
Default Instance: N/A        Load Bal Weight : None
Hello Padding : Disabled
Level        : 2                Adjacencies    : 1
  Auth Keychain : Disabled
  Auth Type     : None            Metric         : 10
  Hello Timer   : 9                IPv6-Ucast-Met : 10
  Priority      : 64                IPv6-Mcast-Met : 10
  Passive      : No                IPv4-Mcast-Met : 10
  SD-Offset    : 0                SF-Offset      : 0
  Hello Mult.  : 3                LSP Tx Q Count : 0
  Hello Padding : Disabled
=====
A:Dut-A#
    
```

### Output Example

```

A:Dut-C# show router isis interface "Loopback0" detail
=====
Rtr Base ISIS Instance 0 Interfaces (detail)
=====
-----
Interface      : Loopback0        Level Capability: L1L2
Oper State     : Up              Admin State     : Up
Auth Keychain  : Disabled
Auth Type      : None            Auth State      : Enabled
Circuit Id     : 2                Retransmit Int. : 5
Type           : Pt-to-Pt        LSP Pacing Int. : 100
Oper Type      : Pt-to-Pt        CSNP Int.      : 10
Mesh Group     : Inactive        BER             : none
LFA NH Template : None        Bfd Enabled    : No
Topology       : IPv4-Unicast, IPv6-Unicast, IPv4-Multicast, IPv6-Multicast
Te Metric      : 0                Te State       : Down
Admin Groups   : None
Ldp Sync       : outOfService    Ldp Sync Wait  : Disabled
Ldp Timer State : Disabled     Ldp Tm Left    : 0
Route Tag      : None            LFA            : Included
Default Instance: N/A        Load Bal Weight : None
Hello Padding  : Disabled
IPv4 Node SID  : Index 3         IPv6 Node SID   : none
IPv4 shared SID : <Yes/No>       IPv6 shared SID : <Yes/No>
  Level        : 1                Adjacencies    : 0
  Auth Keychain : Disabled
  Auth Type     : None            Metric         : 0
    
```



```

Hello Timer      : 9
Priority         : 64
Passive         : Yes
SD-Offset       : 0
Hello Mult.     : 3
Hello Padding   : Disabled
Level           : 2
Auth Keychain   : Disabled
Auth Type       : None
Hello Timer     : 9
Priority        : 64
Passive        : Yes
SD-Offset      : 0
Hello Mult.    : 3
Hello Padding  : Disabled
IPv6-Ucast-Met : 0
IPv6-Mcast-Met : 0
IPv4-Mcast-Met : 0
SF-Offset      : 0
LSP Tx Q Count : 0
Adjacencies    : 0
Metric         : 0
IPv6-Ucast-Met : 0
IPv6-Mcast-Met : 0
IPv4-Mcast-Met : 0
SF-Offset      : 0
LSP Tx Q Count : 0
=====
A:Dut-C#
    
```

Table 210: IS-IS Interface Output Fields

Label	Description
Interface	The interface name
Level Capability	Specifies the interface level (1, 2, or 1 and 2)
Circuit Id	Specifies the circuit identifier
Oper State	Up — The interface is operationally up Down — The interface is operationally down
Metric	Interface metric for Level 1 and Level 2, if none are set to 0
Type	p2p — The operational interface type is point-to-point bcst — The operational interface type is broadcast

## interface

### Syntax

```

interface [ip-int-name | ip-address] [detail]
interface [area area-id] [detail]
interface [ip-int-name | ip-address] database [detail]
    
```

### Context

[\[Tree\]](#) (show>router>ospf interface)

### Full Context

```
show router ospf interface
```

## Description

This command displays the details of the OSPF interface identifiable by the IP address or IP interface name. When neither is specified, all in-service interfaces are displayed.

The **detail** option generates large volumes of data. Nokia recommends using the **detail** keyword only when requesting a specific interface.

## Parameters

### *ip-int-name*

Displays only the interface identified by this interface name, up to a maximum of 32 characters.

### *ip-address*

Displays only the interface identified by this IPv4 address.

**Values** ipv4-address:

- a.b.c.d

### *area area-id*

Displays all interfaces configured in this area.

**Values** ip-address — a.b.c.d  
area — 0 to 4294967295

### *detail*

Displays detailed information for the interface.

### *database*

Displays database information for the interface.

## Platforms

All

## Output

The following output is an example of the OSPF interface information, and [Table 211: OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf interface "system"
```

## Output Example

```
=====
Rtr Base OSPFv2 Instance 0 Interface "system"
=====
If Name          Area Id          Designated Rtr  Bkup Desig Rtr  Adm Oper
-----
system           0.0.0.0          10.20.1.3       0.0.0.0         Up   DR
-----
No. of OSPF Interfaces: 1
=====
```

The following output is an example of detailed OSPF interface information, and [Table 212: Detailed OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf interface "system" detail
```

### Output Example

```
=====
Rtr Base OSPFv2 Instance 0 Interface "system" (detail)
=====
-----
Configuration
-----
IP Address       : 10.20.1.3
node sid index  : 33
Area Id         : 0.0.0.0           Priority       : 1
Hello Intrvl    : 5 sec             Rtr Dead Intrvl : 15 sec
Retrans Intrvl  : 5 sec             Poll Intrvl    : 120 sec
Cfg Metric      : 0                 Advert Subnet   : True
Transit Delay   : 1                 Cfg IF Type    : None
Passive        : True               Cfg MTU        : 0
LSA-filter-out  : None              Adv Rtr Capab  : Yes
LFA            : Include            LFA NH Template :
RIB-priority    : None
Auth Type      : None
-----
State
-----
Admin Status    : Enabled           Oper State     : Designated Rtr
Designated Rtr : 10.20.1.3         Backup Desig Rtr : 0.0.0.0
IF Type        : Broadcast          Network Type    : Stub
Oper MTU       : 1500              Last Enabled   : 05/27/2015 08:35:53
Oper Metric    : 0                 Bfd Enabled    : No
Te Metric      : 0                 Te State       : Down
Admin Groups   : None
Ldp Sync      : outOfService        Ldp Sync Wait  : Disabled
Ldp Timer State : Disabled          Ldp Tm Left   : 0
-----
Statistics
-----
Nbr Count      : 0                 If Events      : 4
Tot Rx Packets : 0                 Tot Tx Packets : 0
Rx Hellos      : 0                 Tx Hellos      : 0
Rx DBDs        : 0                 Tx DBDs        : 0
Rx LSRs        : 0                 Tx LSRs        : 0
Rx LSUs        : 0                 Tx LSUs        : 0
Rx LS Acks     : 0                 Tx LS Acks     : 0
Retransmits    : 0                 Discards       : 0
Bad Networks   : 0                 Bad Virt Links : 0
Bad Areas      : 0                 Bad Dest Adtrs : 0
Bad Auth Types : 0                 Auth Failures  : 0
Bad Neighbors  : 0                 Bad Pkt Types  : 0
Bad Lengths    : 0                 Bad Hello Int. : 0
Bad Dead Int.  : 0                 Bad Options    : 0
Bad Versions   : 0                 Bad Checksums  : 0
LSA Count      : 0                 LSA Checksum   : 0x0
=====
```

The following output is an example of the OSPF interface information, and [Table 211: OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf 1 interface "DUTC_TO_DUTB.1.0"
```

### Output Example

```
=====
Rtr Base OSPFv2 Instance 1 Interface "DUTC_TO_DUTB.1.0"
=====
If Name          Area Id          Designated Rtr  Bkup Desig Rtr  Adm  Oper
-----
DUTC_TO_DUTB.1.0  0.0.0.0         0.0.0.0        0.0.0.0         Up   PToP
-----
No. of OSPF Interfaces: 1
=====
```

The following output is an example of detailed OSPF interface information, and [Table 212: Detailed OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf 1 interface "DUTC_TO_DUTB.1.0" detail
```

### Output Example

```
=====
Rtr Base OSPFv2 Instance 1 Interface "DUTC_TO_DUTB.1.0" (detail)
=====
-----
Configuration
-----
IP Address       : 1.0.23.3
Area Id          : 0.0.0.0
Hello Intrvl    : 2 sec
Retrans Intrvl  : 5 sec
Cfg Metric       : 7000
Transit Delay   : 1
Passive         : False
LSA-filter-out  : None
LFA             : Include
Auth Type       : None
Priority         : 1
Rtr Dead Intrvl : 10 sec
Poll Intrvl     : 120 sec
Advert Subnet   : True
Cfg IF Type     : Point To Point
Cfg MTU         : 0
Adv Rtr Capab   : Yes
LFA NH Template : template1
-----
State
-----
Admin Status    : Enabled
Designated Rtr : 0.0.0.0
IF Type         : Point To Point
Oper MTU        : 1500
Oper Metric     : 7000
Te Metric       : 7000
Admin Groups    : None
Ldp Sync        : outOfService
Ldp Timer State : Disabled
Oper State      : Point To Point
Backup Desig Rtr : 0.0.0.0
Network Type    : Transit
Last Enabled    : 01/14/2014 14:33:07
Bfd Enabled     : No
Te State        : Down
Ldp Sync Wait   : Disabled
Ldp Tm Left     : 0
-----
Statistics
-----
Nbr Count       : 1
Tot Rx Packets  : 603
Rx Hellos       : 576
Rx DBDs         : 3
Rx LSRs         : 0
Rx LSUs         : 15
If Events       : 1
Tot Tx Packets  : 602
Tx Hellos       : 577
Tx DBDs         : 2
Tx LSRs         : 1
Tx LSUs         : 16
```

```

Rx LS Acks      : 9
Retransmits    : 2
Bad Networks   : 0
Bad Areas      : 0
Bad Auth Types : 0
Bad Neighbors  : 0
Bad Lengths    : 0
Bad Dead Int.  : 1
Bad Versions   : 0
LSA Count      : 0
Tx LS Acks     : 6
Discards       : 2
Bad Virt Links : 0
Bad Dest Adrs  : 0
Auth Failures  : 0
Bad Pkt Types  : 0
Bad Hello Int. : 1
Bad Options    : 0
Bad Checksums  : 0
LSA Checksum   : 0x0
    
```

The following output is an example of detailed OSPF interface information, and [Table 212: Detailed OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf 1 interface "ip_if_1" detail
```

### Output Example

```

=====
Rtr Base OSPFv2 Instance 1 Interface "ip_if_1" (detail)
=====
-----
Configuration
-----
IP Address      : 10.10.1.1
Area Id        : 0.0.0.0
Hello Intrvl   : 9 sec
Retrans Intrvl : 10 sec
Cfg Metric     : 11
Transit Delay  : 2
Passive        : False
LFA            : Exclude
IPsec InStatSA :
IPsec InStatSATmp:
Priority        : 10
Rtr Dead Intrvl : 45 sec
Poll Intrvl    : 120 sec
Advert Subnet  : True
Auth Type      : MD5
Cfg MTU        : 9198
IPsec OutStatSA :
-----
State
-----
Admin Status    : Enabled
Designated Rtr : 0.0.0.0
IF Type         : Secondary
Oper MTU        : 1576
Oper Metric     : 11
Te Metric       : 16777215
Admin Groups    : None
Ldp Sync        : outOfService
Ldp Timer State : Disabled
Oper State      : Down
Backup Desig Rtr : 0.0.0.0
Network Type    : Stub
Last Enabled    : Never
Bfd Enabled     : No
Te State        : Down
Ldp Sync Wait   : Disabled
Ldp Tm Left     : 0
-----
Statistics
-----
Nbr Count      : 0
Tot Rx Packets : 0
Rx Hellos      : 0
Rx DBDs        : 0
Rx LSRs        : 0
Rx LSUs        : 0
Rx LS Acks     : 0
Retransmits    : 0
Bad Networks   : 0
Bad Areas      : 0
Bad Auth Types : 0
Bad Neighbors  : 0
If Events      : 0
Tot Tx Packets : 0
Tx Hellos      : 0
Tx DBDs        : 0
Tx LSRs        : 0
Tx LSUs        : 0
Tx LS Acks     : 0
Discards       : 0
Bad Virt Links : 0
Bad Dest Adrs  : 0
Auth Failures  : 0
Bad Pkt Types  : 0
    
```

```

Bad Lengths      : 0
Bad Dead Int.    : 0
Bad Versions     : 0
LSA Count       : 0
Bad Hello Int.   : 0
Bad Options      : 0
Bad Checksums    : 0
LSA Checksum     : 0x0
-----
Configuration
-----
IP Address       : 10.10.1.1
Area Id         : 1.1.1.1
Hello Intrvl    : 9 sec
Retrans Intrvl  : 10 sec
Cfg Metric      : 11
Transit Delay   : 2
Passive         : False
LFA             : Exclude
IPsec InStatSA  :
IPsec InStatSATmp:
Priority         : 10
Rtr Dead Intrvl : 45 sec
Poll Intrvl     : 120 sec
Advert Subnet   : False
Auth Type       : MD5
Cfg MTU         : 9198
IPsec OutStatSA :
-----
State
-----
Admin Status    : Enabled
Designated Rtr : 0.0.0.0
IF Type         : Point To Point
Oper MTU        : 1576
Oper Metric     : 11
Te Metric       : 16777215
Admin Groups    : None
Ldp Sync        : outOfService
Ldp Timer State : Disabled
Oper State      : Down
Backup Desig Rtr : 0.0.0.0
Network Type    : Stub
Last Enabled    : Never
Bfd Enabled     : No
Te State        : Down
Ldp Sync Wait   : Disabled
Ldp Tm Left     : 0
-----
Statistics
-----
Nbr Count       : 0
Tot Rx Packets  : 0
Rx Hellos       : 0
Rx DBDs         : 0
Rx LSRs         : 0
Rx LSUs         : 0
Rx LS Acks     : 0
Retransmits     : 0
Bad Networks    : 0
Bad Areas       : 0
Bad Auth Types  : 0
Bad Neighbors   : 0
Bad Lengths     : 0
Bad Dead Int.   : 0
Bad Versions    : 0
LSA Count       : 0
If Events       : 0
Tot Tx Packets  : 0
Tx Hellos       : 0
Tx DBDs         : 0
Tx LSRs         : 0
Tx LSUs         : 0
Tx LS Acks     : 0
Discards        : 0
Bad Virt Links  : 0
Bad Dest Adrs   : 0
Auth Failures   : 0
Bad Pkt Types   : 0
Bad Hello Int.  : 0
Bad Options     : 0
Bad Checksums   : 0
LSA Checksum    : 0x0
=====
    
```

The following output is an example of detailed OSPF interface information, and [Table 212: Detailed OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf 1 interface area 1.1.1.1 detail
```

### Output Example

```

=====
Rtr Base OSPFv2 Instance 1 Interfaces in area 1.1.1.1 (detail)
=====
-----
Interface : ip_if_1
    
```

```

-----
IP Address      : 10.10.1.1
Area Id        : 1.1.1.1
Hello Intrvl   : 9 sec
Retrans Intrvl : 10 sec
Cfg Metric     : 11
Transit Delay  : 2
Passive        : False
LFA            : Exclude
IPsec InStatSA :
IPsec InStatSATmp:
Admin Status   : Enabled
Designated Rtr : 0.0.0.0
IF Type        : Point To Point
Oper MTU       : 1576
Oper Metric    : 11
Te Metric      : 16777215
Admin Groups   : None
Ldp Sync       : outOfService
Ldp Timer State : Disabled
Nbr Count      : 0
Tot Rx Packets : 0
Rx Hellos      : 0
Rx DBDs        : 0
Rx LSRs        : 0
Rx LSUs        : 0
Rx LS Acks     : 0
Retransmits    : 0
Bad Networks   : 0
Bad Areas      : 0
Bad Auth Types : 0
Bad Neighbors  : 0
Bad Lengths    : 0
Bad Dead Int.  : 0
Bad Versions   : 0
LSA Count      : 0
Priority        : 10
Rtr Dead Intrvl : 45 sec
Poll Intrvl    : 120 sec
Advert Subnet  : False
Auth Type      : MD5
Cfg MTU        : 9198
IPsec OutStatSA :
Oper State     : Down
Backup Desig Rtr : 0.0.0.0
Network Type   : Stub
Last Enabled   : Never
Bfd Enabled    : No
Te State       : Down
Ldp Sync Wait  : Disabled
Ldp Tm Left    : 0
If Events      : 0
Tot Tx Packets : 0
Tx Hellos      : 0
Tx DBDs        : 0
Tx LSRs        : 0
Tx LSUs        : 0
Tx LS Acks     : 0
Discards       : 0
Bad Virt Links : 0
Bad Dest Adrs  : 0
Auth Failures  : 0
Bad Pkt Types  : 0
Bad Hello Int. : 0
Bad Options    : 0
Bad Checksums  : 0
LSA Checksum   : 0x0
=====
    
```

The following output is an example of detailed OSPF interface information, and [Table 212: Detailed OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf 1 interface detail
```

### Output Example

```

=====
Rtr Base OSPFv2 Instance 1 Interfaces (detail)
=====
-----
Interface : system
-----
IP Address      : 9.1.255.255
Area Id        : 0.0.0.0
Hello Intrvl   : 10 sec
Retrans Intrvl : 5 sec
Cfg Metric     : 0
Transit Delay  : 1
Passive        : True
Admin Status   : Enabled
Designated Rtr : 2.2.2.2
IF Type        : Broadcast
Oper MTU       : 1500
Priority        : 1
Rtr Dead Intrvl : 40 sec
Poll Intrvl    : 120 sec
Advert Subnet  : True
Auth Type      : None
Cfg MTU        : 0
Oper State     : Designated Rtr
Backup Desig Rtr : 0.0.0.0
Network Type   : Transit
Last Enabled   : 05/14/2006 09:16:26
    
```

```

Oper Metric      : 0
Nbr Count       : 0
Tot Rx Packets  : 0
Rx Hellos       : 0
Rx DBDs         : 0
Rx LSRs         : 0
Rx LSUs         : 0
Rx LS Acks      : 0
Retransmits     : 0
Bad Networks    : 0
Bad Areas       : 0
Bad Auth Types  : 0
Bad Neighbors   : 0
Bad Lengths     : 0
Bad Dead Int.   : 0
Bad Versions    : 0
LSA Count       : 0
Bfd Enabled     : No
If Events       : 5
Tot Tx Packets  : 0
Tx Hellos       : 0
Tx DBDs         : 0
Tx LSRs         : 0
Tx LSUs         : 0
Tx LS Acks      : 0
Discards        : 0
Bad Virt Links  : 0
Bad Dest Adrs   : 0
Auth Failures   : 0
Bad Pkt Types   : 0
Bad Hello Int.  : 0
Bad Options     : 0
Bad Checksums   : 0
LSA Checksum    : 0x0
-----
Interface : sender
-----
IP Address      : 11.1.1.1
Area Id         : 0.0.0.0
Hello Intrvl   : 10 sec
Retrans Intrvl : 5 sec
Cfg Metric      : 0
Transit Delay   : 1
Passive         : False
Priority        : 1
Rtr Dead Intrvl : 40 sec
Poll Intrvl    : 120 sec
Advert Subnet   : True
Auth Type       : None
Cfg MTU         : 0
=====
    
```

The following output is an example of detailed OSPF interface information, and [Table 212: Detailed OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf interface "toB" detail
```

### Output Example (OSPF Detailed)

```

=====
Rtr Base OSPFv2 Instance 0 Interface "toB" (detail)
=====
-----
Configuration
-----
IP Address      : 1.2.3.3
Area Id         : 0.0.0.0
Hello Intrvl   : 2 sec
Retrans Intrvl : 5 sec
Cfg Metric      : 1000
Transit Delay   : 1
Passive         : False
LSA-filter-out  : None
LFA             : Include
Load Bal Weight : None
RIB-priority    : None
Auth Type       : None
Priority        : 1
Rtr Dead Intrvl : 6 sec
Poll Intrvl    : 120 sec
Advert Subnet   : True
Cfg IF Type     : None
Cfg MTU         : 0
Adv Rtr Capab   : Yes
LFA NH Template :
-----
State
-----
Admin Status    : Enabled
Designated Rtr : 10.0.0.3
IF Type         : Broadcast
Oper MTU        : 1486
Oper Metric     : 1000
Oper State      : Designated Rtr
Backup Desig Rtr : 10.0.0.2
Network Type    : Transit
Last Enabled    : 08/12/2021 12:50:44
Bfd Enabled     : No
    
```



```

Te Metric      : 1000          Te State       : Down
Admin Groups   : None
Ldp Sync       : outOfService  Ldp Sync Wait  : Disabled
Ldp Timer State : Disabled      Ldp Tm Left    : 0
    
```

-----  
 Statistics  
 -----

```

Nbr Count      : 1          If Events      : 4
Tot Rx Packets : 38         Tot Tx Packets : 48
Rx Hellos      : 11         Tx Hellos      : 15
Rx DBDs        : 3          Tx DBDs        : 2
Rx LSRs        : 1          Tx LSRs        : 1
Rx LSUs        : 18         Tx LSUs        : 27
Rx LS Acks     : 5          Tx LS Acks     : 3
Discards       : 1          Tx Failures    : 1
               :             Retransmits    : 1
Bad Networks   : 0          Bad Virt Links : 0
Bad Areas      : 0          Bad Dest Adrs  : 0
Bad Auth Types : 0          Auth Failures  : 0
Bad Neighbors  : 0          Bad Pkt Types  : 0
Bad Lengths    : 0          Bad Hello Int. : 1
Bad Dead Int.  : 0          Bad Options    : 0
Bad Versions   : 0          Bad Checksums  : 0
LSA Count      : 0          LSA Checksum   : 0x0
    
```

The following output is an example of the detailed OSPF interface information and [Table 212: Detailed OSPF Interface Output Fields](#) describes the output fields.

```
show router ospf interface detail "to_Dut-A"
```

### Output Example

```

=====
Rtr Base OSPFv2 Instance 0 Interface "to_Dut-A" (detail)
=====
-----
Configuration
-----
IP Address      : 1.1.3.3
Area Id         : 0.0.0.0          Priority        : 1
Hello Intrvl   : 5 sec           Rtr Dead Intrvl : 20 sec
Retrans Intrvl : 5 sec           Poll Intrvl     : 120 sec
Cfg Metric     : 1000            Advert Subnet   : True
Transit Delay  : 1               Cfg IF Type    : Point To Point
Passive        : False           Cfg MTU        : 0
LSA-filter-out : None            Adv Rtr Capab  : Yes
LFA            : Include         LFA NH Template :
Load Bal Weight : None           Bfd Enabled    : Yes
Bfd Strict Mode : No             Bfd Str Holddown : 0 sec
RIB-priority   : None
Auth Type      : None
-----
State
-----
Admin Status    : Enabled          Oper State      : Down
Designated Rtr : 0.0.0.0          Backup Desig Rtr : 0.0.0.0
IF Type         : Point To Point   Network Type    : Stub
Oper MTU        : 1564             Last Enabled    : 11/30/2022 06:07:00
Oper Metric     : 1000
Te Metric       : 1000             Te State        : Down
Admin Groups    : None
    
```

```

Ldp Sync      : outOfService      Ldp Sync Wait   : Disabled
Ldp Timer State : Disabled        Ldp Tm Left     : 0
-----
Statistics
-----
Nbr Count      : 0                If Events       : 2
Tot Rx Packets : 3080             Tot Tx Packets  : 3094
Rx Hellos      : 3029            Tx Hellos       : 3032
Rx DBDs        : 3               Tx DBDs         : 2
Rx LSRs        : 1               Tx LSRs         : 1
Rx LSUs        : 20              Tx LSUs         : 48
Rx LS Acks     : 27              Tx LS Acks      : 11
Discards       : 0               Tx Failures     : 1
                                   Retransmits     : 3
Bad Networks   : 0               Bad Virt Links  : 0
Bad Areas      : 0               Bad Dest Adrs  : 0
Bad Auth Types : 0               Auth Failures  : 0
Bad Neighbors  : 0               Bad Pkt Types  : 0
Bad Lengths    : 0               Bad Hello Int. : 0
Bad Dead Int.  : 0               Bad Options    : 0
Bad Versions   : 0               Bad Checksums  : 0
LSA Count      : 0               LSA Checksum   : 0x0
=====
    
```

Table 211: OSPF Interface Output Fields

Label	Description
If Name	The interface name.
Area Id	A 32-bit integer uniquely identifying the area to which this interface is connected. Area ID 0.0.0.0 is used for the OSPF backbone.
D Rtr Id	The IP interface address of the router identified as the Designated Router for the network in which this interface is configured. Set to 0.0.0.0 if there is no Designated Router.
BD Rtr Id	The IP interface address of the router identified as the Backup Designated Router for the network in which this interface is configured. Set to 0.0.0.0 if there is no Backup Designated router.
Adm	Dn — OSPF on this interface is administratively shut down.
	Up — OSPF on this interface is administratively enabled.
Opr	Down — This is the initial interface state. In this state, the lower-level protocols have indicated that the interface is unusable.
	Wait — The router is trying to determine the identity of the (Backup) Designated router for the network.
	PToP — The interface is operational, and connects either to a physical point-to-point network or to a virtual link.
	DR — This router is the Designated Router for this network.

Label	Description
	<p>BDR — This router is the Backup Designated Router for this network.</p> <p>ODR — The interface is operational and part of a broadcast or NBMA network on which another router has been selected to be the Designated Router.</p>
No. of OSPF Interfaces	The number of interfaces listed.

Table 212: Detailed OSPF Interface Output Fields

Label	Description
Interface	The IP address of this OSPF interface.
IP Address	The IP address and mask of this OSPF interface.
Area Id	A 32-bit integer uniquely identifying the area to which this interface is connected. Area ID 0.0.0.0 is used for the OSPF backbone.
Priority	The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm.
Hello Intrvl	The length of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.
Rtr Dead Intrvl	The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This should be some multiple of the Hello interval. This value must be the same for all routers attached to a common network.
Retrans Intrvl	The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Poll Intrvl	The larger time interval, in seconds, between the Hello packets sent to an inactive non-broadcast multi-access neighbor.
Cfg Metric	The metric to be advertised for this interface.
Advert Subnet	<p>False — When a point-to-point interface is configured as false, then the subnet is not advertised and the endpoints are advertised as host routes.</p> <p>True — When a point-to-point interface is configured to true, then the subnet is advertised.</p>

Label	Description
Transit Delay	The estimated number of seconds it takes to transmit a link state update packet over this interface.
Cfg IF Type	The configured interface type.
Passive	False — This interface operates as a normal OSPF interface with regard to adjacency forming and network/link behavior.  True — No OSPF HELLOs will be sent out on this interface and the router advertises this interface as a stub network/link in its router LSAs.
Cfg MTU	The desired size of the largest packet which can be sent/received on this OSPF interface, specified in octets. This size does include the underlying IP header length, but not the underlying layer headers/trailers.
LSA-filter-out	This field indicates if LSA filter out is configured.
Adv Rtr Capab	The capability of the advertising router.
LFA	This field indicates if Loop-Free Alternate (LFA) is configured.
LFA NH Template	The LFA Next-Hop (NH) template configuration.
Load Bal Weight	The load balancing weight, if this weight is configured.
Bfd Enabled	This field indicates if Bidirectional Forwarding Detection (BFD) is enabled. The field will include one of the following values: <ul style="list-style-type: none"> <li>• Yes – BFD is enabled.</li> <li>• No – BFD is disabled.</li> </ul>
Bfd Strict Mode	This field indicates if BFD strict-mode is enabled. The field will include one of the following values: <ul style="list-style-type: none"> <li>• Yes – BFD strict-mode is enabled.</li> <li>• No – BFD strict-mode is disabled.</li> </ul>
Bfd Str Holddown	The BFD strict-mode holddown timer.
RIB-priority	The RIB prioritization for the OSPF protocol specified as either high (enabled) or none (disabled). When enabled at the OSPF interface level, all routes learned through the associated OSPF interface are processed through the OSPF route calculation process at a higher priority. This field is configured using the <b>configure router ospf area interface rib-priority [high]</b> command.
Auth Type	Identifies the authentication procedure to be used for the packet.  None — Routing exchanges over the network/subnet are not authenticated.

Label	Description
	<p>Simple — A 64-bit field is configured on a per-network basis. All packets sent on a particular network must have this configured value in their OSPF header 64-bit authentication field. This essentially serves as a "clear" 64-bit password.</p> <p>MD5 — A shared secret key is configured in all routers attached to a common network/subnet. For each OSPF protocol packet, the key is used to generate/verify a "message digest" that is appended to the end of the OSPF packet.</p>
Admin Status	Disabled — OSPF on this interface is administratively shut down.
	Enabled — OSPF on this interface is administratively enabled.
Oper State	Down — This is the initial interface state. In this state, the lower-level protocols have indicated that the interface is unusable.
	Waiting — The router is trying to determine the identity of the (Backup) Designated Router for the network.
	Point To Point — The interface is operational, and connects either to a physical point-to-point network or to a virtual link.
	Designated Rtr — This router is the Designated Router for this network.
	Other Desig Rtr — The interface is operational and part of a broadcast or NBMA network on which another router has been selected to be the Designated Router.
	Backup Desig Rtr — This router is the Backup Designated Router for this network.
Designated Rtr	The IP interface address of the router identified as the Designated Router for the network in which this interface is configured. Set to 0.0.0.0 if there is no Designated router.
Backup Designated Router	The IP interface address of the router identified as the Backup Designated Router for the network in which this interface is configured. Set to 0.0.0.0 if there is no Backup Designated Router.
IF Type	Broadcast — LANs, such as Ethernet.
	Non-Broadcast — X.25, Frame Relay and similar technologies.
	Point-To-Point — Point-to-point links.
Network Type	Stub — OSPF has not established a neighbor relationship with any other OSPF router on this network as such only traffic sourced or destined to this network is routed to this network.
	Transit — OSPF has established at least one neighbor relationship with any other OSPF router on this network as such traffic enroute to other networks may be routed via this network.

Label	Description
Oper MTU	The operational size of the largest packet which can be sent or received on this OSPF interface, specified in octets. This size does include the underlying IP header length, but not the underlying layer headers/trailers.
Last Enabled	The time that this interface was last enabled to run OSPF on this interface.
Oper Metric	The operational metric for the interface used by OSPF.
Te Metric	Indicates the TE metric configured for this interface. This metric is flooded out in the TE metric sub-tlv in the OSPF TE LSAs. Depending on the configuration, either the TE metric value or the native OSPF metric value is used in CSPF computations.
Te State	Indicates if TE is enabled on the interface.
Admin Groups	Indicates the bitmap inherited from MPLS interface that identifies the admin groups to which this interface belongs.
Ldp Sync	Specifies whether the IGP-LDP synchronization feature is enabled or disabled on all interfaces participating in the OSPF routing protocol.
Ldp Sync Wait	Indicates the time to wait for the LDP adjacency to come up.
Ldp Timer State	Indicates the state of the LDP sync time left on the OSPF interface.
Ldp Tm Left	Indicates the time left before OSPF reverts back to advertising normal metric for this interface.
Nbr Count	The number of OSPF neighbors on the network for this interface.
If Events	The number of times this OSPF interface has changed its state, or an error has occurred since this interface was last enabled.
Tot Rx Packets	The total number of OSPF packets received on this interface since this interface was last enabled.
Tot Tx Packets	The total number of OSPF packets transmitted on this interface since this interface was last enabled.
Rx Hellos	The total number of OSPF Hello packets received on this interface since this interface was last enabled.
Tx Hellos	The total number of OSPF Hello packets transmitted on this interface since this interface was last enabled.
Rx DBDs	The total number of OSPF database description packets received on this interface since this interface was last enabled.

Label	Description
Tx DBDs	The total number of OSPF database description packets transmitted on this interface since this interface was last enabled.
Rx LSRs	The total number of Link State Requests (LSRs) received on this interface since this interface was last enabled.
Tx LSRs	The total number of Link State Requests (LSRs) transmitted on this interface since this interface was last enabled.
Rx LSUs	The total number of Link State Updates (LSUs) received on this interface since this interface was last enabled.
Tx LSUs	The total number of Link State Updates (LSUs) transmitted on this interface since this interface was last enabled.
Rx LS Acks	The total number of Link State Acknowledgments received on this interface since this interface was last enabled.
Tx LS Acks	The total number of Link State Acknowledgments transmitted on this interface since this interface was last enabled.
Discards	The total number of OSPF packets discarded on this interface since this interface was last enabled.
Tx Failures	Transmitted OSPF packets that are dropped due to resource shortage.
Retransmits	The total number of OSPF Retransmits sent on this interface since this interface was last enabled.
Bad Networks	The total number of OSPF packets received with invalid network or mask since this interface was last enabled.
Bad Virt Links	The total number of OSPF packets received on this interface that are destined to a virtual link that does not exist since this interface was last enabled.
Bad Areas	The total number of OSPF packets received with an area mismatch since this interface was last enabled.
Bad Dest Addr	The total number of OSPF packets received with the incorrect IP destination address since this interface was last enabled.
Bad Auth Types	The total number of OSPF packets received with an invalid authorization type since this interface was last enabled.
Auth Failures	The total number of OSPF packets received with an invalid authorization key since this interface was last enabled.

Label	Description
Bad Neighbors	The total number of OSPF packets received where the neighbor information does not match the information this router has for the neighbor since this interface was last enabled.
Bad Pkt Types	The total number of OSPF packets received with an invalid OSPF packet type since this interface was last enabled.
Bad Lengths	The total number of OSPF packets received on this interface with a total length not equal to the length given in the packet itself since this interface was last enabled.
Bad Hello Int.	The total number of OSPF packets received where the hello interval given in packet was not equal to that configured on this interface since this interface was last enabled.
Bad Dead Int.	The total number of OSPF packets received where the dead interval given in the packet was not equal to that configured on this interface since this interface was last enabled.
Bad Options	The total number of OSPF packets received with an option that does not match those configured for this interface or area since this interface was last enabled.
Bad Versions	The total number of OSPF packets received with bad OSPF version numbers since this interface was last enabled.
Bad Checksums	The number of bad checksums for the interface.
LSA Count	The LSA count for the interface.
LSA Checksum	The sum of all link-scoped LSA checksums on the interface.

## interface

### Syntax

**interface** [*ip-int-name* | *ip-address* | *ipv6-address*] [**detail**]

**interface** [*area area-id*] [**detail**]

**interface** [*ip-int-name* | *ip-address* ]| *ipv6-address* **database** [**detail**]

### Context

[\[Tree\]](#) (show>router>ospf3 interface)

### Full Context

show router ospf3 interface



## Description

This command displays the details of the OSPFv3 interface identified by the IP address or IP interface name. When neither is specified, all in-service interfaces are displayed.

The **detail** option generates large volumes of data. Nokia recommends using the **detail** keyword only when requesting a specific interface.

## Parameters

### *ip-int-name*

Displays only the interface identified by this interface name, up to a maximum of 32 characters.

### *ip-address*

Displays only the interface identified by this IPv4 or IPv6 address.

- Values**
- ipv4-address:
    - a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF]H
    - d: [0 to 255]D

### *area area-id*

Displays all interfaces configured in this area.

- Values**
- ip-address — a.b.c.d
  - area — 0 to 4294967295

### *detail*

Displays detailed information for the interface.

### *database*

Displays database information for the interface.

## Platforms

All

## Output

The following output is an example of an OSPFv3 interface information, and [Table 213: Detailed OSPFv3 Interface Output Fields](#) describes the output fields.

### Output Example (OSPFv3 Detailed)

```
show router ospf3 interface "toB" detail
=====
Rtr Base OSPFv3 Instance 0 Interface "toB" (detail)
=====
-----
Configuration
```

```

-----
IP Address      : fe80::200:ff:fe00:3-"toB"
Area Id        : 0.0.0.0          Priority      : 1
Hello Intrvl   : 2 sec           Rtr Dead Intrvl : 10 sec
Retrans Intrvl : 5 sec           Poll Intrvl   : 120 sec
Cfg Metric     : 1000            Advert Subnet  : True
Transit Delay  : 1              Cfg IF Type    : None
Passive        : False          Cfg MTU        : 0
LSA-filter-out : None           Adv Rtr Capab  : Yes
LFA            : Include        LFA NH Template :
Load Bal Weight : None
RIB-priority   : None
IPsec InStatSA :                 IPsec OutStatSA :
IPsec InStatSATmp:
-----
State
-----
Admin Status   : Enabled          Oper State    : Designated Rtr
Designated Rtr : 10.0.0.3        Backup Desig Rtr : 10.0.0.2
IF Type        : Broadcast       Network Type   : Transit
Oper MTU       : 1486           Last Enabled   : 08/12/2021 12:50:45
Oper Metric    : 1000           Bfd Enabled    : No
Te Metric      : 1000           Te State      : Down
Admin Groups   : None
Ldp Sync      : outOfService     Ldp Sync Wait  : Disabled
Ldp Timer State : Disabled       Ldp Tm Left    : 0
-----
Statistics
-----
Nbr Count      : 1              If Events     : 2
Tot Rx Packets : 141           Tot Tx Packets : 162
Rx Hellos      : 93            Tx Hellos     : 94
Rx DBDs        : 3             Tx DBDs       : 2
Rx LSRs        : 1             Tx LSRs       : 1
Rx LSUs        : 39           Tx LSUs       : 62
Rx LS Acks     : 5             Tx LS Acks    : 3
Discards       : 0             Tx Failures   : 0
Retransmits    : 0
Bad Networks   : 0             Bad Virt Links : 0
Bad Areas      : 0             Bad Dest Adrs  : 0
Bad Auth Types : 0             Auth Failures  : 0
Bad Neighbors  : 0             Bad Pkt Types  : 0
Bad Lengths    : 0             Bad Hello Int. : 0
Bad Dead Int.  : 0             Bad Options    : 0
Bad Versions   : 0             Bad Checksums  : 0
LSA Count      : 2             LSA Checksum   : 0x136b4
=====
    
```

Table 213: Detailed OSPFv3 Interface Output Fields

Label	Description
IP Address	The IP address and mask of this OSPF interface.
Area Id	A 32-bit integer uniquely identifying the area to which this interface is connected. Area ID 0.0.0.0 is used for the OSPF backbone.
Priority	The priority of this interface. Used in multi-access networks, this field is used in the designated router election algorithm.

Label	Description
Hello Intrvl	The interval of time, in seconds, between the Hello packets that the router sends on the interface. This value must be the same for all routers attached to a common network.
Rtr Dead Intrvl	The number of seconds that a router's Hello packets have not been seen before its neighbors declare the router down. This should be some multiple of the hello interval. This value must be the same for all routers attached to a common network.
Retrans Intrvl	The number of seconds between link-state advertisement retransmissions, for adjacencies belonging to this interface. This value is also used when retransmitting database description and link-state request packets.
Poll Intrvl	The larger time interval, in seconds, between the Hello packets sent to an inactive non-broadcast multi-access neighbor.
Advert Subnet	False — When a point-to-point interface is configured as false, the subnet is not advertised and the endpoints are advertised as host routes.  True — When a point-to-point interface is configured to true, then the subnet is advertised.
Transit Delay	The estimated number of seconds it takes to transmit a link state update packet over this interface.
Passive	False — This interfaces operates as a normal OSPF interface with regard to adjacency forming and network/link behavior.  True — No OSPF Hello messages sent out on this interface and the router advertises this interface as a stub network/link in its router LSAs.
MTU	The desired size of the largest packet, specified in octets, which can be sent or received on this OSPF interface. This size includes the underlying IP header length, but not the underlying layer headers and trailers.
Admin Status	Disabled — OSPF on this interface is administratively shut down.  Enabled — OSPF on this interface is administratively enabled.
Oper State	Down — This is the initial interface state. In this state, the lower-level protocols have indicated that the interface is unusable.  Waiting — The router is trying to determine the identity of the (Backup) Designated router for the network.  Point To Point — The interface is operational, and connects either to a physical point-to-point network or to a virtual link.  Designated Rtr — This router is the Designated router for this network.

Label	Description
	<p>Other Desig Rtr — The interface is operational and part of a broadcast or NBMA network on which another router has been selected to be the Designated router.</p> <p>Backup Desig Rtr — This router is the Backup Designated router for this network.</p>
IF Type	<p>Broadcast — LANs, such as Ethernet.</p> <p>Non-Broadcast — X.25, Frame Relay and similar technologies.</p> <p>Point-To-Point — Point-to-point links.</p>
Network Type	<p>Stub — OSPF has not established a neighbor relationship with any other OSPF router on this network as such only traffic sourced or destined to this network is routed to this network.</p> <p>Transit — OSPF has established at least one neighbor relationship with any other OSPF router on this network as such traffic enroute to other networks may be routed via this network.</p>
Oper MTU	The operational size of the largest packet, in octets, which can be sent or received on this OSPF interface. This size includes the underlying IP header length, but not the underlying layer headers and trailers.
Last Enabled	The time that this interface was last enabled to run OSPF on this interface.
Nbr Count	The number of OSPF neighbors on the network for this interface.
If Events	The number of times this OSPF interface has changed its state, or an error has occurred since this interface was last enabled.
Tot Rx Packets	The total number of OSPF packets received on this interface since this interface was last enabled.
Tot Tx Packets	The total number of OSPF packets transmitted on this interface since this interface was last enabled.
Rx Hellos	The total number of OSPF Hello packets received on this interface since this interface was last enabled.
Tx Hellos	The total number of OSPF Hello packets transmitted on this interface since this interface was last enabled.
Rx DBDs	The total number of OSPF database description packets received on this interface since this interface was last enabled.
Tx DBDs	The total number of OSPF database description packets transmitted on this interface since this interface was last enabled.

Label	Description
Rx LSRs	The total number of Link State Requests (LSRs) received on this interface since this interface was last enabled.
Tx LSRs	The total number of LSRs transmitted on this interface since this interface was last enabled.
Rx LSUs	The total number of Link State Updates (LSUs) received on this interface since this interface was last enabled.
Tx LSUs	The total number of LSUs transmitted on this interface since this interface was last enabled.
Rx LS Acks	The total number of Link State Acknowledgments (LSAs) received on this interface since this interface was last enabled.
Tx LS Acks	The total number of LSAs transmitted on this interface since this interface was last enabled.
Retransmits	The total number of OSPF retransmits sent on this interface since this interface was last enabled.
Discards	The total number of OSPF packets discarded on this interface since this interface was last enabled.
Bad Networks	The total number of OSPF packets received with invalid network or mask since this interface was last enabled.
Bad Virt Links	The total number of OSPF packets received on this interface that are destined to a virtual link that does not exist since this interface was last enabled.
Bad Areas	The total number of OSPF packets received with an area mismatch since this interface was last enabled.
Bad Dest Adrs	The total number of OSPF packets received with the incorrect IP destination address since this interface was last enabled.
Bad Auth Types	The total number of OSPF packets received with an invalid authorization type since this interface was last enabled.
Auth Failures	The total number of OSPF packets received with an invalid authorization key since this interface was last enabled.
Bad Neighbors	The total number of OSPF packets received where the neighbor information does not match the information this router has for the neighbor since this interface was last enabled.
Bad Pkt Types	The total number of OSPF packets received with an invalid OSPF packet type since this interface was last enabled.

Label	Description
Bad Lengths	The total number of OSPF packets received on this interface with a total length not equal to the length given in the packet itself since this interface was last enabled.
Bad Hello Int.	The total number of OSPF packets received where the hello interval given in packet was not equal to that configured on this interface since this interface was last enabled.
Bad Dead Int.	The total number of OSPF packets received where the dead interval given in the packet was not equal to that configured on this interface since this interface was last enabled.
Bad Options	The total number of OSPF packets received with an option that does not match those configured for this interface or area since this interface was last enabled.
Bad Versions	The total number of OSPF packets received with bad OSPF version numbers since this interface was last enabled.
Te State	Indicates the MPLS interface TE status from OSPF standpoint.
Admin Groups	Indicates the bit-map inherited from MPLS interface that identifies the admin groups to which this interface belongs.
Ldp Sync	Specifies whether the IGP-LDP synchronization feature is enabled or disabled on all interfaces participating in the OSPF routing protocol.
Ldp Sync Wait	Indicates the time to wait for the LDP adjacency to come up.
Ldp Timer State	Indicates the state of the LDP sync time left on the OSPF interface.
Ldp Tm Left	Indicates the time left before OSPF reverts back to advertising normal metric for this interface.
Tx Failures	Transmitted OSPFv3 packets that are dropped due to resource shortage.

### Output Example

```
*A:Dut-C# show router ospf3 interface "Loopback0" detail
=====
Rtr Base OSPFv3 Instance 0 Interface "Loopback0" (detail)
=====
-----
Configuration
-----
IP Address       : fe80::e13:ffff:fe00:0- "Loopback0"
node sid index  : 29
Area Id          : 0.0.0.0
Hello Intrvl    : 10 sec
Retrans Intrvl  : 5 sec
Cfg Metric      : 0
Shared node sid : <Yes/No>
Priority         : 1
Rtr Dead Intrvl : 40 sec
Poll Intrvl     : 120 sec
Advert Subnet   : True
```

```

Transit Delay      : 1                Cfg IF Type       : None
Passive           : False             Cfg MTU           : 0
LSA-filter-out    : None              Adv Rtr Capab     : Yes
LFA               : Include           LFA NH Template   :
Load Bal Weight   : None
RIB-priority      : None
IPsec InStatSA    :                   IPsec OutStatSA   :
IPsec InStatSATmp:
-----
State
-----
Admin Status      : Enabled            Oper State        : Designated Rtr
Designated Rtr    : 255.0.0.0          Backup Desig Rtr : 0.0.0.0
IF Type           : Broadcast         Network Type      : Stub
Oper MTU          : 1500              Last Enabled     : 12/03/2020 14:14:33
Oper Metric       : 0                 Bfd Enabled      : No
Te Metric         : 0                 Te State         : Down
Admin Groups      : None
Ldp Sync          : outOfService       Ldp Sync Wait    : Disabled
Ldp Timer State   : Disabled           Ldp Tm Left      : 0
-----
Statistics
-----
Nbr Count         : 0                 If Events        : 2
Tot Rx Packets    : 0                 Tot Tx Packets   : 0
Rx Hellos         : 0                 Tx Hellos        : 0
Rx DBDs           : 0                 Tx DBDs          : 0
Rx LSRs           : 0                 Tx LSRs          : 0
Rx LSUs           : 0                 Tx LSUs          : 0
Rx LS Acks        : 0                 Tx LS Acks       : 0
Retransmits      : 0                 Discards         : 0
Bad Networks      : 0                 Bad Virt Links   : 0
Bad Areas         : 0                 Bad Dest Addrs   : 0
Bad Auth Types    : 0                 Auth Failures    : 0
Bad Neighbors     : 0                 Bad Pkt Types    : 0
Bad Lengths       : 0                 Bad Hello Int.   : 0
Bad Dead Int.     : 0                 Bad Options      : 0
Bad Versions      : 0                 Bad Checksums    : 0
LSA Count         : 0                 LSA Checksum     : 0x0
=====
*A:Dut-C#
    
```

## interface

### Syntax

**interface** *interface-name* [**detail** | **aggregate** | **sample**]

### Context

**[Tree]** (show>test-oam>link-measurement interface)

### Full Context

show test-oam link-measurement interface

## Description

This command displays the link measurement operational information, reporting, and recorded results for a specific interface.

## Parameters

### *interface-name*

Specifies the interface name, up to 32 characters, for which link measurement information is displayed.

### **detail**

Optional keyword to display complete link measurement operational information, reporting, and results.

### **aggregate**

Optional keyword to display operational information, reporting and aggregate sample window results.

### **sample**

Optional keyword to display operational information, reporting, and sample window results.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of link measurement information for a specific interface, and the following table describes the output fields.

### Output Example

```
show test-oam link-measurement interface "int-PE-1-PE-2"
=====
Interface Link Measurement Information - int-PE-1-PE-2
=====
Template Name: standard-direct
Oper State      : Up
Protocol        : IPv6
Oper Source Address : fe80::223:3eff:fe92:4a50
Source Auto-Assigned : No
Oper Destination Address : fe80::427c:7dff:fe48:5681
Destination Auto-Assigned: No
Failure Condition(s) : None
Detectable Tx Error   : None
-----
Reporting
-----
Reporting Enabled      : Yes
Delay Measure Last Reported: 28us
Timestamp              : 2021/06/17 17:58:48
Triggered By          : SampleThresholdAbsolute
=====
show test-oam link-measurement interface "int-PE-1-PE-2" sample
=====
Interface Link Measurement Information - int-PE-1-PE-2
=====
Template Name: standard-direct
Oper State      : Up
```



```

Protocol           : IPv6
Oper Source Address : fe80::223:3eff:fe92:4a50
Source Auto-Assigned : No
Oper Destination Address : fe80::427c:7dff:fe48:5681
Destination Auto-Assigned: No
Failure Condition(s) : None
Detectable Tx Error  : None
-----
Reporting
-----
Reporting Enabled      : Yes
Delay Measure Last Reported: 28us
Timestamp             : 2021/06/17 17:58:48
Triggered By         : SampleThresholdAbsolute
-----
Sample Window Delay Measurement Detail                Currently Reporting: Max
-----
End Timestamp (UTC)      State  Rcv/Snt  Min(us) Max(us) Avg(us) Err I  Result
-----
N/A                      InProgress  2/2      0       0       0  0 -    0
2021/06/20 17:47:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:46:48     Completed  60/60    21      25      23  0 Y    25
2021/06/20 17:45:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:44:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:43:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:42:48     Completed  60/60    23      27      23  0 Y    27
2021/06/20 17:41:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:40:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:39:48     Completed  60/60    23      27      24  0 Y    27
2021/06/20 17:38:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:37:48     Completed  60/60    21      25      23  0 Y    25
2021/06/20 17:36:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:35:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:34:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:33:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:32:48     Completed  60/60    23      27      23  0 Y    27
2021/06/20 17:31:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:30:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:29:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:28:48     Completed  60/60    21      25      23  0 Y    25
2021/06/20 17:27:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:26:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:25:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:24:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:23:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:22:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:21:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:20:48     Completed  60/60    21      25      23  0 Y    25
2021/06/20 17:19:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:18:48     Completed  60/60    21      25      23  0 Y    25
2021/06/20 17:17:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:16:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:15:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:14:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:13:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:12:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:11:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:10:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:09:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:08:48     Completed  60/60    21      27      24  0 Y    27
2021/06/20 17:07:48     Completed  60/60    21      27      23  0 Y    27
2021/06/20 17:06:48     Completed  60/60    21      25      23  0 Y    25
2021/06/20 17:05:48     Completed  60/60    23      27      24  0 Y    27
2021/06/20 17:04:48     Completed  60/60    21      25      23  0 Y    25
    
```

```

2021/06/20 17:03:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 17:02:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 17:01:48 Completed 60/60 21 25 23 0 Y 25
2021/06/20 17:00:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 16:59:48 Completed 60/60 21 27 23 0 Y 27
    
```

```

-----
Sample and Aggregate Legend:
*: Value greater than column width
N/A: Nonexistent or incalculable value
I: Integrity threshold satisfied
Err: Count of duplicate packets and zero or negative valued measurements
    
```

```

=====
show test-oam link-measurement interface "int-PE-1-PE-2" aggregate
=====
    
```

```

-----
Interface Link Measurement Information - int-PE-1-PE-2
=====
    
```

```

Template Name: standard-direct
Oper State      : Up
Protocol        : IPv6
Oper Source Address : fe80::223:3eff:fe92:4a50
Source Auto-Assigned : No
Oper Destination Address : fe80::427c:7dff:fe48:5681
Destination Auto-Assigned: No
Failure Condition(s) : None
Detectable Tx Error   : None
    
```

```

-----
Reporting
-----
    
```

```

Reporting Enabled      : Yes
Delay Measure Last Reported: 28us
Timestamp              : 2021/06/17 17:58:48
Triggered By          : SampleThresholdAbsolute
    
```

```

-----
Aggregate Sample Window Delay Measurement Detail          Currently Reporting: Max
-----
    
```

End Timestamp (UTC)	State	Count	Min(us)	Max(us)	Avg(us)	I	Result
N/A	InProgress	1	0	0	0	-	0
2021/06/20 17:46:48	Completed	3	25	27	26	Y	27
2021/06/20 17:43:48	Completed	3	27	27	27	Y	27
2021/06/20 17:40:48	Completed	3	27	27	27	Y	27
2021/06/20 17:37:48	Completed	3	25	27	26	Y	27
2021/06/20 17:34:48	Completed	3	27	27	27	Y	27
2021/06/20 17:31:48	Completed	3	27	27	27	Y	27
2021/06/20 17:28:48	Completed	3	25	27	26	Y	27
2021/06/20 17:25:48	Completed	3	27	27	27	Y	27
2021/06/20 17:22:48	Completed	3	25	27	26	Y	27
2021/06/20 17:19:48	Completed	3	25	27	26	Y	27
2021/06/20 17:16:48	Completed	3	27	27	27	Y	27
2021/06/20 17:13:48	Completed	3	27	27	27	Y	27
2021/06/20 17:10:48	Completed	3	27	27	27	Y	27
2021/06/20 17:07:48	Completed	3	25	27	26	Y	27
2021/06/20 17:04:48	Completed	3	25	27	26	Y	27
2021/06/20 17:01:48	Completed	3	25	27	26	Y	27
2021/06/20 16:58:48	Completed	3	25	27	26	Y	27
2021/06/20 16:55:48	Completed	3	25	27	26	Y	27
2021/06/20 16:52:48	Completed	3	25	27	26	Y	27

```

-----
Sample and Aggregate Legend:
*: Value greater than column width
N/A: Nonexistent or incalculable value
I: Integrity threshold satisfied
Err: Count of duplicate packets and zero or negative valued measurements
=====
    
```

```

show test-oam link-measurement interface "int-PE-1-PE-2" detail
=====
Interface Link Measurement Information - int-PE-1-PE-2
=====
Template Name: standard-direct
Oper State           : Up
Protocol             : IPv6
Oper Source Address  : fe80::223:3eff:fe92:4a50
Source Auto-Assigned : No
Oper Destination Address : fe80::427c:7dff:fe48:5681
Destination Auto-Assigned: No
Failure Condition(s) : None
Detectable Tx Error  : None
-----
Reporting
-----
Reporting Enabled      : Yes
Delay Measure Last Reported: 28us
Timestamp              : 2021/06/17 17:58:48
Triggered By          : SampleThresholdAbsolute
-----
Aggregate Sample Window Delay Measurement Detail           Currently Reporting: Max
-----
End Timestamp (UTC)           State Count Min(us) Max(us) Avg(us) I Result
-----
N/A                           InProgress 1      0      0      0 -      0
2021/06/20 19:04:48          Completed 3      25     27     26 Y     27
2021/06/20 19:01:48          Completed 3      25     27     26 Y     27
2021/06/20 18:58:48          Completed 3      27     27     27 Y     27
2021/06/20 18:55:48          Completed 3      27     27     27 Y     27
2021/06/20 18:52:48          Completed 3      27     27     27 Y     27
2021/06/20 18:49:48          Completed 3      27     27     27 Y     27
2021/06/20 18:46:48          Completed 3      27     27     27 Y     27
2021/06/20 18:43:48          Completed 3      27     27     27 Y     27
2021/06/20 18:40:48          Completed 3      27     27     27 Y     27
2021/06/20 18:37:48          Completed 3      25     25     25 Y     25
2021/06/20 18:34:48          Completed 3      27     27     27 Y     27
2021/06/20 18:31:48          Completed 3      27     27     27 Y     27
2021/06/20 18:28:48          Completed 3      25     27     26 Y     27
2021/06/20 18:25:48          Completed 3      27     27     27 Y     27
2021/06/20 18:22:48          Completed 3      27     27     27 Y     27
2021/06/20 18:19:48          Completed 3      27     27     27 Y     27
2021/06/20 18:16:48          Completed 3      27     27     27 Y     27
2021/06/20 18:13:48          Completed 3      27     27     27 Y     27
2021/06/20 18:10:48          Completed 3      25     27     26 Y     27
-----
Sample Window Delay Measurement Detail           Currently Reporting: Max
-----
End Timestamp (UTC)           State Rcv/Snt Min(us) Max(us) Avg(us) Err I Result
-----
N/A                           InProgress 44/44      0      0      0 0 -      0
2021/06/20 19:05:48          Completed 60/60     21     27     23 0 Y     27
2021/06/20 19:04:48          Completed 60/60     21     25     23 0 Y     25
2021/06/20 19:03:48          Completed 60/60     21     27     24 0 Y     27
2021/06/20 19:02:48          Completed 60/60     21     27     23 0 Y     27
2021/06/20 19:01:48          Completed 60/60     21     27     23 0 Y     27
2021/06/20 19:00:48          Completed 60/60     21     25     24 0 Y     25
2021/06/20 18:59:48          Completed 60/60     21     27     23 0 Y     27
2021/06/20 18:58:48          Completed 60/60     21     27     23 0 Y     27
2021/06/20 18:57:48          Completed 60/60     21     27     23 0 Y     27
2021/06/20 18:56:48          Completed 60/60     21     27     23 0 Y     27
2021/06/20 18:55:48          Completed 60/60     21     27     24 0 Y     27
2021/06/20 18:54:48          Completed 60/60     21     27     24 0 Y     27
2021/06/20 18:53:48          Completed 60/60     21     27     24 0 Y     27
    
```

```

2021/06/20 18:52:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:51:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:50:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:49:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:48:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:47:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:46:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:45:48 Completed 60/60 23 27 23 0 Y 27
2021/06/20 18:44:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:43:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:42:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:41:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:40:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:39:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:38:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:37:48 Completed 60/60 21 25 23 0 Y 25
2021/06/20 18:36:48 Completed 60/60 21 25 23 0 Y 25
2021/06/20 18:35:48 Completed 60/60 21 25 23 0 Y 25
2021/06/20 18:34:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:33:48 Completed 60/60 23 27 24 0 Y 27
2021/06/20 18:32:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:31:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:30:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:29:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:28:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:27:48 Completed 60/60 21 25 23 0 Y 25
2021/06/20 18:26:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:25:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:24:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:23:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:22:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:21:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:20:48 Completed 60/60 21 27 24 0 Y 27
2021/06/20 18:19:48 Completed 60/60 23 27 24 0 Y 27
2021/06/20 18:18:48 Completed 60/60 21 27 23 0 Y 27
2021/06/20 18:17:48 Completed 60/60 21 27 23 0 Y 27
    
```

```

-----
Sample and Aggregate Legend:
*: Value greater than column width
N/A: Nonexistent or incalculable value
I: Integrity threshold satisfied
Err: Count of duplicate packets and zero or negative valued measurements
=====
    
```

Table 214: Output Fields: Link Measurement Interface

Label	Description
<b>Interface Link Measurement Information</b>	
Template Name	The name of the link measurement template
Oper State	The operational state of the test configured under the interface  Up — assigned link-measurement template, and a test protocol is enabled; UDP port available, and internal resources are available  Down — one or more requirements for the Up state is not met

Label	Description
Protocol	The active protocol encapsulating the test packet IPv4 or IPv6
Oper Source Address	The source address of the test packet
Source Auto-Assigned	The source address is automatically determined No — the source is configured or cannot be automatically determined Yes — the source is automatically determined
Oper Destination Address	The destination address of the test packet (IPv4 or IPv6)
Destination Auto-Assigned	The destination address is automatically determined. No — the destination is configured or cannot be automatically determined Yes — the destination is automatically determined
Failure Condition(s)	The requirements not met causing an Oper Down state
Detectable Tx Errors	The error condition detected that may prevent the test packet from being sent
<b>Reporting</b>	
Reporting Enabled	The current value should be compared to a threshold and possibly reported Yes — at least one threshold in either window is configured No — none of the thresholds in either window is configured
Delay Measurement Last Reported	The value of the last measurement reported to the routing engine
Timestamp	The end timestamp (UTC) of the last reported delay measurement
Trigger By	The window and threshold type that was exceeded triggering the reporting. Only one will be reported if multiple are triggered in the same window.
<b>Aggregate Sample Window Delay Measurement Detail</b>	
Count	The number of sample widows included in the aggregate sample window
<b>Sample Window Delay Measurement Detail</b>	

Label	Description
Rcv/Snt	The number of response test packets received (Rcv) and sent (Snt)
Err	The number of errors included in the sample window. This is the total of duplicates, zero, and negative valued measurements. The negative error count is incremented if either direction is negative, regardless of the unidirectional-measurement configuration method. A negative measurement in either direction calls into question the validity of both directions. Errors are included in the receive count, but do not count toward integrity. * — value exceeds column width; value more than 999
<b>Common Table Labels</b>	
Currently Reporting	The configured value of the delay measurement to consider (Min, Max, Avg)
End Timestamp (UTC)	The time at which the window closed
State	The state of the window InProgress — currently executing Completed — closed via normal execution Terminated — preempted by some action; closed and not considered for report SwReported — new delay reported from this sample window AswReported — new delay reported from this aggregate sample window (only applicable to Aggregate Sample Windows)
Min (us)	The minimum delay value recorded in this window, in units microseconds N/A — not applicable or incalculable, when no responses are received, or all are in error * — value exceeds column width; value in excess of 9999999
Max (us)	The maximum delay value recorded in this window, in units microseconds N/A — not applicable or incalculable, when no responses are received, or all are in error * — value exceeds column width; value in excess of 9999999
Avg (us)	The average delay value recorded in this window, in units microseconds

Label	Description
	N/A — not applicable or incalculable, when no responses are received, or all are in error * — value exceeds column width; value in excess of 9999999
I	The window has integrity and should be considered Y — yes, achieved integrity N — no, did not meet configured integrity percentage
Results	The metric considered for reporting in this window N/A — not applicable or incalculable, when no responses are received, or all are in * — value exceeds column width; value more than 9999999

## interface

### Syntax

**interface** *interface* [*interface*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**] [**aux-stats**]

### Context

[\[Tree\]](#) (monitor>router>mpls interface)

### Full Context

monitor router mpls interface

### Description

This command displays statistics for MPLS interfaces at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the MPLS interface(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *interface*

Specifies the IP address of the interface (*ip-address*) or interface name (*ip-int-name*). Up to five interfaces can be specified. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**Values** *ip-int-name, ip-address*

### **seconds**

Configures the interval for each display, in seconds.

**Values** 11 to 60

**Default** 11 seconds

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic instead of the delta.

### **aux-stats**

Displays auxiliary MPLS statistics next to the default MPLS statistics.

## **Platforms**

All

## **Output**

The following output is an example of MPLS interface information.

### **Output Example**

```
A:ALA-12>monitor>router>mpls# interface system interval 3 repeat 3 absolute
=====
Monitor statistics for MPLS Interface "system"
=====
At time t = 0 sec (Base Statistics)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
-----
At time t = 3 sec (Mode: Absolute)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
-----
At time t = 6 sec (Mode: Absolute)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
-----
At time t = 9 sec (Mode: Absolute)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
=====
A:ALA-12>monitor>router>mpls#
```



```
A:ALA-12>monitor>router>mpls# interface system interval 3 repeat 3 rate
=====
Monitor statistics for MPLS Interface "system"
=====
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
-----
At time t = 3 sec (Mode: Rate)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
-----
At time t = 6 sec (Mode: Rate)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
-----
At time t = 9 sec (Mode: Rate)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
=====
A:ALA-12>monitor>router>mpls#

A:ALA-12>monitor router mpls interface aux-stats
=====
Monitor statistics for MPLS Interface "toR2"
=====
-----
At time t = 0 sec (Base Statistics)
-----
Transmitted  : Pkts - 0                Octets - 0
Received     : Pkts - 0                Octets - 0
Transmitted  : SR-Pkts - 0            SR-Octets - 0
Received     : SR-Pkts - 0            SR-Octets - 0
=====
A:ALA-12>monitor>router>mpls#
```

## interface

### Syntax

**interface** *interface* [*interface*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>router>ospf interface)

[\[Tree\]](#) (monitor>router>ospf3 interface)

### Full Context

monitor router ospf interface

monitor router ospf3 interface

## Description

This command displays statistics for OSPF interfaces at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the OSPF interface(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *interface*

Specifies the IP address of the interface (*ip-address*) or interface name (*ip-int-name*). Up to five interfaces can be specified. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**Values** *ip-int-address, ip-address*

### *seconds*

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## Output

The following output is an example of OSPF interface information.

### Output Example

```
A:ALA-12>monitor>router>ospf# interface to-104 interval 3 repeat 3 absolute
=====
Monitor statistics for OSPF Interface "to-104"
```

```
=====
At time t = 0 sec (Base Statistics)
-----
Tot Rx Packets : 8379          Tot Tx Packets : 8528
Rx Hellos      : 8225          Tx Hellos      : 8368
Rx DBDs        : 6             Tx DBDs        : 12
Rx LSRs        : 2             Tx LSRs        : 1
Rx LSUs        : 55            Tx LSUs        : 95
Rx LS Acks     : 91            Tx LS Acks     : 52
Retransmits    : 2             Discards       : 0
Bad Networks   : 0             Bad Virt Links : 0
Bad Areas      : 0             Bad Dest Adrs  : 0
Bad Auth Types : 0             Auth Failures  : 0
Bad Neighbors  : 0             Bad Pkt Types  : 0
Bad Lengths    : 0             Bad Hello Int. : 0
Bad Dead Int.  : 0             Bad Options    : 0
Bad Versions   : 0
-----
At time t = 3 sec (Mode: Absolute)
-----
Tot Rx Packets : 8379          Tot Tx Packets : 8528
Rx Hellos      : 8225          Tx Hellos      : 8368
Rx DBDs        : 6             Tx DBDs        : 12
Rx LSRs        : 2             Tx LSRs        : 1
Rx LSUs        : 55            Tx LSUs        : 95
Rx LS Acks     : 91            Tx LS Acks     : 52
Retransmits    : 2             Discards       : 0
Bad Networks   : 0             Bad Virt Links : 0
Bad Areas      : 0             Bad Dest Adrs  : 0
Bad Auth Types : 0             Auth Failures  : 0
Bad Neighbors  : 0             Bad Pkt Types  : 0
Bad Lengths    : 0             Bad Hello Int. : 0
Bad Dead Int.  : 0             Bad Options    : 0
Bad Versions   : 0
-----
At time t = 6 sec (Mode: Absolute)
-----
Tot Rx Packets : 8380          Tot Tx Packets : 8529
Rx Hellos      : 8226          Tx Hellos      : 8369
Rx DBDs        : 6             Tx DBDs        : 12
Rx LSRs        : 2             Tx LSRs        : 1
Rx LSUs        : 55            Tx LSUs        : 95
Rx LS Acks     : 91            Tx LS Acks     : 52
Retransmits    : 2             Discards       : 0
Bad Networks   : 0             Bad Virt Links : 0
Bad Areas      : 0             Bad Dest Adrs  : 0
Bad Auth Types : 0             Auth Failures  : 0
Bad Neighbors  : 0             Bad Pkt Types  : 0
Bad Lengths    : 0             Bad Hello Int. : 0
Bad Dead Int.  : 0             Bad Options    : 0
Bad Versions   : 0
-----
At time t = 9 sec (Mode: Absolute)
-----
Tot Rx Packets : 8380          Tot Tx Packets : 8529
Rx Hellos      : 8226          Tx Hellos      : 8369
Rx DBDs        : 6             Tx DBDs        : 12
Rx LSRs        : 2             Tx LSRs        : 1
Rx LSUs        : 55            Tx LSUs        : 95
Rx LS Acks     : 91            Tx LS Acks     : 52
Retransmits    : 2             Discards       : 0
Bad Networks   : 0             Bad Virt Links : 0
Bad Areas      : 0             Bad Dest Adrs  : 0
Bad Auth Types : 0             Auth Failures  : 0
```

```
Bad Neighbors : 0          Bad Pkt Types : 0
Bad Lengths   : 0          Bad Hello Int. : 0
Bad Dead Int. : 0          Bad Options   : 0
Bad Versions  : 0

=====
A:ALA-12>monitor>router>ospf#

A:ALA-12>monitor>router>ospf# interface to-104 interval 3 repeat 3 rate

=====
Monitor statistics for OSPF Interface "to-104"
=====
At time t = 0 sec (Base Statistics)
-----
Tot Rx Packets : 8381          Tot Tx Packets : 8530
Rx Hellos      : 8227          Tx Hellos      : 8370
Rx DBDs        : 6            Tx DBDs        : 12
Rx LSRs        : 2            Tx LSRs        : 1
Rx LSUs        : 55           Tx LSUs        : 95
Rx LS Acks     : 91           Tx LS Acks     : 52
Retransmits    : 2            Discards       : 0
Bad Networks   : 0            Bad Virt Links : 0
Bad Areas      : 0            Bad Dest Adrs  : 0
Bad Auth Types : 0            Auth Failures  : 0
Bad Neighbors  : 0            Bad Pkt Types  : 0
Bad Lengths    : 0            Bad Hello Int. : 0
Bad Dead Int.  : 0            Bad Options    : 0
Bad Versions   : 0

-----
At time t = 3 sec (Mode: Rate)
-----
Tot Rx Packets : 0            Tot Tx Packets : 0
Rx Hellos      : 0            Tx Hellos      : 0
Rx DBDs        : 0            Tx DBDs        : 0
Rx LSRs        : 0            Tx LSRs        : 0
Rx LSUs        : 0            Tx LSUs        : 0
Rx LS Acks     : 0            Tx LS Acks     : 0
Retransmits    : 0            Discards       : 0
Bad Networks   : 0            Bad Virt Links : 0
Bad Areas      : 0            Bad Dest Adrs  : 0
Bad Auth Types : 0            Auth Failures  : 0
Bad Neighbors  : 0            Bad Pkt Types  : 0
Bad Lengths    : 0            Bad Hello Int. : 0
Bad Dead Int.  : 0            Bad Options    : 0
Bad Versions   : 0

-----
At time t = 6 sec (Mode: Rate)
-----
Tot Rx Packets : 0            Tot Tx Packets : 0
Rx Hellos      : 0            Tx Hellos      : 0
Rx DBDs        : 0            Tx DBDs        : 0
Rx LSRs        : 0            Tx LSRs        : 0
Rx LSUs        : 0            Tx LSUs        : 0
Rx LS Acks     : 0            Tx LS Acks     : 0
Retransmits    : 0            Discards       : 0
Bad Networks   : 0            Bad Virt Links : 0
Bad Areas      : 0            Bad Dest Adrs  : 0
Bad Auth Types : 0            Auth Failures  : 0
Bad Neighbors  : 0            Bad Pkt Types  : 0
Bad Lengths    : 0            Bad Hello Int. : 0
Bad Dead Int.  : 0            Bad Options    : 0
Bad Versions   : 0

-----
At time t = 9 sec (Mode: Rate)
```

```

-----
Tot Rx Packets : 0          Tot Tx Packets : 0
Rx Hellos      : 0          Tx Hellos      : 0
Rx DBDs        : 0          Tx DBDs        : 0
Rx LSRs        : 0          Tx LSRs        : 0
Rx LSUs        : 0          Tx LSUs        : 0
Rx LS Acks     : 0          Tx LS Acks     : 0
Retransmits    : 0          Discards       : 0
Bad Networks   : 0          Bad Virt Links : 0
Bad Areas      : 0          Bad Dest Addr  : 0
Bad Auth Types : 0          Auth Failures  : 0
Bad Neighbors  : 0          Bad Pkt Types  : 0
Bad Lengths    : 0          Bad Hello Int. : 0
Bad Dead Int.  : 0          Bad Options    : 0
Bad Versions   : 0
=====
A:ALA-12>monitor>router>ospf#
    
```

## interface

### Syntax

**interface** *interface* [*interface*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>router>rsvp interface)

### Full Context

monitor router rsvp interface

### Description

This command displays statistics for RSVP interfaces at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the RSVP interface(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *interface*

Specifies the IP address of the interface (*ip-address*) or interface name (*ip-int-name*). Up to five interfaces can be specified. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

**Values** *ip-int-name, ip-address*

#### *seconds*

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

## 12.35 interface-id-mapping

### interface-id-mapping

**Syntax**

**interface-id-mapping**

**Context**

[\[Tree\]](#) (show>router>dhcp6>local-dhcp-server interface-id-mapping)

**Full Context**

show router dhcp6 local-dhcp-server interface-id-mapping

**Description**

This command displays information about the DHCPv6 server that uses a unique /64 prefix per interface-ID options combination.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of interface ID mapping information.

### Output Example

```
show router 600 dhcp6 local-dhcp-server "d6" interface-id-mapping
=====
Interface-ID Mappings for DHCPv6 server d6
=====
Mapped Prefix      : 2001:AAAA::/64
Relay Interface ID : 1/1/10
LDRA Interface ID  : (Not Specified)
Active Leases      : 2001:AAAA::1 (stable)
=====
1 prefix found
=====
```

[Table 215: Interface ID Mapping Field Descriptions](#) describes interface ID mapping field descriptions.

*Table 215: Interface ID Mapping Field Descriptions*

Field	Description
Mapped Prefix	The mapped prefix
Relay Interface ID	The value of the Interface-ID Option assigned by the DHCPv6 Relay Agent
LDRA Interface ID	The value of the Interface-ID Option assigned by the Lightweight DHCPv6 Relay Agent
Active Leases	The number of active leases
No. of prefixes found	The total number of prefixes found.

## 12.36 interface-statistics

### interface-statistics

#### Syntax

**interface-statistics service *service-id* all**

**interface-statistics service *service-id* group-interface *grp-if***

**interface-statistics service *service-id* subscriber-interface *sub-if***

#### Context

[\[Tree\]](#) (clear>subscr-mgmt interface-statistics)

#### Full Context

clear subscriber-mgmt interface-statistics

## Description

This command clears subscriber interface statistics.

## Parameters

### *service-id*

Specifies the service ID of the service

**Values** 1 to 214748364  
svc-name: up to 64 characters

### *grp-id*

Specifies the group interface name, up to 32 characters

### *sub-id*

Specifies the subscriber interface, up to 32 characters

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## interface-statistics

## Syntax

**interface-statistics service *service-id* all**

**interface-statistics service *service-id* group-interface *grp-if***

**interface-statistics service *service-id* subscriber-interface *sub-if***

## Context

[\[Tree\]](#) (show>subscr-mgmt interface-statistics)

## Full Context

show subscriber-mgmt interface-statistics

## Description

This command displays subscriber interface statistics.

## Parameters

### *service-id*

Specifies the service ID of the service.

**Values** 1 to 2148278386  
svc-name: up to 64 characters

### *grp-id*

Specifies the group interface name, up to 32 characters



**sub-id**

Specifies the subscriber interface, up to 32 characters

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of service interface statistics information.

**Output Example**

```
*B:Dut-C# show subscriber-mgmt interface-statistics service 10 all
=====
Subscriber statistics for svc 10, itf si-1
=====
-----
Ingress          Egress
-----
IP packets       15           15
Bytes in IP packets 1990        1990
Last cleared     06/28/2021 21:19:40
=====
Subscriber statistics for svc 10, itf gi-1-6
=====
-----
Ingress          Egress
-----
IP packets       5            5
Bytes in IP packets 670          670
Last cleared     06/28/2021 21:19:40
=====
Subscriber statistics for svc 10, itf gi-1-11
=====
-----
Ingress          Egress
-----
IP packets       10           10
Bytes in IP packets 1320         1320
Last cleared     06/28/2021 21:19:40
=====
Number of active subscriber hosts    3
=====
*B:Dut-C#

*B:Dut-C# show subscriber-mgmt interface-statistics service 10 subscriber-interface "si-1"
=====
Subscriber statistics for svc 10, itf si-1
=====
-----
Ingress          Egress
-----
IP packets       15           15
Bytes in IP packets 1990        1990
Last cleared     06/28/2021 21:19:40
=====
Number of active subscriber hosts    3
=====
*B:Dut-C#
```

```
*B:Dut-C# show subscriber-mgmt interface-statistics service 10 group-interface "gi-1-6"
=====
Subscriber statistics for svc 10, itf gi-1-6
=====
-----
Ingress                Egress
-----
IP packets              5                5
Bytes in IP packets    670              670
Last cleared           06/28/2021 21:19:40
=====

Number of active subscriber hosts    1
=====
*B:Dut-C#

*B:Dut-C# show subscriber-mgmt interface-statistics service 10 group-interface "gi-1-
"gi-1-11" "gi-1-6"
*B:Dut-C# show subscriber-mgmt interface-statistics service 10 group-interface "gi-1-11"
=====
Subscriber statistics for svc 10, itf gi-1-11
=====
-----
Ingress                Egress
-----
IP packets              10               10
Bytes in IP packets    1320             1320
Last cleared           06/28/2021 21:19:40
=====

Number of active subscriber hosts    2
=====
*B:Dut-C#
```

## 12.37 iom

### iom

#### Syntax

**iom** [*slot-number*]

#### Context

[\[Tree\]](#) (tools>dump>filter>resources iom)

#### Full Context

tools dump filter resources iom

#### Description

This command shows information about filter resource utilization on all IOMs or a specified IOM. Resource utilization per filter type is available, as well as filters using most resources on a given line card.

## Parameters

### *slot-number*

Specifies that only the filter resource utilization associated with the IOM card in this slot will be displayed.

**Values** 1 to 10

## Platforms

All

## Output

The following output is an example of filter resource utilization information for all IOMs.

### Output Example

```
*A:Dut-C>tools>dump>filter>resources># iom

=====
Number of ACL filter entries used / available on IOMs
=====
Slot                Used                Available
-----
1                    11                  65524
2                     5                   65530
3                     5                   65530
=====

=====
Number of ACL filters and filter entries used / available on FlexPaths
=====
Slot FlexPath   Dir   Filters  Filters  MAC/IP  MAC/IP  IPv6  IPv6
      used     avail  entries  entries  used   avail  used  entries
      used     avail  entries  entries  used   avail  used  entries
-----
1     1          Ingr   2      2045    10     65526   2     28670
          Egr   2      2045    5       32763   2     16382
2     1          Ingr   4      2043    7       65529   2     28670
          Egr   0      2047    2       32766   2     16382
3     1          Ingr   0      2047    7       65529   2     28670
          Egr   0      2047    2       32766   2     16382
=====

=====
Filters utilizing most resources (ordered by TCAM entries per FlexPath)
Only filters present on any IOM are displayed
=====
Type Id                Entries    Subentries  TCAM entries
                    (per FlexPath)
-----
No Mac filters found
-----
Ip    100                5          5            5
Ip    5:23                2          2            2
Ip    6:24                2          2            2
Ip    3                  1          1            1
Ip    4                  1          1            1
-----
Ipv6 fSpec-0           0          0            0
Ipv6 fSpec-2345       0          0            0
```

```
No more Ipv6 filters
=====
```

## 12.38 ip

ip

### Syntax

```
ip [filter-type filter-type]
ip embedded [inactive]
ip ip-filter-id embedded [inactive]
ip ip-filter-id [detail]
ip ip-filter-id associations
ip ip-filter-id type entry-type
ip ip-filter-id counters [type entry-type] [detail]
ip ip-filter-id entry entry-id [counters] [detail]
ip ip-filter-id [entry entry-id] effective-action [{ingress | egress}]
ip ip-filter-id [entry entry-id] effective-action router [{ingress | egress}]
ip ip-filter-id [entry entry-id] effective-action service service-id [{ ingress | egress}]
```

### Context

[\[Tree\]](#) (show>filter ip)

### Full Context

```
show filter ip
```

### Description

This command displays IPv4 filter information.

When **effective-action** is specified, this command displays what effectively happens to a packet that matches the criteria associated with the IPv4 filter policy.

### Parameters

#### **filter-type**

Specifies the type of filter to display.

**Values** config, flowspec, host-common, openflow

#### **inactive**

Displays all, or optionally inactive embeddings. If *ip-filter-id* is specified, displays embeddings for the IP filter ID.

### ***ip-filter-id***

Specifies the IPv4 filter policy for which to display information. Values can be expressed in different formats; the following shows decimal integer format.

**Values** 1 to 65535

### **detail**

Displays detailed information.

### **associations**

Appends, to the detailed filter policy output, information about where the specified filter policy is applied.

### ***entry-type***

Specifies the type of filter entry to display.

**Values** fixed, radius-insert, credit-control-insert, flow-spec, embedded, radius-shared, pcc-rule

### **counters**

Displays counter information for the specified filter ID. Egress counters count the packets without Layer 2 encapsulation. Ingress counters count the packets with Layer 2 encapsulation.

### ***entry-id***

Specifies the filter policy entry (of the specified filter policy) for which to display information.

**Values** 1 to 2097151

### **effective-action**

Displays the action that the system will effectively apply to the packet.

### **ingress**

Filters the output and only displays the information for filter policies applied on ingress.

### **egress**

Filters the output and only displays the information for filter policies applied on egress.

### **router**

Filters the output and only displays the information for that specific service ("Base" instance).

### ***service-id***

Filters the output and only displays the information for the specified service. The specified value must correspond to an existing service in which the filter has been applied.

## **Platforms**

All

## **Output**

**Show Filter (no policy specified)** — The following is an output example of IPv4 filter information when no policy is specified. [Table 216: Show IP Filter Output Fields - no policy specified](#) describes the command output fields.

### Output Example

```

A:ALA-49# show filter ip
=====
Configured IP Filters                                     Total:    2
=====
Filter-Id  Scope      Applied Description
-----
5          Template  Yes
6          Template  Yes
=====

Host Common IP Filters                                 Total:    2
=====
Filter-Id          Description
-----
5:P4                Auto-created PCC-Rule Ingress Filter
6:P5                Auto-created PCC-Rule Egress Filter
=====
Num IP filters: 4
=====
    
```

Table 216: Show IP Filter Output Fields - no policy specified

Label	Description
Filter Id	The IP filter ID
Scope	Template — the filter policy is of type template
	Exclusive—the filter policy is of type exclusive
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Description	The IP filter policy description

**Show Filter (no filter-id specified, embedded keyword specified)** — The following output is an example of IPv4 filter information when no filter ID is specified but the embedded keyword is specified. [Table 217: Filter IP Output Fields \(No Filter ID Specified, Embedded Keyword Specified\)](#) describes the command output fields.

### Output Example

```

*A:Dut-C>config>filter# show filter ip embedded
=====
IP Filter embedding
=====
In    From    Priority    Inserted    Status
-----
10    2        50         1/1        OK
      1        100        1/2        OK- 1 entry overwritten
20    2        100        0/5        Failed – out of resources
=====
    
```

Table 217: Filter IP Output Fields (No Filter ID Specified, Embedded Keyword Specified)

Label	Description
In	Shows embedding filter index
From	Shows embedded filters included
Priority	Shows priority of embedded filter
Inserted	Shows embedded/total number of entries from embedded filter. Status: <b>OK</b> — embedding operation successful, if any entries are overwritten this will also be indicated <b>Failed</b> — embedding failed, the reason is displayed (out of resources)

**Show Filter (with filter-id specified)** — The following output is an example of IPv4 filter information with the filter ID specified. [Table 218: Show IP Filter Policy Output Fields](#) describes the command output fields.

**Output Example**

```
*A:Dut-B>config>filter>ip-filter# show filter ip 10
=====
IP Filter
=====
Filter Id       : 10
Scope          : Embedded
Type           : Normal
Entries        : 4
Description    : (Not Specified)
Filter Name     : 10
```

Table 218: Show IP Filter Policy Output Fields

Label	Description
Filter Id	The IPv4 filter policy ID
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Scope	Template — the filter policy is of type template
	Exclusive — the filter policy is of type exclusive
Type	Normal — the filter policy is of type normal
	src-mac — the filter policy is of type src-mac
	Packet-length — the filter policy is of type packet-length

Label	Description
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
System filter	Indicates if the filter has been chained to a system filter
Radius Ins Pt	Indicates the RADIUS insertion point, if any
CrCtl. Ins Pt	Indicates the Credit Control insertion point, if any
RadSh. Ins Pt	Indicates the RADIUS shared insertion point, if any
PccRI. Ins Pt	Indicates the PCC rule insertion point, if any
Entries	The number of entries configured in this filter ID
Description	The IPv4 filter policy entry description string
Filter Match Criteria	IP — Indicates the filter is an IPv4 filter policy
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
Description	The IPv4 filter policy entry description string
Log Id	The filter log ID
Src. IP	The source IPv4 address and prefix length match criterion; "0.0.0.0/0" indicates no criterion specified for the filter entry
Src. Port	The source TCP, UDP, or SCTP port number, port range, or port match list
Dest. IP	The destination IPv4 address and prefix length match criterion; "0.0.0.0/0" indicates no criterion specified for the filter entry
Dest. Port	The destination TCP, UDP, or SCTP port number, port range, or port match list
Protocol	The protocol for the match criteria; undefined indicates no protocol specified
Dscp	The DiffServ Code Point (DSCP) name
ICMP Type	The ICMP type match criterion; undefined indicates no ICMP type specified
ICMP Code	The ICMP code field in the ICMP header of an IPv4 packet



Label	Description
Fragment	False — Indicates if the filter is configured to match on all non-fragmented packets
	True — Indicates if the filter is configured to match on all fragmented packets
	First-Only — Indicates if the filter is configured to match the first fragment of a fragmented packet
	Non-First-Only — Indicates if the filter is configured to match a fragment of a fragmented packet, but not the first fragment
	Off — fragments are not a matching criteria. All fragments and non-fragments implicitly match
Src Route Opt	Indicates if the source route option has been set
Sampling	Off — specifies that traffic sampling is disabled
	On—specifies that traffic matching the associated IPv4 filter entry is sampled
Int. Sampling	Off — interface traffic sampling is disabled
	On — interface traffic sampling is enabled
IP-Option	Specifies matching packets with a specific IPv4 option or a range of IPv4 options in the IPv4 header for IPv4 filter match criteria
Multiple Option	Off — the option fields are not checked
	On — packets containing one or more option fields in the IPv4 header will be used as IPv4 filter match criteria
Tcp-flag	<p>Specifies the list of TCP flags selected:</p> <ul style="list-style-type: none"> <li>• match true is represented with the TCP flag value</li> <li>• match false is represented with an exclamation mark before the flag value</li> </ul> <p>TCP flags not selected as match criteria are not displayed</p> <p>Example:</p> <p>Matching "tcp-ack true" and "tcp-rst false" is represented in the show command as Tcp-flag : Ack !Rst</p>
Option-present	Off — specifies not to search for packets that contain the option field or have an option field of zero
	On — matches packets that contain the option field or have an option field of zero be used as IPv4 filter match criteria
Egress PBR	Indicates if the <b>egress-pbr</b> flag is set for this entry

Label	Description
Primary Action	Indicates the configured action, if any; indented sub-labels in the show output provide configured parameters for this action
Secondary Action	Indicates the configured secondary action, if any; indented sub-labels in the show output provide configured parameters for this action
PBR Target Status	The status of the target of the primary or secondary action based on simple checks
Extended Action	Indicates the configured extended action, if any
PBR Down Action	Indicates the action to take when the target is down; packets that match the entry criteria will be subject to the PBR Down Action in case the target of the main action is down
Downloaded Action	The action downloaded by CPM to IOM
Dest. Stickiness	Indicates whether stickiness is configured
Hold Remain	The stickiness timer
Ing. Matches	The number of ingress filter matches/hits for the filter entry
Egr. Matches	The number of egress filter matches/hits for the filter entry

**Show Filter Associations** — The following output is an example of IPv4 filter information when the **associations** keyword is specified. [Table 219: Filter IP Associations Output Fields](#) describes the command output fields.

**Output Example**

```
A:ALA-49# show filter ip 1 associations
=====
IP Filter
=====
Filter Id       : 4                               Applied       : Yes
Scope          : Template                       Def. Action   : Drop
System filter  : Unchained
Radius Ins Pt  : n/a
CrCtl. Ins Pt  : n/a
RadSh. Ins Pt  : n/a
PccRl. Ins Pt  : n/a
Entries        : 1
Description    : (Not Specified)
-----
Filter Association : IP
-----
Service Id     : 2                               Type          : VPLS
- SAP         1/2/2 (Ingress)
-----
Filter associated with IOM: 1
=====
```

Table 219: Filter IP Associations Output Fields

Label	Description
Filter Id	The IPv4 filter policy ID
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Scope	Template — the filter policy is of type Template
	Exclusive — the filter policy is of type Exclusive
Type	Normal — the filter policy is of type normal
	src-mac — the filter policy is of type src-mac
	Packet-length — the filter policy is of type packet-length
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop—the default action for the filter ID for packets that do not match the filter entries is to drop
System filter	Indicates if the filter has been chained to a system filter
Radius Ins Pt	Indicates the RADIUS insertion point, if any
CrCtl. Ins Pt	Indicates the Credit Control insertion point, if any
RadSh. Ins Pt	Indicates the RADIUS shared insertion point, if any
PccRI. Ins Pt	Indicates the PCC rule insertion point, if any
Entries	The number of entries configured in this filter ID
Description	The IPv4 filter policy description
Filter Association	Indicates the filter is an IPv4 filter policy
Service Id	The service ID on which the filter policy ID is applied; the output also provides a list of service points where the filter has been applied
Type	The type of service of the service ID
(Ingress)	The filter policy ID is applied as an ingress filter policy on the interface
(Egress)	The filter policy ID is applied as an egress filter policy on the interface

**Show Filter Counters** — The following output is an example of IPv4 filter information when the **counters** keyword is specified. [Table 220: Filter IP Counters Output Field Descriptions](#) describes the command output fields.

Egress counters count the packets without Layer 2 encapsulation. Ingress counters count the packets with Layer 2 encapsulation.

**Output Example**

```
*A:ALA-48# show filter ip 100 counters
=====
IP Filter
=====
Filter Id       : 4                               Applied       : Yes
Scope          : Template                       Def. Action   : Drop
System filter   : Unchained
Radius Ins Pt  : n/a
CrCtl. Ins Pt  : n/a
RadSh. Ins Pt  : n/a
PccRl. Ins Pt  : n/a
Entries        : 1
Description    : (Not Specified)
-----
Filter Match Criteria : IP
-----
Entry          : 4001
Ing. Matches   : 9788619 pkts (978861900 bytes)
Egr. Matches   : 9788619 pkts (978861900 bytes)
=====
```

Table 220: Filter IP Counters Output Field Descriptions

Label	Description
Filter Id	The IPv4 filter policy ID
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Scope	Template — the filter policy is of type Template
	Exclusive — the filter policy is of type Exclusive
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
System filter	Indicates if the filter has been chained to a system filter
Radius Ins Pt	Indicates the RADIUS insertion point, if any
CrCtl. Ins Pt	Indicates the Credit Control insertion point, if any
RadSh. Ins Pt	Indicates the RADIUS shared insertion point, if any

Label	Description
PccRI. Ins Pt	Indicates the PCC rule insertion point, if any
Entries	The number of entries configured in this filter ID
Description	The IPv4 filter policy description
Filter Match Criteria	IP — Indicates the filter is an IPv4 filter policy
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
Ing. Matches	The number of ingress filter matches/hits for the filter entry
Egr. Matches	The number of egress filter matches/hits for the filter entry

**Show Filter IP Output (with effective-action specified)** — The following output is an example of IPv4 filter information when the **effective-action** keyword is specified. [Table 221: Show Filter IP effective-action Output Field Descriptions](#) describes the command output fields.

If the main action (either primary or secondary) cannot be performed, a reason will be given. This will be displayed on the same line as the Effective Action. The reason codes as currently defined are:

- action not supported in L2 service
- action not supported in L3 service
- action not supported on egress
- destination not reachable
- egress-pbr is off
- egress-pbr is on
- entry-default
- filter-default-action
- not POS unnumbered interface
- pbr-down-action-override
- target does not exist

### Output Example

```
show filter ip 1 effective-action
=====
IP Filter
=====
Filter Id       : 1                               Applied       : Yes
Scope          : Template                       Def. Action   : Drop
Entries        : 1
Description     : (Not Specified)
-----
Entry          : 1
-----
Stickiness     : No
PBR Dwn Act Override: None
PBR Down Action : Drop (entry-default)
```

```

Configuration
Primary Action      : Forward (SAP)
  Next Hop          : 1/1/2
  Service Id        : 10
Secondary Action    : None

Status
Target status based on extended checks
  Primary Action    : Down
  Secondary Action  : None
Downloaded Action   : Primary
Stickiness Timer    : Not Running

Effective Action based on application context
Service Id          : 10                               Type          : VPLS
  Ingress
  Effective Action: Drop (entry-default)
=====
    
```

Table 221: Show Filter IP effective-action Output Field Descriptions

Label	Description
Filter Id	The IPv4 filter policy ID
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Scope	Template — the filter policy is of type Template
	Exclusive — the filter policy is of type Exclusive
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Entries	The number of entries configured in this filter ID
Description	The IPv4 filter policy description
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
Stickiness	No — stickiness is not configured
	Yes — stickiness is configured
PBR Dwn Act Override	Indicates whether or not the action to take when the PBR target is down has been overridden

Label	Description
PBR Down Action	Indicates the action to take when the target is down; packets that match the entry criteria will be subject to the PBR Down Action in case the target of the main action is down
Configuration	Section of the output providing information on the configured parameters
Primary Action	The configured action, if any; indented sub-labels in the show output provide configured parameters for this action
Secondary Action	The configured secondary action, if any; indented sub-labels in the show output provide configured parameters for this action
Status/Target status based on extended checks	Section of the output providing information on the operational status of certain parameters
Primary Action	The status of the target of the primary action, if any configured, based on extended checks
Secondary Action	The status of the target of the secondary action, if any configured, based on extended checks
Downloaded Action	The action downloaded by the CPM to the IOM
Stickiness Timer	The status of the stickiness timer, if any
Effective Action based on application context	Section of the output providing the effective action, in the context of services, that a packet matching the criteria will be subject to
Service Id	The service ID on which the filter policy ID is applied; the output also provides a list of service points where the filter has been applied
Type	The service type in which the service has been applied
Ingress/Egress	The direction in which the service has been applied
Effective Action	The effective action that the packet will be subject to
Extended Action	Indicates the configured extended action, if any

ip

### Syntax

**ip** *ip-filter-id* [**entry** *entry-id*] [{**ingress** | **egress**}]

### Context

**[Tree]** (clear>filter ip)

## Full Context

```
clear filter ip
```

## Description

Clears the counters associated with the entries of the specified IPv4 filter policy.

By default, the counters associated with each entry of the specified filter policy are all cleared. The scope of which counters are cleared can be narrowed using the command line parameters.

## Default

Clears all counters associated with each entry of the specified IPv4 filter policy.

## Parameters

### *ip-filter-id*

The IPv4 filter policy ID for which to clear the entry counters. Values can be expressed in different formats. The following shows decimal integer format.

**Values** 1 to 65535

### *entry-id*

Specifies that only the counters associated with the specified filter policy entry are cleared.

**Values** 1 to 2097151

### *ingress*

Specifies to only clear the ingress counters.

### *egress*

Specifies to only clear the egress counters.

## Platforms

All

```
ip
```

## Syntax

```
ip ip-filter-id
```

## Context

[\[Tree\]](#) (tools>dump>filter>resources ip)

## Full Context

```
tools dump filter resources ip
```

## Description

This command displays information about the specified IP filter including resource utilization on CPM and IOM, the IOMs on which the filter is used, and the entries using the most resources.



## Parameters

### *ip-filter-id*

Specifies that only the filter resource utilization associated with this IP filter will be displayed.

**Values** 1 to 65535

## Platforms

All

## Output

The following output is an example of IP filter resource utilization information.

### Output Example

```
*A:Dut-C>tools>dump>filter>resources># ip 100

=====
Resource utilization details for Ip filter 100
=====
CPM entries used           : 5
CPM subentries used       : 5
TCAM entries used (per FlexPath) : 5
Associated with IOMs      : 1,2,3,4,5,6,7,8,9,10

-----
Largest 5 entries
-----
Entry ID                    Active          TCAM entries
                          (per FlexPath)
-----
3                            Yes             1
4                            Yes             1
5                            Yes             1
6                            Yes             1
100                          Yes             1
-----
=====
```

## ip

## Syntax

**ip entry** *entry-id* [*interval seconds*] [*repeat repeat*] [*absolute* | *rate*]

## Context

[\[Tree\]](#) (monitor>cpm-filter ip)

## Full Context

monitor cpm-filter ip

## Description

This command displays monitor command statistics for IP filter entries.

## Parameters

### *entry-id*

Displays information on the specified filter entry ID for the specified filter ID only.

**Values** 1 to 2048

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

ip

## Syntax

**ip** *ip-filter-id* **entry** *entry-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

## Context

[\[Tree\]](#) (monitor>filter ip)

## Full Context

monitor filter ip

## Description

This command enables IP filter monitoring. The statistical information for the specified IP filter entry displays at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified IP filter. The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *ip-filter-id*

Displays detailed information for the specified filter ID and its filter entries.

**Values** [1 to 65535] | fSpec-[0 to 2147483647] | [1 to 65535 to 8192] | [1 to 65535:P1 to 4096] | \_tmnx\_tms\_egr- *mda-id*-F | \_tmnx\_tms-ing-*mda-id*-F | \_tmnx\_ofs\_ofs-name | *name*: 64 chars max

### *entry-id*

Displays information on the specified filter entry ID for the specified filter ID only.

**Values** [1 to 65535], fSpec-[0 to 2147483647]-[1 to 65353]

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## Output

The following output is an example of filter IP information.

### Output Example

```
A:ALA-1>monitor# filter ip 10 entry 1 interval 3 repeat 3 absolute  
=====
```

```
Monitor statistics for IP filter 10 entry 1
=====
At time t = 0 sec (Base Statistics)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 3 sec (Mode: Absolute)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 6 sec (Mode: Absolute)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 9 sec (Mode: Absolute)
-----
Ing. Matches: 0                               Egr. Matches   : 0
=====
A:ALA-1>monitor#

A:ALA-1>monitor# filter ip 10 entry 1 interval 3 repeat 3 rate
=====
Monitor statistics for IP filter 10 entry 1
=====
At time t = 0 sec (Base Statistics)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 3 sec (Mode: Rate)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 6 sec (Mode: Rate)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 9 sec (Mode: Rate)
-----
Ing. Matches: 0                               Egr. Matches   : 0
=====
A:ALA-1>monitor#
```

## ip

### Syntax

**ip entry** *entry-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>management-access-filter ip)

### Full Context

monitor management-access-filter ip

### Description

This command monitors statistics for the MAF IP filter entry.

## Parameters

### *entry-id*

Specifies an existing IP MAF entry ID.

**Values** 1 to 9999

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

ip

## Syntax

ip

## Context

[\[Tree\]](#) (show>system ip)

## Full Context

show system ip

## Description

This command displays the system IP configuration.

## Platforms

All

ip

### Syntax

ip

### Context

[\[Tree\]](#) (clear ip)

### Full Context

clear ip

### Description

Commands in this context clear IP tunnel information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

ip

### Syntax

ip

### Context

[\[Tree\]](#) (show ip)

### Full Context

show ip

### Description

Commands in this context display IP related information.

### Platforms

All

## 12.39 ip-exception

### ip-exception

#### Syntax

**ip-exception**

**ip-exception** *ip-filter-id*

**ip-exception** *ip-filter-id* [{**associations** | **counters**}]

**ip-exception** *ip-filter-id* **entry** *entry-id* [**counters**]

#### Context

[\[Tree\]](#) (show>filter ip-exception)

#### Full Context

show filter ip-exception

#### Description

This command shows IPv4 exception information.

#### Parameters

##### *filter-id*

Specifies the IPv4 exception filter.

**Values** 1 to 65535

##### **associations**

Displays associations applicable to the specified IPv4 exception.

##### **counters**

Displays counters for the specified IPv4 exception.

##### **entry** *entry-id*

Specifies an integer that identifies the entry.

**Values** 1 to 2097151

#### Platforms

VSR

#### Output

The following output is an example of IPv4 exception filter information, and [Table 222: IPv4 Exception Output Fields](#) describes the fields.

### Output Example

```
*A:Dut-C>config>filter>ip-except>entry$ show filter ip-exception 1
=====
IP-Exception Filter
=====
Filter Id          : 1                      Applied          : Yes
Scope             : Template
Entries           : 2
Description        : Default description for ip-exception 1
Filter Name        : ip-exception-1
-----
Filter Match Criteria : IP
-----
Entry              : 1
Description         : Default description for Ip Exception Policy id # 1 entry
                    1
Src. IP            : 0.0.0.0/0
Src. Port          : n/a
Dest. IP           : 0.0.0.0/0
Dest. Port         : n/a
Protocol           : 1
ICMP Type          : Undefined              ICMP Code        : Undefined
Ing. Matches       : 0 pkts
Egr. Matches       : 10 pkts (1060 bytes)
Entry              : 2
Description         : (Not Specified)
Src. IP            : 192.168.1.0/24
Src. Port          : n/a
Dest. IP           : 10.10.1.0/24
Dest. Port         : n/a
Protocol           : Undefined
ICMP Type          : Undefined              ICMP Code        : Undefined
Ing. Matches       : 0 pkts
Egr. Matches       : 0 pkts
=====
*A:Dut-C>config>filter>ip-except>entry$
```

Table 222: IPv4 Exception Output Fields

Label	Description
Filter-Id	The filter ID.
Scope	Template — The filter policy is of type Template. Exclusive — The filter policy is of type Exclusive.
Applied	No — The IPv6 exception filter has not been applied. Yes — The IPv6 exception filter is applied.
Entries	The number of entries.
Description	The description of the specified filter, if specified.
Filter Name	The filter name.
Filter Match Criteria	IP — Indicates the filter is an IPv4 filter policy.



Label	Description
Entry	The number of active or inactive entries.
Description	The IPv4 filter policy entry description string.
Src. IP	The source IP address of the logged packet.
Src. Port	The source port of the logged packet.
Dst. IP	The destination IP address of the logged packet.
Dst. Port	The destination port of the logged packet.
Protocol	The protocol for the match criteria; undefined indicates no protocol specified.
ICMP Type	The ICMP type match criterion. Undefined indicates no ICMP type specified.
Ing. Matches	The number of packets matched on ingress.
Egr. Matches	The number of packets matched on egress.

## ip-exception

### Syntax

**ip-exception** *filter-id* [**entry** *entry-id*] [{**ingress** | **egress**}]

### Context

[\[Tree\]](#) (clear>filter ip-exception)

### Full Context

clear filter ip-exception

### Description

This command clears the counters associated with the entries of the specified IP exception filter policy.

### Parameters

#### *filter-id*

Specifies the filter policy ID for which to clear the entry counters.

**Values** 1 to 65535

#### *entry-id*

Specifies that only the counters associated with the specified filter policy entry are cleared.

**Values** 1 to 2097151

**ingress**

Specifies to only clear the ingress counters.

**egress**

Specifies to only clear the egress counters.

**Platforms**

VSR

## 12.40 ip-filter

### ip-filter

**Syntax**

**ip-filter** [**entry** *entry-id*]

**Context**

[\[Tree\]](#) (show>system>security>cpm-filter ip-filter)

**Full Context**

show system security cpm-filter ip-filter

**Description**

This command displays CPM IP filters.

**Parameters**

***entry-id***

Identifies a CPM filter entry as configured on this system.

**Values** 1 to 131072

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output is an example of IP filter entry information.

[Table 223: Show CPM IP Filter Output Fields](#) describes CPM IP filter output fields.

**Output Example**

```
A:ALA-35# show system security cpm-filter ip-filter
=====
CPM IP Filters
=====
```

```

Entry-Id  Dropped  Forwarded  Description
-----
101        25880    0          CPM-Filter 10.4.101.2 #101
102        25880    0          CPM-Filter 10.4.102.2 #102
103        25880    0          CPM-Filter 10.4.103.2 #103
104        25882    0          CPM-Filter 10.4.104.2 #104
105        25926    0          CPM-Filter 10.4.105.2 #105
106        25926    0          CPM-Filter 10.4.106.2 #106
107        25944    0          CPM-Filter 10.4.107.2 #107
108        25950    0          CPM-Filter 10.4.108.2 #108
109        25968    0          CPM-Filter 10.4.109.2 #109
110        25984    0          CPM-Filter 10.4.110.2 #110
111        26000    0          CPM-Filter 10.4.111.2 #111
112        26018    0          CPM-Filter 10.4.112.2 #112
113        26034    0          CPM-Filter 10.4.113.2 #113
114        26050    0          CPM-Filter 10.4.114.2 #114
115        26066    0          CPM-Filter 10.4.115.2 #115
116        26084    0          CPM-Filter 10.4.116.2 #116
=====
A:ALA-35#

A:ALA-35# show system security cpm-filter ip-filter entry 101
=====
CPM IP Filter Entry
=====
Entry Id      : 101
Description   : CPM-Filter 10.4.101.2 #101
-----
Filter Entry Match Criteria :
-----
Log Id        : n/a
Src. IP       : 10.4.101.2/32      Src. Port     : 0
Dest. IP      : 10.4.101.1/32     Dest. Port    : 0
Protocol      : 6                  Dscp          : ef
ICMP Type     : Undefined        ICMP Code     : Undefined
Fragment      : True             Option-present : Off
IP-Option     : 130/255          Multiple Option : True
TCP-syn       : Off              TCP-ack       : True
Match action  : Drop
=====
A:ALA-35#
    
```

Table 223: Show CPM IP Filter Output Fields

Label	Description
Entry-Id	Displays information about the specified management access filter entry
Dropped	Displays the number of dropped events.
Forwarded	Displays the number of forwarded events.
Description	Displays the CPM filter description.
Log ID	Displays the log ID where matched packets will be logged.
Src IP	Displays the source IP address(/netmask or prefix-list)
Dest. IP	Displays the destination IP address(/netmask).

Label	Description
Src Port	Displays the source port number (range).
Dest. Port	Displays the destination port number (range).
Protocol	Displays the Protocol field in the IP header.
Dscp	Displays the DSCP field in the IP header.
Fragment	Displays the 3-bit fragment flags or 13-bit fragment offset field.
ICMP Type	Displays the ICMP type field in the ICMP header.
ICMP Code	Displays the ICMP code field in the ICMP header.
TCP-syn	Displays the SYN flag in the TCP header.
TCP-ack	Displays the ACK flag in the TCP header
Match action	When the criteria matches, displays drop or forward packet.
Next Hop	In case match action is forward, indicates destination of the matched packet.
Dropped pkts	Indicates number of matched dropped packets
Forwarded pkts	Indicates number of matched forwarded packets.

## ip-filter

### Syntax

**ip-filter** [*entry entry-id*]

### Context

[\[Tree\]](#) (show>system>security>mgmt-access-filter ip-filter)

### Full Context

show system security management-access-filter ip-filter

### Description

This command displays management-access IP filters.

### Parameters

***entry-id***

Displays information for the specified entry.

**Values** 1 to 9999

## Platforms

All

## Output

The following output is an example of MAF IP filter information and [Table 224: Show Management Access Filter Output Fields](#) describes the management access filter output fields.

### Output Example

```
*A:Dut-F# show system security management-access-filter ip-filter
=====
IPv4 Management Access Filter
=====
filter type:      : ip
Def. Action      : permit
Admin Status     : enabled (no shutdown)
-----
Entry           : 1
Description     : (Not Specified)
Src IP          : ip-prefix-list "MAF-MATCH-ALLOW"
Src interface    : undefined
Dest port       : undefined
Protocol        : undefined
Router          : undefined
Action          : none
Log             : disabled
Matches        : 0
=====
*A:Dut-F#
```

Table 224: Show Management Access Filter Output Fields

Label	Description
Def. action	Permit — Specifies that packets not matching the configured selection criteria in any of the filter entries are permitted.  Deny — Specifies that packets not matching the configured selection criteria in any of the filter entries are denied and that a ICMP host unreachable message will be issued.  Deny-host-unreachable — Specifies that packets not matching the configured selection criteria in the filter entries are denied.
Entry	The entry ID in a policy or filter table.
Description	A text string describing the filter.
Src IP	The source IP address or prefix list used for management access filter match criteria.
Src interface	The interface name for the next hop to which the packet should be forwarded if it hits this filter entry.
Dest port	The destination port.

Label	Description
Matches	The number of times a management packet has matched this filter entry.
Protocol	The IP protocol to match.
Action	The action to take for packets that match this filter entry.

## ip-filter

### Syntax

**ip-filter** [*entry entry-id*]

### Context

[\[Tree\]](#) (clear>cpm-filter ip-filter)

### Full Context

clear cpm-filter ip-filter

### Description

This command clears IP filter statistics.

### Parameters

*entry-id*

Specifies a particular CPM IP filter entry.

**Values** 1 to 2048

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## ip-filter

### Syntax

**ip-filter** *ip-filter-id*

### Context

[\[Tree\]](#) (tools>perform>filter ip-filter)

### Full Context

tools perform filter ip-filter

## Description

Commands in this context perform IP filter operations.

## Parameters

### *ip-filter-id*

Specifies a particular IP filter ID or filter name.

**Values** *filter-id* | *filter-name*

### *filter-id*

Specifies the IP filter ID.

**Values** 1 to 65535

### *filter-name*

Specifies name of the IP filter, up to 64 characters.

## Platforms

All

## 12.41 ip-identification-assist

### ip-identification-assist

## Syntax

**ip-identification-assist** [**isa** *mda-id/esa-vm-id*]

## Context

[\[Tree\]](#) (show>app-assure>group ip-identification-assist)

## Full Context

show application-assurance group ip-identification-assist

## Description

This command displays the status and statistics for the IP identification assist feature.

## Parameters

### **isa** *mda-id*

Specifies the slot and MDA of the ISA in the format *slot/mda*.

**Values**

<i>slot/mda</i>	
<i>slot</i>	1 to 10, depending on chassis model

*mda* 1 to 2, depending on chassis model

**isa** *esa-vm-id*

Specifies the ESA and ESA VM in the format *esa-esa-id/vm-id*.

Values	
	<i>esa-esa-id/vm-id</i>
	<i>esa-id</i> 1 to 16
	<i>vm-id</i> 1 to 4

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

Use the following command to display IP identification assist information for a group.

```
show application-assurance group 1 ip-identification-assist isa 1/1
```

**Output Example**

```
=====
Application Assurance Group 1 IP Identification Assist
=====
ip-identification-assist          : Up
passive-dns-monitor              : Enabled
-----
IP Entry Statistics
-----
Maximum IP entries                : 100000
Free IP entries                  : 99866
Active IP entries                 : 134
  application                    : 126
  parent application             : 6
  conflict (apps/parent)         : 0
  conflict (other)              : 2
-----
Active IP entry match status
-----
IP entry matched                 : 85
IP entry not matched             : 49
-----
Cumulative IP lookup results
-----
total misses                     : 1383
total matches                    : 594
  match - application            : 528
  match - parent application     : 56
  match - app/parent conflict    : 0
  match - other conflict         : 10
=====
```



Use the following command to display IP identification assist information for a partition.

```
show application-assurance group 1:0 ip-identification-assist isa 1/1
```

### Output Example

```
=====
Application Assurance Group 1:0 IP Identification Assist
=====
ip-identification-assist          : Up
passive-dns                       : Enabled
positive-app-id                   : Enabled
-----
Passive DNS Monitoring Statistics
-----
DNS responses                      : 150
  ignored - no reverse flow        : 0
  ignored - untrusted              : 0
  ignored - wrong direction        : 0
DNS responses matched              : 150
  matched - IPv4                   : 150
  matched - IPv6                   : 0
DNS responses unknown              : 0
  unknown - IPv4                   : 0
  unknown - IPv6                   : 0
-----
Positive Application Identification Statistics
-----
Flows with global applications     : 0
  ignored - ip-ident-assist        : 0
  ignored - no expression          : 0
Flows used to populate cache       : 0
  IPv4 added/updated              : 0
  IPv6 added/updated              : 0
=====
```

## ip-identification-assist

### Syntax

**ip-identification-assist**

### Context

**[Tree]** (tools>dump>app-assure>group ip-identification-assist)

### Full Context

tools dump application-assurance group ip-identification-assist

### Description

Commands in this context dump statistics for the IP identification assist feature.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.42 ip-prefix

### ip-prefix

#### Syntax

```
ip-prefix [hunt | detail] [rd rd] [prefix ip-prefix/ip-prefix-length] [community comm-id] [tag tag] [next-hop next-hop] [aspath-regexp reg-exp]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes>evpn ip-prefix)

#### Full Context

```
show router bgp routes evpn ip-prefix
```

#### Description

This command displays BGP-EVPN IPv4 prefix routes.

#### Parameters

##### hunt

Displays entries for the specified route.

##### detail

Displays detailed information.

##### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

##### ip-prefix/ip-prefix-length

Specifies the IPv4 address and mask length.

**Values**

ip-address:	a.b.c.d
mask:	0 to 32

##### comm-id

Specifies the community ID, up to 72 characters.

**Values** *[as-num:comm-val | ext-comm | well-known-comm]*  
where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type*:{ *ip-address:comm-val1* | *as-number1:comm-val2* | *as-number2:comm-val1* }  
where:
  - *as-number1* — 0 to 65535
  - *comm-val1* — 0 to 65535
  - **type** — target, origin
  - *ip-address* — a.b.c.d
  - *comm-val2* — 0 to 4294967295
  - *as-number2* — 0 to 4294967295
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** |

### **tag**

Specifies the IPv4 prefix route tag.

**Values** 0 to 4294967295 | MAX-ET

### **next-hop**

Specifies the IPv4 or IPv6 BGP next-hop address.

**Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

## **Platforms**

All

## 12.43 ip-prefix-list

### ip-prefix-list

#### Syntax

**ip-prefix-list**

**ip-prefix-list** *prefix-list-name* [**association**]

#### Context

**[Tree]** (show>qos>match-list ip-prefix-list)

#### Full Context

show qos match-list ip-prefix-list

#### Description

Displays the list of configured IPv4 QoS prefix lists or the details of a specific IPv4 QoS prefix list together with the SAP and network QoS policies in which it is used and the entry number within that policy.

#### Parameters

##### *prefix-list-name*

Specifies an IPv4 prefix list which contains IPv4 address prefixes to be matched.

**Values** A string of up to 32 characters of printable ASCII characters. If special characters are used, the string must be enclosed within double quotes.

##### **association**

Displays the QoS policy and entry number in which the specified prefix list is used.

#### Platforms

All

#### Output

The following output is an example of ip-prefix-list information

#### Output Example

```
*A:PE# show qos match-list ip-prefix-list
=====
QoS Match IP Prefix List
=====
Prefix List Name          Description          Num Prefixes
-----
ipv4list1                  1
ipv4list2                  1
-----
No. of Prefix-List: 2
```

```
=====
*A:PE#

*A:PE# show qos match-list ip-prefix-list "ipv4list1"

=====
QoS Match IP Prefix List
=====
Prefix Name      : ipv4list1
Description      : (Not Specified)
-----
IP Prefixes
-----
10.0.0.0/8
-----
No. of Prefixes : 1
-----

-----
Association
-----
QoS Policy ID          Criteria Entry
-----
10                    (sap-ingress)    10                (source-ip)
10                    (sap-egress)    10                (source-ip)
-----
=====
*A:PE#
```

## ip-prefix-list

### Syntax

**ip-prefix-list** [*prefix-list-name*]

**ip-prefix-list** *prefix-list-name* **references**

### Context

[\[Tree\]](#) (show>filter>match-list ip-prefix-list)

### Full Context

show filter match-list ip-prefix-list

### Description

This command displays IPv4 prefix information for match criteria in IPv4 ACL and CPM filter policies.

### Parameters

#### ***prefix-list-name***

String of up to 32 characters of printable ASCII characters. If special characters are used, the string must be enclosed within double quotes.

#### **references**

The filter policies, policy entries and source/destination IPv4 match type per entry referring to this match list.

## Platforms

All

## Output

The following output is an example of IPv4 prefix information for match criteria in IPv4 ACL and CPM filter policies, and [Table 225: Output fields: Filter Match IP Prefix Lists](#) describes the output fields.

### Output example

```
show filter match-list ip-prefix-list "p11"
```

```
=====
Filter Match IP Prefix Lists
=====
```

```
ip-prefix-list "p11"
=====
```

```
excluded prefixes:
-----
```

```
10.1.1.1/32
-----
```

```
configured prefixes:
-----
```

```
#10.0.0.0/8
-----
```

```
generated prefixes:
-----
```

```
10.0.0.0/16      10.1.0.0/24      10.1.1.0/32      10.1.1.2/31
10.1.1.4/30      10.1.1.8/29      10.1.1.16/28     10.1.1.32/27
10.1.1.64/26     10.1.1.128/25   10.1.2.0/23      10.1.4.0/22
10.1.8.0/21      10.1.16.0/20    10.1.32.0/19     10.1.64.0/18
10.1.128.0/17   10.2.0.0/15     10.4.0.0/14      10.8.0.0/13
10.16.0.0/12    10.32.0.0/11    10.64.0.0/10     10.128.0.0/9
-----
```

```
NUM used prefixes: 24
```

```
Note: "#" in front of the IP address indicates that the prefix is not used
```

```
References:
-----
```

```
No references
=====
```

Table 225: Output fields: Filter Match IP Prefix Lists

Label	Description
Excluded prefixes	Displays excluded prefix information
Configured prefixes	Displays configured prefix information
Generated prefixes	Displays generated prefix information
NUM used prefixes	Displays the number of used prefixes

Label	Description
References	Displays reference information

## 12.44 ip-tunnel-stats

### ip-tunnel-stats

#### Syntax

**ip-tunnel-stats**

#### Context

[\[Tree\]](#) (show>isa>stats ip-tunnel-stats)

#### Full Context

show isa statistics ip-tunnel-stats

#### Description

Commands in this context display IP tunnel statistical information. This includes statistics for non-IPsec tunnels supported on tunnel ISAs.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.45 ipoe

### ipoe

#### Syntax

**ipoe**

**ipoe session**

#### Context

[\[Tree\]](#) (clear>service>id ipoe)

#### Full Context

clear service id ipoe

## Description

This command clears the IPoE related data for the service.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
ipoe
```

## Syntax

```
ipoe
```

## Context

[\[Tree\]](#) (clear>call-trace ipoe)

## Full Context

```
clear call-trace ipoe
```

## Description

Commands in this context clear the IPoE job.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
ipoe
```

## Syntax

```
ipoe
```

## Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>loc-user-db ipoe)

## Full Context

```
tools perform subscriber-mgmt local-user-db ipoe
```

## Description

This command contains the tools used to control IPoE entries in the local user database.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## ipoe

### Syntax

ipoe

### Context

[\[Tree\]](#) (show>service>id ipoe)

### Full Context

show service id ipoe

### Description

Commands in this context display IPoE information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## ipoe

### Syntax

ipoe

### Context

[\[Tree\]](#) (show>call-trace ipoe)

### Full Context

show call-trace ipoe

### Description

Commands in this context display IP over Ethernet (IPoE) call trace information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 12.46 ipoe-session

### ipoe-session

#### Syntax

**ipoe-session**

#### Context

[\[Tree\]](#) (tools>dump>router ipoe-session)

#### Full Context

tools dump router ipoe-session

#### Description

Commands in this context dump information about IPoE session-related tools in the specified routing instance.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 12.47 ipoe-session-policy

### ipoe-session-policy

#### Syntax

**ipoe-session-policy** *ipoe-session-policy-name* [**association**]

**ipoe-session-policy**

#### Context

[\[Tree\]](#) (show>subscr-mgmt ipoe-session-policy)

#### Full Context

show subscriber-mgmt ipoe-session-policy

#### Description

This command displays IPoE session policy information.

## Parameters

### *ipoe-session-policy-name*

Specifies the IPoE session policy name up to 32 characters.

### **association**

Displays the interface and captures SAPs that reference the IPoE session policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of IPoE session policy information.

### Output Example

```
show subscriber-mgmt ipoe-session-policy "ipoe-policy-1"
=====
IPoE Session Policy "ipoe-policy-1"
=====
Description          : IPoE policy
Last Mgmt Change     : 02/28/2015 11:51:25
Session Key          : sap-mac
Session Timeout      : unlimited
=====

show subscriber-mgmt ipoe-session-policy "ipoe-policy-1" association
=====
IPoE Session Policy "ipoe-policy-1"
=====
-----
IPoE Interface Associations
-----
Service-Id : 1000 (IES)
- group-int-1-1
Service-Id : 2000 (VPRN)
- group-int-1-1
-----
Capture SAP Associations
-----
Service-Id : 10 (VPLS)
- 1/1/4:*,*
=====
```

[Table 226: IPoE Session Policy Field Descriptions](#) describes subscriber management IPoE session policy output fields.

*Table 226: IPoE Session Policy Field Descriptions*

Field	Description
Description	The user-provided description of this IPoE policy
Last Mgmt Change	The sysUpTime at the time of the last modification

Field	Description
Session Key	The session key to be used for this IPoE session to group subscriber hosts
Session Timeout	The session timeout period to be used for this IPoE session
IPoE Interface Associations	The service ID and interface name of the associated interfaces
Capture SAP Associations	The service ID and SAP ID of the associated capture SAPS

## 12.48 ipsec

ipsec

### Syntax

ipsec

### Context

[\[Tree\]](#) (clear ipsec)

### Full Context

clear ipsec

### Description

Commands in this context clear IPsec commands.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

ipsec

### Syntax

ipsec

### Context

[\[Tree\]](#) (show ipsec)

### Full Context

show ipsec

### Description

Commands in this context display IPsec related information.

### Platforms

All

ipsec

### Syntax

ipsec

### Context

[\[Tree\]](#) (tools>dump ipsec)

### Full Context

tools dump ipsec

### Description

Commands in this context dump IPsec information.

### Platforms

All

ipsec

### Syntax

ipsec

### Context

[\[Tree\]](#) (tools>perform ipsec)

### Full Context

tools perform ipsec

### Description

Commands in this context perform IPsec operations.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## ipsec

### Syntax

`ipsec`

### Context

[\[Tree\]](#) (show>router>interface ipsec)

### Full Context

show router interface ipsec

### Description

This command displays IPsec specific information.

### Platforms

VSR

## 12.49 ipsec-domain

## ipsec-domain

### Syntax

`ipsec-domain [ipsec-domain-id]`

### Context

[\[Tree\]](#) (show>redundancy>multi-chassis ipsec-domain)

### Full Context

show redundancy multi-chassis ipsec-domain

### Description

This command displays information about an IPsec domain.

### Parameters

*ipsec-domain-id*

Displays information IPsec domain ID.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of IPsec domain information. [Table 227: IPsec Domain Field Descriptions](#) describes the output fields

### Output Example

```

show>redundancy>multi-chassis# ipsec-domain 1
=====
Multi-Chassis IPsec Domain: 1
=====
Designated Role      : active          Priority          : 250
Tunnel Group        : 1              Revertive        : false
Admin State         : Up              Protection Status : nominal
Router Id           : 81.81.81.81     Current Active   : 81.81.81.81
Activity State      : active
=====
Domain 1 Adjacencies
=====
Peer Router-Id          Oper State  Remote Activity State  Remote Designated Role
-----
84.84.84.84             Up        standby  active
 84.84.84.84
85.85.85.85             Up        standby  standby
 85.85.85.85
-----
Domain Adjacency Entries found: 2
=====
Multi-Chassis Tunnel Statistics
=====
                               Static          Dynamic
-----
Installed                      0              0
Installing                     0              0
Awaiting Config                 0              0
Failed                          0              0
=====
    
```

Table 227: IPsec Domain Field Descriptions

Label	Description
Designated Role	The designated role, active or standby.
Priority	The priority.
Tunnel Group	The tunnel group ID.
Revertive	The revertive value. <b>true</b> means that revertive is configured. <b>false</b> means that revertive is not configured.
Admin State	The administrative state.
Protection Status	Displays nominal or notReady.

Label	Description
	<p><b>notReady</b> means the system is not ready for a switchover. There could be a major traffic impact if switchover happens in the case of notReady.</p> <p><b>nominal</b> means the tunnel-group is in a better situation to switchover than notReady. However, there still might be a traffic impact.</p>
Router Id	The router ID.
Current Active	The router ID of the active router.
Activity State	The activity state.
Adjacencies	
Peer	The IP address of the peer.
Router-Id	The router ID.
Oper State	The operational state of the peer.
Remote Activity State	The activity state of the peer.
Remote Designated Role	The designated role of the peer.
Domain Adjacency Entries found	The total number of domain peer entries found.
Multi-Chassis Tunnel Statistics	
Static	The number of static multi-chassis tunnels.
Dynamic	The number of dynamic multi-chassis tunnels.
Installed	The number of tunnels that have been successfully installed.
Installing	The number of tunnels that are being installed.
Awaiting Config	The number of synchronized tunnels that do not have a corresponding configuration ready.
Failed	The number of tunnels that failed to be installed.



## 12.50 ipsec-interface

### ipsec-interface

#### Syntax

**ipsec-interface**

**ipsec-interface** *ip-int-name* [**group** *grp-ipv6-address*]

**ipsec-interface** **gateway-name** *gw-name* [**remote-address** *ip-address* | *ipv6-address*] [**port** *port-id*] [**sa-id** *sa-id*]

**ipsec-interface** **static-tunnel-name** *tunnel-name* [**sa-id** *sa-id*]

#### Context

[\[Tree\]](#) (show>router>mld ipsec-interface)

#### Full Context

show router mld ipsec-interface

#### Description

This command displays information about the MLD states over IPsec tunnels.

#### Parameters

##### *ip-int-name*

Specifies the dynamic name for the MLD-enabled child\_SA.

##### *grp-ipv6-address*

Displays IPv6 multicast group address for which this entry contains information.

**Values**    *ipv6-address* - x:x:x:x:x:x:x (eight 16-bit pieces)  
              x:x:x:x:x:d.d.d.d  
              x - [0..FFFF]H  
              d - [0..255]D  
              - multicast group IPv6 address

##### *gw-name*

Specifies the IPsec gateway name, up to 32 characters.

##### *ip-address*

Displays the information associated with the specified IP address.

##### *ipv6-address*

Displays the information associated with the specified IPv6 address.

##### *port-id*

Specifies the peer's UDP port.

**Values** 0 to 4294967295

**sa-id**

Specifies the child\_SA ID.

**Values** 0 to 4294967295

**tunnel-name**

Specifies the IPsec static tunnel name up to 32 characters.

**Platforms**

All

**Output**

The following output is an example of MLD IPsec interface information. The interface name in the output is the dynamic name for an MLD-enabled child\_sa. There is a corresponding MLD interface name in the **show>ipsec>gateway name tunnel tunnel** output

**Output Example**

```
*A:DUT-A# show router 40 mld ipsec-interface "ipsec-if-1583392"
=====
mld ipsec dynamic tunnel interfaces detail
=====
name          : ipsec_gw_1040_1
remote-address: 3ffe::900:1
port          : 500                sa-id          : 1
index         : 1583392           state          : in-service
version       : 2                 group count    : 0
querier up    : 11384             querier expiry: 0
next query    : 56                interface name: ipsec-if-1583392
querier       : fe80::6e:9c56:9651:5829
=====
```

## 12.51 ipsec-stats

### ipsec-stats

**Syntax**

**ipsec-stats**

**Context**

[\[Tree\]](#) (show>isa>stats ipsec-stats)

**Full Context**

show isa statistics ipsec-stats

## Description

Commands in this context display IPsec tunnel statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.52 ipsec-transport-mode-profile

### ipsec-transport-mode-profile

#### Syntax

**ipsec-transport-mode-profile** [*name*]

**ipsec-transport-mode-profile** *name* **association**

#### Context

[\[Tree\]](#) (show ipsec ipsec-transport-mode-profile)

#### Full Context

show ipsec ipsec-transport-mode-profile

#### Description

This command displays IPsec transport mode profile information. If a name is specified, the command displays details about the named **ipsec-transport-mode-profile**, otherwise, a list of configured IPsec transport mode profiles is displayed.

#### Parameters

***name***

Displays information about the specified IPsec transport mode profile, up to 32 characters.

***association***

Displays a list of IP tunnels that reference the specified **ipsec-transport-mode-profile** *name*.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of IPsec transport mode profile information. [Table 228: ipsec-transport-mode-profile Field Descriptions](#) describes the fields.

#### Output Example

```
A:v70# show ipsec ipsec-transport-mode-profile "test"  
=====
```

```

IPsec Transport Mode Profile Configuration Detail
=====
Description      : (Not Specified)
Keying Type      : Dynamic           Replay Window    : None
IKE Policy Id    : 1                Auto Establish   : disabled
Transform Id1   : 1                Transform Id2    : None
Transform Id3   : None             Transform Id4    : None
Pre Shared Key   : KrbVPnF6Dg13PM/biw6ErPl5XU7+
Local Id Type    : none
Cert Profile     : (Not Specified)
TrustAnchor Prof : (Not Specified)
Cert Status Verification
  Default Resu*  : revoked
  Primary        : crl
  Secondary      : none
Max Num of Keys
  Phase 1       : 0
  Phase 2       : 0
=====
* indicates that the corresponding row element may have been truncated.

A:v70# show ipsec ipsec-transport-mode-profile "test" association
=====
IP tunnels using Transport Mode Profile
=====
SvcId   Type   SAP                               Tunnel
-----
400     vprn  tunnel-1.private:100             t1
-----
Number of Entries: 1
=====
    
```

Table 228: ipsec-transport-mode-profile Field Descriptions

Label	Description
Description	The text string to describe the transport mode profile
Keying Type	The keying type
Replay Window	The replay window size
IKE Policy ID	The ID of the IKE policy used for IKE negotiation
Auto Establish	The status of auto-establish
Transform Id1, Id2, Id3, Id4	The transform ID
Pre Shared Key	The pre-shared key used for authentication (hashed)
Local Id Type	The local ID used for IDi or IDr for IKEv2 tunnels
Cert Profile	The name of certificate profile to be used for certificate authentication
TrustAnchor Prof	The name of trust anchor profile to be used for certificate authentication.

Label	Description
Default Result	The default result when both the primary and secondary method failed to provide an answer
Primary	The primary method that is used to verify the revocation status of the peer's certificate; either CRL or OCSP.
Secondary	The secondary method that is used to verify the revocation status of the peer's certificate; either CRL, OCSP, or none.
Max Num of Keys	Phase 1 — The maximum number of IKE_SA keys, which can be saved by the system. Phase 2 — The maximum number of CHILD_SA keys, which can be saved by the system.
Transport Mode Profile	The transport mode profile name
SvcID	The service ID
Type	The service type
SAP	The SAP ID
Tunnel	The tunnel ID

## 12.53 ipv4

### ipv4

#### Syntax

**ipv4 all**

**ipv4 entry** *entry-id*

#### Context

[\[Tree\]](#) (clear>subscr-mgmt>isa-filter ipv4)

#### Full Context

clear subscriber-mgmt isa-filter ipv4

#### Description

This command resets the entry hit counts associated with the specified **isa-filter** to zero. If an *entry-id* is specified, only counters for that entry are reset, otherwise all entry counters are reset.

## Parameters

### *all*

Clears all IPv4 ISA filter entries.

### *entry-id*

Specifies the ID of the entry within the ISA filter for which to reset the counters.

**Values** 1 to 1024

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## ipv4

## Syntax

**ipv4** [**summary** | **detail**] [**egress-if** *port-id*]

**ipv4** [**summary** | **detail**] [**egress-lsp** *tunnel-id*]

**ipv4** [**summary** | **detail**] [**egress-nh** *ip-address*]

## Context

[\[Tree\]](#) (show>router>ldp>bindings>active ipv4)

## Full Context

show router ldp bindings active ipv4

## Description

This command display LDP active IPv4 bindings.

## Parameters

### **egress-if** *port-id*

Displays LDP active bindings by matching egress-if.

### **egress-lsp** *tunnel-id*

Specifies the tunnel identifier for this egress LSP.

**Values** 0 to 4294967295

### **egress-nh** *ip-address*

Displays LDP active bindings by matching egress-nh.

#### **Values**

ipv4-address - a.b.c.d

ipv6-address - x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x - [0 to FFFF]H

d - [0 to 255]D

#### detail

Displays detailed information.

#### summary

Displays information in a summarized format.

### Platforms

All

## ipv4

### Syntax

```
ipv4 [timeout seconds] [ dhcp-client-identifier {string ascii-string | hex hex-string}] [reboot-on-success]
[save-provision-file-destination file-url] [ include-user-class]
```

### Context

[\[Tree\]](#) (tools>perform>system>auto-node-provisioning ipv4)

### Full Context

tools perform system auto-node-provisioning ipv4

### Description

This command initiates the IPv4 auto-provisioning of the node on all the ports that have an operationally up port but no IP address.

### Parameters

#### *seconds*

DHCP request timeout period, before the system tries the next interface. Within this timeout, the DHCP client tries to retransmit the DHCP request with randomized exponential backoff (RFC 2131). This randomized exponential backoff begins at 2 s and goes to 64 s (2,4,8,32,64,64,64,64). After 64 seconds, the system will retry every 64 s.

**Values** 1 to 65535 seconds

**Default** 10

#### *ascii-string*

DHCP client identifier in ASCII format, up to 127 characters long.

#### *hex-string*

DHCP client identifier in hexadecimal format, up to 254 hexadecimal nibbles long.

**Values** 0x0 to 0xFFFFFFFF

***file-url***

The file URL as a *local-url*. The local file or folder name should not exceed 99 characters).

*local-url* [cflash-id][file-path]

*cflash-id* cf1:, cf1-A:, cf1-B:, cf2:, cf2-A:, cf2-B:, cf3:,  
cf3-A:, cf3-B:

***include-user-class***

Keyword to include user class data in network discovery requests.

**Platforms**

All

## ipv4

**Syntax**

**ipv4** [aspath-regex *reg-exp*] [community *comm-id*] [origin-val *originState*] [leaked] [leakable] [brief] [all]

**ipv4** [aspath-regex *reg-exp*] hunt [ community *comm-id*] [origin-val *originState*] [leaked] [leakable] [brief] [all]

**ipv4** [detail | longer] [aspath-regex *reg-exp*] [community *comm-id*] [origin-val *originState*] [leaked] [leakable] [all]

**Context**

[Tree] (show>router>bgp>routes ipv4)

**Full Context**

show router bgp routes ipv4

**Description**

This command displays BGP IPv4 routes.

**Parameters**

***reg-exp***

Displays routes matching the specified regular expression, up to 80 characters.

**hunt**

Displays entries for the specified route.

***comm-id***

Specifies the community ID, up to 72 characters.

**Values** [as-num:comm-val | ext-comm | well-known-comm | large-comm]



where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth**:*asnum:val-in-mbps*
  - **ext:4300**:*ovstate*
  - **ext** *!t:value1:value2*
  - **flowspec-set**:*ext-asnum:group-id*

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **originState**

Filters the BGP routes displayed by the command to those routes with a particular RPKI route origin validation state.

- Values**
- valid** — Displays valid validation state information.
  - invalid** — Displays invalid validation state information.
  - notfound** — Displays state information for unfound origin values.

**leaked**

Filters BGP routes displayed by the command to those routes leaked into this router's BGP instance from another BGP instance.

**leakable**

Filters BGP routes displayed by the command to those routes eligible for leaking from this router's BGP instance to another BGP instance.

**brief**

Displays the IPv4 BGP route information in a brief format.

**all**

Displays all output for imported routes.

**Platforms**

All

## 12.54 ipv4-prefix

### ipv4-prefix

**Syntax**

**ipv4-prefix** [*ip-prefix/ip-prefix-length*]

**Context**

[\[Tree\]](#) (show>router>bgp>routes>bgp-ls ipv4-prefix)

**Full Context**

show router bgp routes bgp-ls ipv4-prefix

**Description**

This command displays BGP-LS NLRIs with an IPv4 prefix.

**Parameters**

***ip-prefix/ip-prefix-length***

Specifies information for the specified IPv4 prefix and mask length, up to 64 characters.

**Platforms**

All

## 12.55 ipv6

ipv6

### Syntax

**ipv6 all**

**ipv6 entry** *entry-id*

### Context

[\[Tree\]](#) (clear>subscr-mgmt>isa-filter ipv6)

### Full Context

clear subscriber-mgmt isa-filter ipv6

### Description

This command resets the entry hit counts associated with the specified **isa-filter** to zero. If an *entry-id* is specified, only counters for that entry are reset, otherwise all entry counters are reset.

### Parameters

*all*

Clears all IPv6 ISA filter entries.

*entry-id*

Specifies the ID of the entry within the ISA filter for which to reset the counters.

**Values** 1 to 1024

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

ipv6

### Syntax

**ipv6 [summary | detail] [egress-if** *port-id*]

**ipv6 [summary | detail] [egress-lsp** *tunnel-id*]

**ipv6 [summary | detail] [egress-nh** *ip-address*]

### Context

[\[Tree\]](#) (show>router>ldp>bindings>active ipv6)

## Full Context

```
show router ldp bindings active ipv6
```

## Description

This command displays LDP active IPv6 bindings.

## Parameters

### **egress-if** *port-id*

Displays LDP active bindings by matching egress-if.

### **egress-lsp** *tunnel-id*

Specifies the tunnel identifier for this egress LSP.

**Values** 0 to 4294967295

### **egress-nh** *ip-address*

Displays LDP active bindings by matching egress-nh.

**Values**

ipv4-address	- a.b.c.d
ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H d - [0 to 255]D

### **detail**

Displays detailed information.

### **summary**

Displays information in a summarized format.

## Platforms

All

## ipv6

## Syntax

```
ipv6 [filter-type filter-type]
```

```
ipv6 embedded [inactive]
```

```
ipv6 ipv6-filter-id embedded [inactive]
```

```
ipv6 ipv6-filter-id [detail]
```

```
ipv6 ipv6-filter-id associations
```

```
ipv6 ipv6-filter-id type entry-type
```

```
ipv6 ipv6-filter-id counters [type entry-type] [detail]  
ipv6 ipv6-filter-id entry entry-id [counters] [detail]  
ipv6 ipv6-filter-id [entry entry-id] effective-action [{ingress | egress}]  
ipv6 ipv6-filter-id [entry entry-id] effective-action router [{ingress | egress}]  
ipv6 ipv6-filter-id [entry entry-id] effective-action service service-id [{ ingress | egress}]
```

## Context

[\[Tree\]](#) (show>filter ipv6)

## Full Context

```
show filter ipv6
```

## Description

This command shows IPv6 filter information.

When **effective-action** is specified, this command displays what effectively happens to a packet that matches the criteria associated with the IPv6 filter policy.

## Parameters

### *filter-type*

Specifies the type of filter to display.

**Values** config, flowspec, host-common, openflow

### *inactive*

Shows all embeddings, optionally shows inactive embedding only, if *ipv6-filter-id* is not specified shows all embedded filters.

### *ipv6-filter-id*

Specifies the IPv6 filter policy for which to display information. Values can be expressed in different formats. The following only shows decimal integer format.

**Values** 1 to 65535

### *detail*

Displays detailed information.

### *associations*

Appends, to the detailed filter policy output, information as to where the specified filter policy ID is applied.

### *entry-type*

Specifies type of filter entry to display.

**Values** fixed, radius-insert, credit-control-insert, embedded, radius-shared

### *counters*

Displays counter information. Egress counters count the packets without Layer 2 encapsulation. Ingress counters count the packets with Layer 2 encapsulation.

**entry-id**

Specifies the filter policy entry (of the specified filter policy) to display information.

**Values** 1 to 2097151

**effective-action**

Displays the action that the system will effectively apply to the packet.

**ingress**

Filters the output and only displays the information for filter policies applied on ingress.

**egress**

Filters the output and only displays the information for filter policies applied on egress.

**router**

Filters the output and only displays the information for that specific service ("Base" instance).

**service-id**

Filters the output and only displays the information for the specified service. The specified value should correspond to an existing service in which the filter has been applied.

**Platforms**

All

**Output**

**Show Filter (no filter-id specified)** — The following output is an example of IPv6 filter information when no filter ID is specified, and [Table 229: IPv6 Filter Output Fields - no policy specified](#) describes the fields.

**Output Example**

```
A:ALA-48# show filter ipv6
=====
IP Filters
=====
Filter-Id Scope      Applied Description
-----
100      Template Yes      test
200      Exclusive Yes
-----
Num IPv6 filters: 2
=====
A:ALA-48# show filter ipv6 embedded
=====
IP Filter embedding
=====
In   From   Priority   Inserted   Status
-----
10   2       50        1/1       OK
     1       100       1/2       OK- 1 entry overwritten
20   2       100       0/5       Failed – out of resources
=====
A:ALA-48#
=====
Configured IP Filters                               Total:    4
=====
Filter-Id  Scope      Applied Description
```

```

-----
1      Template No
5      Exclusive No
10     Template Yes
100    Embedded N/A
=====
System IP Filters                               Total:    1
=====
Filter-Id          Description
-----
_tmnx_ofs_test     of-switch 'test' embedded filter
-----
Num IP filters: 5
=====
    
```

Table 229: IPv6 Filter Output Fields - no policy specified

Label	Description
Filter Id	The IPv6 filter ID
Scope	Template — the filter policy is of type template
	Exclusive — the filter policy is of type exclusive
Applied	No — the filter policy ID has not been applied
	Yes—the filter policy ID is applied
Description	The IPv6 filter policy description
In	Shows embedding filter index
From	Shows embedded filters included
Priority	Shows priority of embedded filter
Inserted	Shows embedded/total number of entries from embedded filter Status: <b>OK</b> — embedding operation successful, if any entries are overwritten this will also be indicated <b>Failed</b> — embedding failed, the reason is displayed (out of resources)

**Show Filter (with filter-id specified)** — The following output is an example of IPv6 filter information when filter-id is specified, and [Table 230: IPv6 Filter Policy Output Fields](#) describes the fields.

**Output Example**

```

A:ALA-48# show filter ipv6 100
=====
IPv6 Filter
=====
Filter Id      : 100                      Applied       : Yes
Scope         : Template                  Def. Action   : Forward
Entries       : 1
    
```

```

Description : test
-----
Filter Match Criteria : IPv6
-----
Entry      : 10
Log Id     : 101
Src. IP    : ::/0
Dest. IP   : ::/0
Next Header : Undefined
ICMP Type  : Undefined
Tcp-flag   : (Not Specified)
Match action : Drop
Ing. Matches : 0
Src. Port  : None
Dest. Port : None
Dscp       : Undefined
ICMP Code  : Undefined
Egr. Matches : 0
=====
A:ALA-48#
    
```

Table 230: IPv6 Filter Policy Output Fields

Label	Description
Filter Id	The IPv6 filter policy ID
Scope	Template — the filter policy is of type template
	Exclusive — the filter policy is of type exclusive
Entries	The number of entries configured in this filter ID
Description	The IPv6 filter policy description
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Filter Match Criteria	IP — Indicates the filter is an IPv6 filter policy
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
Log Id	The filter log ID
Src. IP	The source IPv6 address and mask match criterion <ul style="list-style-type: none"> <li>• "::/0" indicates no criterion specified for the filter entry</li> </ul>
Dest. IP	The destination IPv6 address and mask match criterion <ul style="list-style-type: none"> <li>• "::/0" indicates no criterion specified for the filter entry</li> </ul>
Protocol	The protocol ID for the match criteria; undefined indicates no protocol specified



Label	Description
ICMP Type	The ICMP type match criterion; undefined indicates no ICMP type specified
Fragment	False — configures a match on all non-fragmented IPv6 packets
	True — configures a match on all fragmented IPv6 packets
	Off — fragments are not a matching criteria; all fragments and nonfragments implicitly match
Sampling	Off — specifies that traffic sampling is disabled
	On — specifies that traffic matching the associated IPv6 filter entry is sampled
IP-Option	Specifies matching packets with a specific IPv6 option or a range of IPv6 options in the IPv6 header for IPv6 filter match criteria
Match action	Default — the filter does not have an explicit forward or drop match action specified; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
	Drop — drop packets matching the filter entry
	Forward—the explicit action to perform is forwarding of the packet; if the action is Forward, then if configured, the next hop information should be displayed, including nexthop: <i>IPv6 address</i> , Indirect: <i>IPv6 address</i> or Interface: <i>IPv6 interface name</i>
Ing. Matches	The number of ingress filter matches/hits for the filter entry
Src. Port	The source TCP, UDP, or SCTP port number, port range, or port match list
Dest. Port	The destination TCP, UDP, or SCTP port number, port range, or port match list
Dscp	The DiffServ Code Point (DSCP) name
ICMP Code	The ICMP code field in the ICMP header of an IPv6 packet
Tcp-flag	<p>Specifies the list of TCP flags selected:</p> <ul style="list-style-type: none"> <li>• match true is represented with the TCP Flag value</li> <li>• match false is represented with an exclamation mark before the flag value</li> </ul> <p>TCP flags not selected as match criteria are not displayed</p> <p>Example:</p> <p>Matching "tcp-ack true" and "tcp-rst false" is represented in the show command as Tcp-flag : Ack !Rst</p>

Label	Description
Option-present	Off — specifies not to search for packets that contain the option field or have an option field of zero
	On — matches packets that contain the option field or have an option field of zero be used as IPv6 filter match criteria
Int. Sampling	Off — interface traffic sampling is disabled
	On — interface traffic sampling is enabled
Multiple Option	Off — the option fields are not checked
	On — packets containing one or more option fields in the IPv6 header will be used as IPv6 filter match criteria
Egr. Matches	The number of egress filter matches/hits for the filter entry
Ing. Rate-limiter	The number of offered, forwarded, and dropped packet matches for the filter entry

**Show Filter Associations** — The following output is an example of IPv6 filter information when the **associations** keyword is specified, and [Table 231: Filter IPv6 Associations Output Fields](#) describes the fields.

### Output Example

```
A:ALA-48# show filter ipv6 1 associations
=====
IPv6 Filter
=====
Filter Id      : 1                               Applied      : Yes
Scope         : Template                       Def. Action  : Drop
Entries       : 1
-----
Filter Association : IPv6
-----
Service Id    : 2000                             Type         : IES
- SAP        : 1/1/1:2000 (Ingress)
-----
Filter Match Criteria : IPv6
-----
Entry        : 10
Log Id       : 101
Src. IP      : ::/0                               Src. Port    : None
Dest. IP     : ::/0                               Dest. Port   : None
Next Header  : Undefined                         Dscp        : Undefined
ICMP Type    : Undefined                         ICMP Code    : Undefined
TCP-flag     : (Not Specified)
Match action : Drop
Ing. Matches : 0                               Egr. Matches : 0
=====
A:ALA-48#
```

Table 231: Filter IPv6 Associations Output Fields

Label	Description
Filter Id	The IPv6 filter policy ID
Scope	Template — the filter policy is of type Template
	Exclusive — the filter policy is of type Exclusive
Entries	The number of entries configured in this filter ID
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Service Id	The service ID on which the filter policy ID is applied; the output also provides a list of service points where the filter has been applied
SAP	The Service Access Point on which the filter policy ID is applied
(Ingress)	The filter policy ID is applied as an ingress filter policy on the interface
(Egress)	The filter policy ID is applied as an egress filter policy on the interface
Type	The type of service of the service ID
Entry	The filter entry ID; if the filter entry ID indicates the entry is Inactive, the filter entry is incomplete, no action was specified
Log Id	The filter log ID
Src. IP	The source IPv6 address and mask match criterion <ul style="list-style-type: none"> <li>• "0.0.0.0/0" indicates no criterion specified for the filter entry</li> </ul>
Dest. IP	The destination IPv6 address and mask match criterion <ul style="list-style-type: none"> <li>• "0.0.0.0/0" indicates no criterion specified for the filter entry</li> </ul>
Protocol	The protocol ID for the match criteria; undefined indicates no protocol specified
ICMP Type	The ICMP type match criterion; undefined indicates no ICMP type specified

Label	Description
Fragment	False — configures a match on all non-fragmented IPv6 packets
	True — configures a match on all fragmented IPv6 packets
	Off — fragments are not a matching criteria; all fragments and nonfragments implicitly match
Sampling	Off — specifies that traffic sampling is disabled
	On — specifies that traffic matching the associated IPv6 filter entry is sampled
IP-Option	Specifies matching packets with a specific IPv6 option or a range of IPv6 options in the IPv6 header for IPv6 filter match criteria
TCP-syn	False — configures a match on packets with the SYN flag set to false
	True — configures a match on packets with the SYN flag set to true
	Off — the state of the TCP SYN flag is not considered as part of the match criteria
Match action	Default — the filter does not have an explicit forward or drop match action specified; if the filter entry ID indicates the entry is Inactive, the filter entry is incomplete, no action was specified
	Drop — drop packets matching the filter entry
	Forward — the explicit action to perform is forwarding of the packet; if the action is Forward, then if configured the nexthop information should be displayed, including Nexthop: <IPv6 address>, Indirect: <IPv6 address> or Interface: <IPv6 interface name>
Ing. Matches	The number of ingress filter matches/hits for the filter entry
Src. Port	The source TCP, UDP, or SCTP port number, port range, or port match list
Dest. Port	The destination TCP, UDP, or SCTP port number, port range, or port match list
Dscp	The DiffServ Code Point (DSCP) name
ICMP Code	The ICMP code field in the ICMP header of an IPv6 packet
Option-present	Off — specifies not to search for packets that contain the option field or have an option field of zero

Label	Description
	On — matches packets that contain the option field or have an option field of zero be used as IPv6 filter match criteria
Int. Sampling	Off — interface traffic sampling is disabled
	On — interface traffic sampling is enabled
Multiple Option	Off — the option fields are not checked
	On — packets containing one or more option fields in the IPv6 header will be used as IPv6 filter match criteria
TCP-ack	False — configures a match on packets with the ACK flag set to false
	True — configured a match on packets with the ACK flag set to true
	Off — the state of the TCP ACK flag is not considered as part of the match criteria
Egr. Matches	The number of egress filter matches/hits for the filter entry

**Show Filter Counters** — The following output is an example of IPv6 filter information when the **counters** keyword is specified, and [Table 232: Filter IPv6 Counters Output Fields](#) describes the output fields.

Egress count the packets without Layer 2 encapsulation. Ingress counters count the packets with Layer 2 encapsulation.

### Output Example

```
A:ALA-48# show filter ipv6 8 counters
=====
IPv6 Filter
=====
Filter Id      : 8                               Applied       : Yes
Scope         : Template                       Def. Action   : Forward
Entries       : 4
Description    : Description for Ipv6 Filter Policy id # 8
-----
Filter Match Criteria : IPv6
-----
Entry         : 5
Ing. Matches  : 0 pkts
Egr. Matches  : 0 pkts

Entry         : 6
Ing. Matches  : 0 pkts
Egr. Matches  : 0 pkts

Entry         : 8
Ing. Matches  : 160 pkts (14400 bytes)
Egr. Matches  : 80 pkts (6880 bytes)

Entry         : 10
Ing. Matches  : 80 pkts (7200 bytes)
Egr. Matches  : 80 pkts (6880 bytes)
```

```
=====
A:ALA-48#
```

Table 232: Filter IPv6 Counters Output Fields

Label	Description
IP Filter Filter Id	The IPv6 filter policy ID
Scope	Template — the filter policy is of type template
	Exclusive — the filter policy is of type exclusive
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Filter Match Criteria	IP — Indicates the filter is an IPv6 filter policy
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
Ing. Matches	The number of ingress filter matches/hits for the filter entry
Egr. Matches	The number of egress filter matches/hits for the filter entry

Egress count the packets without Layer 2 encapsulation. Ingress counters count the packets with Layer 2 encapsulation.

**Show Filter IPv6 Output (with effective-action specified)** — The following output is an example of IPv6 filter information when the **effective-action** keyword is specified. [Table 233: Filter IPv6 effective-action Output Fields](#) describes the command output fields.

If the main action (either primary or secondary) cannot be performed, a reason will be given. This will be displayed on the same line as the Effective Action. The reason codes as currently defined are:

- action not supported in L2 service
- action not supported in L3 service
- action not supported on egress
- destination not reachable
- egress-pbr is off
- egress-pbr is on
- entry-default

- filter-default-action
- pbr-down-action-override
- target does not exist

**Output Example**

```

show filter ipv6 10 entry 10 effective-action
=====
IPv6 Filter
=====
Filter Id       : 10                               Applied       : Yes
Scope          : Template                       Def. Action   : Drop
Entries        : 8
Description     : (Not Specified)
-----
Entry          : 10
-----
Origin         : Fixed - overwrites embedded filter 30 entry 5
Egress PBR     : Disabled
Stickiness     : No
PBR Dwn Act Override: None
PBR Down Action : Drop (entry-default)

Configuration
Primary Action  : Forward (Next Hop VRF)
Next Hop       : 3ffe:0:a0a:a01:: (Indirect)
Router         : Base
Extended Action : Remark DSCP "cp51"
Secondary Action : Forward (Next Hop VRF)
Next Hop       : 3ffe:0:1414:1401:: (Indirect)
Router         : Base
Extended Action : Remark DSCP "cp31"

Status
Target status based on extended checks
Primary Action  : Up
Secondary Action : Up
Downloaded Action : Primary
Stickiness Timer : Not Running

Effective Action based on application context
Service Id     : 100                               Type          : IES
Ingress
Effective Action: Primary
Extended Action : Performed
Service Id     : N/A                               Type          : Base Router
Egress
Effective Action: Primary
Extended Action : Performed
=====
    
```

Table 233: Filter IPv6 effective-action Output Fields

Label	Description
Filter Id	The IPv6 filter policy ID
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied

Label	Description
Scope	Template — the filter policy is of type Template
	Exclusive — the filter policy is of type Exclusive
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Entries	The number of entries configured in this filter ID
Description	The IPv6 filter policy description
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
Origin	The type of filter entry
Egress PBR	Indicates if the <b>egress-pbr</b> flag is set for this entry
Stickiness	No — stickiness is not configured
	Yes — stickiness is configured
PBR Dwn Act Override	Indicates whether or not the action to take when the PBR target is down has been overridden
PBR Down Action	Indicates the action to take when the target is down; packets that match the entry criteria will be subject to the PBR Down Action in case the target of the main action is down
Configuration	Section of the output providing information on the configured parameters
Primary Action	The configured action, if any; indented sub-labels in the show output provide configured parameters for this action
Secondary Action	The configured secondary action, if any; indented sub-labels in the show output provide configured parameters for this action
Status/Target status based on extended checks	Section of the output providing information on the operational status of certain parameters
Primary Action	The status of the target of the primary action, if configured, based on extended checks
Secondary Action	The status of the target of the secondary action, if configured, based on extended checks
Downloaded Action	The action downloaded by the CPM to the IOM



Label	Description
Stickiness Timer	The status of the stickiness timer, if any
Effective Action based on application context	Section of the output providing the effective action, in the context of services, that a packet matching the criteria will be subject to
Service Id	The service ID on which the filter policy ID is applied; the output also provides a list of service points where the filter has been applied
Type	The service type in which the service has been applied
Ingress/Egress	The direction in which the service has been applied
Effective Action	Indicates the effective action the packet will be subject to
Extended Action	Indicates the configured extended action, if any

## ipv6

### Syntax

```
ipv6 ipv6-filter-id [entry entry-id] [{ingress | egress}]
```

### Context

[\[Tree\]](#) (clear>filter ipv6)

### Full Context

```
clear filter ipv6
```

### Description

Clears the counters associated with the entries of the specified IPv6 filter policy.

By default, the counters associated with each entry of the specified filter policy are all cleared. The scope of which counters are cleared can be narrowed using the command line parameters.

### Default

Clears all counters associated with each entry of the specified IPv6 filter policy.

### Parameters

#### *ipv6-filter-id*

The IPv6 filter policy ID for which to clear the entry counters. Values can be expressed in different formats. The following only shows decimal integer format.

**Values** 1 to 65535

#### *entry-id*

Specifies that only the counters associated with the specified filter policy entry are cleared.

**Values** 1 to 2097151

**ingress**

Specifies to only clear the ingress counters.

**egress**

Specifies to only clear the egress counters.

**Platforms**

All

**ipv6**

**Syntax**

**ipv6** *ipv6-filter-id*

**Context**

[\[Tree\]](#) (tools>dump>filter>resources ipv6)

**Full Context**

tools dump filter resources ipv6

**Description**

This command displays information about the specified IPv6 filter including resource utilization on CPM and IOM, the IOMs on which the filter is used, and the entries using the most resources.

**Parameters**

***ipv6-filter-id***

Specifies that only the filter resource utilization associated with this IPv6 filter will be displayed.

**Values** 1 to 65535

**Platforms**

All

**Output**

The following output is an example of IPv6 filter resource utilization information.

**Output Example**

```
*A:Dut-C>tools>dump>filter>resources># ipv6 "fSpec-0"
=====
Resource utilization details for Ipv6 filter fSpec-0
=====
CPM entries used                : 0
```

```

CPM subentries used           : 0
TCAM entries used (per FlexPath) : 0
Associated with IOMs         : 2
-----
Largest 5 entries
-----
Entry ID                      Active          TCAM entries
                              (per FlexPath)
-----
No Matching Entries
-----
=====
    
```

## ipv6

### Syntax

```

ipv6 [timeout seconds] [dhcp-client-identifier {duid-link-local | duid-enterprise} { string ascii-string |
    hex hex-string}] [reboot-on-success] [save-provision-file-destination file-url] [include-user-class]
    
```

### Context

[\[Tree\]](#) (tools>perform>system>auto-node-provisioning ipv6)

### Full Context

tools perform system auto-node-provisioning ipv6

### Description

This command initiates the IPv6 auto-provisioning of the node on all the ports that have an operationally up port but no IP address.

### Parameters

#### *seconds*

DHCP request timeout period, before the system tries the next interface. Within this timeout, the DHCP client tries to retransmit the DHCP request with randomized exponential backoff (RFC 2131). This randomized exponential backoff begins at 2 s and goes to 64 s (2,4,8,32,64,64,64,64). After 64 seconds, the system will retry every 64 s.

**Values** 1 to 65535 seconds

**Default** 10

#### *duid-link-local*

Keyword to configure the type code of the server DUID.

#### *duid-enterprise*

Keyword to configure the type code of the server DUID.

#### *ascii-string*

DHCP client identifier in ASCII format, up to 127 characters long.

### ***hex-string***

DHCP client identifier in hexadecimal format, up to 254 hexadecimal nibbles long.

**Values** 0x0 to 0xFFFFFFFF

### ***file-url***

The file URL as a *local-url*. The local file or folder name should not exceed 99 characters).

*local-url* [cflash-id][file-path]

*cflash-id* cf1:, cf1-A:, cf1-B:, cf2:, cf2-A:, cf2-B:, cf3:,  
cf3-A:, cf3-B:

### ***reboot-on-success***

Keyword to reboot the router when the auto-provisioning process completes successfully.

### ***include-user-class***

Keyword to include user class data in network discovery requests.

## **Platforms**

All

## **ipv6**

## **Syntax**

**ipv6 entry** *entry-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

## **Context**

[\[Tree\]](#) (monitor>cpm-filter ipv6)

## **Full Context**

monitor cpm-filter ipv6

## **Description**

This command displays monitor command statistics for IPv6 filter entries.

## **Parameters**

### ***entry-id***

Displays information on the specified filter entry ID for the specified filter ID only.

**Values** 1 to 2048

### ***seconds***

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## ipv6

**Syntax**

**ipv6** *entry-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**Context**

[\[Tree\]](#) (monitor>management-access-filter ipv6)

**Full Context**

monitor management-access-filter ipv6

**Description**

This command monitors statistics for the MAF IPv6 filter entry.

**Parameters**

**entry-id**

Specifies an existing IP MAF entry ID.

**Values** 1 to 9999

**interval seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic instead of the delta.

## **Platforms**

All

## **ipv6**

## **Syntax**

**ipv6** *ipv6-filter-id* **entry** *entry-id* [ **interval** *seconds*] [**repeat** *repeat*] [ **absolute** | **rate**]

## **Context**

[\[Tree\]](#) (monitor>filter ipv6)

## **Full Context**

monitor filter ipv6

## **Description**

This command enables IPv6 filter monitoring. The statistical information for the specified IPv6 filter entry displays at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified IPv6 filter. The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## **Parameters**

### ***ipv6-filter-id***

Displays detailed information for the specified IPv6 filter ID and its filter entries.

**Values** [1 to 65535] | fSpec-[0 to 2147483647] | [1 to 65535 to 8192] | [1 to 65535:P1 to 4096] | \_tmnx\_tms\_egr-*mda-id*-F | \_tmnx\_tms-ing-*mda-id*-F | \_tmx\_ofs\_*ofs-name* | *name*: 64 chars max

### ***entry-id***

Displays information on the specified filter entry ID for the specified filter ID only.

**Values** 1 to 65535

### ***seconds***

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### ***repeat***

Configures how many times the command is repeated.

**Default** 10

**Values** 1 to 999

### ***absolute***

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### ***rate***

Displays rate-per-second for each statistic instead of the delta.

## **Platforms**

All

## **Output**

The following output is an example of filter IPv6 information.

### **Output Example**

```
A:ALA-48# monitor filter ipv6 100 entry 10 interval 3 repeat 3 absolute
=====
Monitor statistics for IPv6 filter 100 entry 10
-----
At time t = 0 sec (Base Statistics)
-----
Ing. Matches : 0                               Egr. Matches : 1
-----
At time t = 3 sec (Mode: Absolute)
-----
Ing. Matches : 0                               Egr. Matches : 1
-----
At time t = 6 sec (Mode: Absolute)
-----
Ing. Matches : 0                               Egr. Matches : 1
-----
At time t = 9 sec (Mode: Absolute)
-----
Ing. Matches : 0                               Egr. Matches : 01
=====
A:ALA-48#
```

```
A:ALA-48# monitor filter ipv6 100 entry 10 interval 3 repeat 3 rate
=====
Monitor statistics for IPv6 filter 100 entry 10
-----
At time t = 0 sec (Base Statistics)
-----
Ing. Matches : 0                               Egr. Matches : 1
-----
At time t = 3 sec (Mode: Rate)
-----
Ing. Matches : 0                               Egr. Matches : 1
-----
At time t = 6 sec (Mode: Rate)
-----
Ing. Matches : 0                               Egr. Matches : 1
-----
At time t = 9 sec (Mode: Rate)
-----
Ing. Matches : 0                               Egr. Matches : 1
=====
A:ALA-48#
```

## ipv6

### Syntax

```
ipv6 [aspath-regex reg-exp] [community comm-id] [origin-val originState] [leaked] [leakable] [brief]
[all]
ipv6 [aspath-regex reg-exp] hunt [ community comm-id] [origin-val originState] [leaked] [leakable]
[brief] [all]
ipv6 [detail | longer] [aspath-regex reg-exp] [community comm-id] [origin-val originState] [leaked]
[leakable] [all]
```

### Context

[\[Tree\]](#) (show>router>bgp>routes ipv6)

### Full Context

```
show router bgp routes ipv6
```

### Description

This command displays BGP IPv6 routes.

### Parameters

#### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

#### **hunt**

Displays entries for the specified route.

#### **comm-id**

Specifies the community ID, up to 72 characters.



**Values** `[as-num:comm-val | ext-comm | well-known-comm | large-comm]`

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:

- `{target | origin}:ip-address:comm-val`
- `{target | origin}:asnum:ext-comm-val`
- `{target | origin}:ext-asnum:comm-val`
- **bandwidth**:*asnum*:*val-in-mbps*
- **ext:4300**:*ovstate*
- **ext** *!t:value1:value2*
- **flowspec-set**:*ext-asnum:group-id*

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **originState**

Filters the BGP routes displayed by the command to those routes with a particular RPKI route origin validation state.

- Values**
- `valid` — Displays valid validation state information.
  - `invalid` — Displays invalid validation state information.

notfound — Displays state information for unfound origin values.

**leaked**

Filters BGP routes displayed by the command to those routes leaked into this router's BGP instance from another BGP instance.

**leakable**

Filters BGP routes displayed by the command to those routes eligible for leaking from this router's BGP instance to another BGP instance.

**brief**

Displays the IPv4 BGP route information in a brief format.

**all**

Displays all output for imported routes.

**Platforms**

All

## 12.56 ipv6-exception

### ipv6-exception

**Syntax**

`ipv6-exception exception`

`ipv6-exception exception [associations]`

`ipv6-exception exception [counters]`

`ipv6-exception exception entry entry-id [counters]`

**Context**

[\[Tree\]](#) (show>filter ipv6-exception)

**Full Context**

show filter ipv6-exception

**Description**

This command shows IPv6 exception information.

**Parameters**

***exception***

Specifies the IPv6 exception filter.

**Values** *exception-id*: 1 to 65535

*exception-name*: An existing IPv6 exception filter name up to 64 characters.

**associations**

Displays associations applicable to the specified IPv6 exception.

**counters**

Displays counters for the specified IPv6 exception.

**entry *entry-id***

Specifies an integer that identifies the entry.

**Values** 1 to 2097151

**Platforms**

VSR

**Output**

The following output is an example of IPv6 exception filter information, and [Table 234: IPv6 Exception Output Fields](#) describes the fields.

**Output Example**

```
*A:Dut-C# show filter ipv6-exception

=====
Configured IPv6-Exception Filters                               Total:    1
=====
Filter-Id  Scope   Applied Description
-----
1          Template Yes?

=====
Num IPv6-Exception filters: 1
=====
*A:kanlnx94: Dut-B# show filter ipv6-exception 1

=====
IPv6-Exception Filter
=====
Filter Id      : 1                               Applied      : Yes
Scope         : Template
Entries       : 1
Description    : (Not Specified)
Filter Name    : An IPv6 exception filter
-----
Filter Match Criteria : IPv6
-----
Entry          : 10 (Inactive)
Description    : (Not Specified)
Src. IP       : ::/0
Src. Port     : n/a
Dest. IP      : ::/0
Dest. Port    : eq 1234
Next Header   : 6
ICMP Type     : Undefined                       ICMP Code    : Undefined
Ing. Matches  : 0 pkts
Egr. Matches  : 0 pkts
```

```
=====  
*A:Dut-C# show filter ipv6-exception 1 associations  
=====
```

```
IPv6-Exception Filter  
=====
```

```
Filter Id      : 1                      Applied      : Yes  
Scope         : Template  
Entries       : 1  
Description   : (Not Specified)  
Filter Name   : An IPv6 exception filter  
-----  
Filter Association : IPv6  
-----  
Service Id    : N/A                    Type         : Router Base  
- Router Interface secure-interface  
-----  
Filter associated with IOM: 1  
=====
```

```
=====  
*A:Dut-C# show filter ipv6-exception 1 counters  
=====
```

```
IPv6-Exception Filter  
=====
```

```
Filter Id      : 1                      Applied      : Yes  
Scope         : Template  
Entries       : 1  
Description   : (Not Specified)  
Filter Name   : An IPv6 exception filter  
-----  
Filter Match Criteria : IPv6  
-----  
Entry         : 10 (Inactive)  
Ing. Matches  : 0 pkts  
Egr. Matches  : 0 pkts  
=====
```

```
=====  
*A:Dut-C# show filter ipv6-exception 1 entry 10  
=====
```

```
IPv6-Exception Filter  
=====
```

```
Filter Id      : 1                      Applied      : Yes  
Scope         : Template  
Entries       : 1  
Description   : (Not Specified)  
Filter Name   : An IPv6 exception filter  
-----  
Filter Match Criteria : IPv6  
-----  
Entry         : 10 (Inactive)  
Description   : (Not Specified)  
Src. IP       : ::/0  
Src. Port     : n/a  
Dest. IP      : ::/0  
Dest. Port    : eq 1234  
Next Header   : 6  
ICMP Type     : Undefined                ICMP Code   : Undefined  
=====
```

```

Ing. Matches      : 0 pkts
Egr. Matches      : 0 pkts

=====

*A:Dut-C# show filter ipv6-exception 1 entry 10 counters

=====
IPv6-Exception Filter
=====
Filter Id         : 1                               Applied          : Yes
Scope             : Template
Entries           : 1
Description       : (Not Specified)
Filter Name       : An IPv6 exception filter
-----
Filter Match Criteria : IPv6
-----
Entry?            : 10 (Inactive)
Ing. Matches      : 0 pkts
Egr. Matches      : 0 pkts

=====
*A:Dut-C#
    
```

Table 234: IPv6 Exception Output Fields

Label	Description
Configured IPv6-Exception Filters	The number of configured IPv6 exception filters.
Filter-Id	The filter ID.
Scope	Template — The filter policy is of type Template. Exclusive — The filter policy is of type Exclusive.
Applied	No — The IPv6 exception filter has not been applied. Yes — The IPv6 exception filter is applied.
Entries	The number of entries.
Description	The description of the specified filter, if specified.
Filter Name	The filter name.
Num IPv6-Exception filters	The number of IPv6 exception filters.
Entry	The number of active or inactive entries.
Src. IP	The source IP address of the logged packet.
Src. Port	The source port of the logged packet.
Dst. IP	The destination IP address of the logged packet.

Label	Description
Dst. Port	The destination port of the logged packet.
Next Header	8-bit selector. Identifies the type of header immediately following the IPv6 header.
ICMP Type	The ICMP type match criterion. Undefined indicates no ICMP type specified.
ICMP Code	The ICMP code field in the ICMP header of an IPv6 packet.
Ing. Matches	The number of packets matched on ingress.
Egr. Matches	The number of packets matched on egress.
Filter Association	Indicates the filter is an IPv6 filter policy.
Service Id	The service ID on which the IPv6 exception ID is applied.
Filter association with IOM	The number of filters associated with an IOM.

## ipv6-exception

### Syntax

**ipv6-exception** *exception* [**entry** *entry-id*] [**ingress**]

### Context

[\[Tree\]](#) (clear>filter ipv6-exception)

### Full Context

clear filter ipv6-exception

### Description

This command clears the information about the IPv6 exception filter.

### Parameters

#### *exception*

Specifies the IPv6 exception filter by ID or name.

**Values** *exception-id* | *exception-name*

#### *exception-id*

Specifies the IPv6 exception filter ID for which to clear the entry counters.

**Values** 1 to 65535

***exception-name***

Specifies name of the IPv6 exception filter, up to 64 characters.

***entry-id***

Specifies that only the counters associated with the specified filter policy entry are cleared.

**Values** 1 to 2097151

**ingress**

Specifies to only clear the ingress counters.

**Platforms**

VSR

## 12.57 ipv6-filter

### ipv6-filter

**Syntax**

**ipv6-filter** [**entry** *entry-id*]

**Context**

[\[Tree\]](#) (show>system>security>cpm-filter ipv6-filter)

**Full Context**

show system security cpm-filter ipv6-filter

**Description**

This command displays CPM IPv6 filters and only applies to the 7750 SR and 7950 XRS.

**Parameters**

***entry-id***

Identifies a CPM IPv6 filter entry as configured on this system.

**Values** 1 to 131072

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output is an example of IPv6 filter entry information.

[Table 235: Show CPM IPv6 Filter Output Fields](#) describes CPM IPv6 filter output fields.

**The following is an output example on the 7750 SR:**

```
A:ALA-35# show system security cpm-filter ipv6-filter
=====
CPM IPv6 Filters
=====
Entry-Id Dropped Forwarded Description
-----
101      25880    0          CPM-Filter 2001:db8::101:2 #101
102      25880    0          CPM-Filter 2001:db8::102:2 #102
103      25880    0          CPM-Filter 2001:db8::103:2 #103
104      25880    0          CPM-Filter 2001:db8::104:2 #104
105      25880    0          CPM-Filter 2001:db8::105:2 #105
106      25880    0          CPM-Filter 2001:db8::106:2 #106
107      25880    0          CPM-Filter 2001:db8::107:2 #107
108      25880    0          CPM-Filter 2001:db8::108:2 #108
109      25880    0          CPM-Filter 2001:db8::109:2 #109
=====

A:ALA-35#

A:ALA-35# show system security cpm-filter ipv6-filter entry 101
=====
CPM IPv6 Filter Entry
=====
Entry Id : 1
Description : CPM-Filter 2001:db8::101:2 #101
-----
Filter Entry Match Criteria :
-----
Log Id : n/a
Src. IP : 2001:db8::101:2      Src. Port : 0
Dest. IP : 2001:db8::101:1    Dest. Port : 0
next-header : none           Dscp : Undefined
ICMP Type : Undefined        ICMP Code : Undefined
TCP-syn : Off                TCP-ack : Off
Match action : Drop
Dropped pkts : 25880         Forwarded pkts : 0
=====

A:ALA-35#
```

*Table 235: Show CPM IPv6 Filter Output Fields*

Label	Description
Entry-Id	Displays information about the specified management access filter entry
Dropped	Displays the number of dropped events.
Forwarded	Displays the number of forwarded events.
Description	Displays the CPM filter description.
Log ID	Log Id where matched packets will be logged.
Src IP	Displays Source IP address(/netmask)
Dest. IP	Displays Destination IP address(/netmask).



Label	Description
Src Port	Displays Source Port Number (range).
Dest. Port	Displays Destination Port Number (range).
next-header	Displays next-header field in the IPv6 header.
Dscp	Displays Traffic Class field in the IPv6 header.
ICMP Type	Displays ICMP type field in the icmp header.
ICMP Code	Displays ICMP code field in the icmp header.
TCP-syn	Displays the SYN flag in the TCP header.
TCP-ack	Displays the ACK flag in the TCP header.
Match action	When criteria matches, displays drop or forward packet.
Next Hop	In case match action is forward, indicates destination of the matched packet.
Dropped pkts	Indicating number of matched dropped packets.
Forwarded pkts	Indicating number of matched forwarded packets.

## ipv6-filter

### Syntax

**ipv6-filter** [**entry** *entry-id*]

### Context

**[Tree]** (show>system>security>mgmt-access-filter ipv6-filter)

### Full Context

show system security management-access-filter ipv6-filter

### Description

This command displays management-access IPv6 filters and only applies to the 7750 SR and 7950 XRS.

### Parameters

***entry-id***

Specifies the IPv6 filter entry ID to display.

**Values** 1 to 9999

## Platforms

All

## Output

The following output is an example of MAF IPv6 filter information, and the table outlined in **show>system>security>mgmt-access-filter ip-filter** describes the output fields.

### Output Example

```
*A:Dut-C# show system security management-access-filter ipv6-filter entry 1
=====
IPv6 Management Access Filter
=====
filter type      : ipv6
Def. Action      : permit
Admin Status     : enabled (no shutdown)
-----
Entry            : 1
Description      : (Not Specified)
Src IP           : ipv6-prefix-list "MAF-MATCH-V6-ALLOW"
Flow label       : undefined
Src interface    : undefined
Dest port        : undefined
Next-header      : undefined
Router           : undefined
Action           : permit
Log              : enabled
Matches          : 0
=====
*A:Dut-C# s
```

## ipv6-filter

### Syntax

**ipv6-filter** [**entry** *entry-id*]

### Context

[\[Tree\]](#) (clear>cpm-filter ipv6-filter)

### Full Context

clear cpm-filter ipv6-filter

### Description

This command clears IPv6 filter statistics.

### Parameters

***entry-id***

Specifies a particular CPM IP filter entry.

**Values** 1 to 2048

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## ipv6-filter

### Syntax

**ipv6-filter** *ipv6-filter-id*

### Context

[\[Tree\]](#) (tools>perform>filter ipv6-filter)

### Full Context

tools perform filter ipv6-filter

### Description

Commands in this context perform IPv6 filter operations.

### Parameters

#### ***ip-v6filter-id***

Specifies a particular IPv6 filter ID or filter name.

**Values** *filter-id* | *filter-name*

#### ***filter-id***

Specifies the IPv6 filter ID.

**Values** 1 to 65535

#### ***filter-name***

Specifies name of the IPv6 filter, up to 64 characters.

### Platforms

All

## 12.58 ipv6-prefix

## ipv6-prefix

### Syntax

**ipv6-prefix** [hunt | detail] [**rd** *rd*] [**prefix** *ipv6-prefix/ipv6-prefix-length*] [**community** *comm-id*] [**tag** *tag*] [**next-hop** *next-hop*] [**aspath-regex** *reg-exp*]

## Context

[\[Tree\]](#) (show>router>bgp>routes>evpn ipv6-prefix)

## Full Context

show router bgp routes evpn ipv6-prefix

## Description

This command displays BGP-EVPN IPv6 prefix routes.

## Parameters

### hunt

Displays entries for the specified route.

### detail

Displays detailed information.

### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### ipv6-prefix/ipv6-prefix-length

Specifies the IPv6 prefix and length.

**Values**

ipv6-prefix:	x:x:x:x:x:x:x (eight 16-bit pieces)
ipv6-prefix-length:	0 to 128

### comm-id

Specifies the community ID, up to 256 characters.

### tag

Specifies the IPv6 prefix route tag.

**Values** 0 to 4294967295 | MAX-ET

### next-hop

Specifies the IPv4 or IPv6 BGP next-hop address.

**Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

***reg-exp***

Displays routes matching the specified regular expression, up to 80 characters.

**Platforms**

All

## 12.59 ipv6-prefix-list

### ipv6-prefix-list

**Syntax**

**ipv6-prefix-list**

**ipv6-prefix-list** *prefix-list-name* [**association**]

**Context**

**[Tree]** (show>qos>match-list ipv6-prefix-list)

**Full Context**

show qos match-list ipv6-prefix-list

**Description**

Displays the list of configured IPv6 QoS prefix lists or the details of a specific IPv6 QoS prefix list together with the network QoS policies in which it is used and the entry number within that policy.

**Parameters**

***prefix-list-name***

Specifies an IPv6 prefix list which contains IPv6 address prefixes to be matched.

**Values** A string of up to 32 characters of printable ASCII characters. If special characters are used, the string must be enclosed within double quotes.

**association**

Displays the QoS policy and entry number in which the specified prefix list is used.

**Platforms**

All

**Output**

The following output is an example of ipv6-prefix-list information

**Output Example**

```
*A:PE# show qos match-list ipv6-prefix-list
```

```
=====
QoS Match IPv6 Prefix List
=====
Prefix List Name          Description          Num Prefixes
-----
ipv6list1                 1
ipv6list2                 1
-----
No. of Prefix-List: 2
=====
*A:PE#

*A:PE# show qos match-list ip-prefix-list "ipv6list1"

=====
QoS Match IPv6 Prefix List
=====
Prefix Name      : ipv6list1
Description      : (Not Specified)
-----
IP Prefixes
-----
2001:db8::/32
-----
No. of Prefixes : 1
-----
*A:PE#

*A:PE# show qos match-list ipv6-prefix-list "ipv6list1" association

=====
QoS Match IPv6 Prefix List
=====
Prefix Name      : ipv6list1
Description      : (Not Specified)
-----
IPv6 Prefixes
-----
2001:db8::/32
-----
No. of Prefixes : 1
-----

-----
Association
-----
QoS Policy ID          Criteria Entry
-----
10                      (sap-ingress)   10              (source-ip)
-----
*A:PE#
```

## ipv6-prefix-list

### Syntax

**ipv6-prefix-list** [*prefix-list-name*]

**ipv6-prefix-list** *prefix-list-name* **references**

## Context

[\[Tree\]](#) (show>filter>match-list ipv6-prefix-list)

## Full Context

```
show filter match-list ipv6-prefix-list
```

## Description

This command displays IPv6 prefixes information for match criteria in IPv6 ACL and CPM filter policies.

## Parameters

### *prefix-list-name*

A string of up to 32 characters of printable ASCII characters. If special characters are used, the string must be enclosed within double quotes.

### references

Displays the filter policies, policy entries and source/destination IPv6 match type per entry referring to this match list.

## Platforms

All

## 12.60 isa

isa

## Syntax

```
isa
```

## Context

[\[Tree\]](#) (tools>dump>nat isa)

## Full Context

```
tools dump nat isa
```

## Description

This command enables the dump tools for NAT ISA.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

isa

### Syntax

isa

### Context

[\[Tree\]](#) (clear isa)

### Full Context

clear isa

### Description

Commands in this context clear ISA commands.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

isa

### Syntax

isa

### Context

[\[Tree\]](#) (clear>nat isa)

### Full Context

clear nat isa

### Description

Commands in this context clear ISA NAT commands.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

isa

### Syntax

isa



## Context

[\[Tree\]](#) (clear>wlan-gw isa)

## Full Context

clear wlan-gw isa

## Description

Commands in this context clear WLAN gateway ISA commands.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

isa

## Syntax

**isa** *video-group-id* [**esa-vm** *vapp-id* ] [**lifetime-peaks**] [**hour-peaks**]

**isa** *video-group-id* [**md** *mda-id* ] [**lifetime-peaks**] [**hour-peaks**]

## Context

[\[Tree\]](#) (clear>video>statistics isa)

## Full Context

clear video statistics isa

## Description

This command clears statistics for a particular ISA video group.

## Parameters

### *video-group-id*

statistics for a particular ISA video group a video group ID.

**Values** 1 to 4

### *vapp-id*

Specifies the video ISA Group Virtual Application ID

**Values** <esa-id>/<vm-id>

esa-id 1 to 16

vm-id 1 to 4

### *mda-id*

Specifies the card/slot identifying a provisioned ISA

**Values**

*mda-id:* slot/mda

slot: 1 to 10 (depending on the chassis model)

mda: 1 to 2

**lifetime-peaks**

Clears the lifetime peaks

**hour-peaks**

Clears the last and current hour peaks

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s

isa

**Syntax**

isa

**Context**

[\[Tree\]](#) (show isa)

**Full Context**

show isa

**Description**

Commands in this context display ISA information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

isa

**Syntax**

isa

**Context**

[\[Tree\]](#) (tools>dump>wlan-gw isa)

**Full Context**

tools dump wlan-gw isa

### Description

Commands in this context dump tools for Wireless LAN Gateway ISA.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.61 isa-collector

### isa-collector

#### Syntax

**isa-collector**

#### Context

[\[Tree\]](#) (show>app-assure>group>cflowd>dir-exp isa-collector)

#### Full Context

show application-assurance group cflowd direct-export isa-collector

#### Description

This command displays cflowd collector assignments to ISAs.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.62 isa-filter

### isa-filter

#### Syntax

**isa-filter** *name* [all]

#### Context

[\[Tree\]](#) (clear>subscr-mgmt isa-filter)

#### Full Context

clear subscriber-mgmt isa-filter

## Description

This command resets the entry hit counts associated with the specified **isa-filter** to zero.

## Parameters

### *name*

Specifies the name of the ISA filter, up to 32 characters.

### *all*

Clears all ISA filter entries.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## isa-filter

## Syntax

**isa-filter**

**isa-filter** *name*

**isa-filter** *name* **associations**

**isa-filter** *name* **ipv4**

**isa-filter** *name* **ipv6**

## Context

[\[Tree\]](#) (show>subscr-mgmt isa-filter)

## Full Context

show subscriber-mgmt isa-filter

## Description

This command displays ISA filter information.

## Parameters

### *name*

Specifies the ISA filter name, up to 32 characters.

### **associations**

Displays associated information about the specified ISA filter name.

### **ipv4**

Display IPv4 ISA filter information for the specified ISA filter name.

### **ipv6**

Display IPv6 ISA filter information for the specified ISA filter name.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 12.63 isa-policer

isa-policer

### Syntax

**isa-policer** *policer-name*

**isa-policer** *policer-name* **associations**

**isa-policer**

### Context

[\[Tree\]](#) (show>subscr-mgmt isa-policer)

### Full Context

show subscriber-mgmt isa-policer

### Description

This command displays ISA policer information.

### Parameters

***policer-name***

Specifies the ISA policer name, up to 32 characters.

**associations**

Displays associated information about the specified ISA policer name.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 12.64 isa-radius-policy

isa-radius-policy

### Syntax

**isa-radius-policy** *policy-name*

**isa-radius-policy** *policy-name* **associations**

## Context

[\[Tree\]](#) (show>aaa isa-radius-policy)

## Full Context

show aaa isa-radius-policy

## Description

This command displays ISA RADIUS policy information.

## Parameters

### *policy-name*

Displays information about the specified ISA RADIUS policy.

### *associations*

Displays the information associated with the ISA RADIUS server policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of AAA ISA RADIUS policy information.

### Output Example

```
*B:asd-tr0610-dr421# show aaa isa-radius-policy "ZiggoAAA_DRP_ISAPlcy"
=====
Status for ISA RADIUS server policy "ZiggoAAA_DRP_ISAPlcy"
=====
Server 1, group 1, member 1
-----
Purposes Up                : accounting authentication
Source IP address          : 172.18.128.33
Acct Tx Requests           : 2469931
Acct Tx Retries            : 320
Acct Tx Timeouts           : 160
Acct Rx Replies            : 2469471
Auth Tx Requests           : 16417061
Auth Tx Retries            : 7169
Auth Tx Timeouts           : 2922
Auth Rx Replies            : 16406973
CoA Rx Requests            : 0
```

[Table 236: Subscriber ISA RADIUS Policy Field Descriptions](#) describes subscriber ISA RADIUS policy output fields.

*Table 236: Subscriber ISA RADIUS Policy Field Descriptions*

Label	Description
Purposes Up	The RADIUS services that are up and running, and fully operational for this server

Label	Description
Source IP address	The IP address of the RADIUS server
Acct Tx Requests	The number of RADIUS transaction requests transmitted
Acct TX Retries	The number of RADIUS transaction request retries
Acct TX Timeouts	The number of RADIUS transaction requests that have timed out
Acct RX Replies	The number of RADIUS transaction responses received
Auth Tx Requests	The number of authentication requests transmitted
Auth Tx Retries	The number of authentication request retries
Auth Tx Timeouts	The number of RADIUS authentication requests that have timed out for the policy
CoA RX Requests	The number of Change-of-Authorization message responses received

## isa-radius-policy

### Syntax

**isa-radius-policy** *policy-name* **statistics**

### Context

[\[Tree\]](#) (clear>aaa isa-radius-policy)

### Full Context

clear aaa isa-radius-policy

### Description

This command clears ISA RADIUS policy data.

### Parameters

***policy-name***

Specifies the ISA RADIUS policy name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.65 isa-service-chaining

### isa-service-chaining

#### Syntax

**isa-service-chaining vas-filter** *name*

#### Context

[\[Tree\]](#) (clear>subscr-mgmt isa-service-chaining)

#### Full Context

clear subscriber-mgmt isa-service-chaining

#### Description

This command clears all L2-aware NAT flows of all hosts associated with the VAS filter and can be used if all flows need re-evaluation against a modified set of matching criteria.

#### Parameters

*name*

Specifies the filter name, up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### isa-service-chaining

#### Syntax

**isa-service-chaining**

#### Context

[\[Tree\]](#) (show>subscr-mgmt isa-service-chaining)

#### Full Context

show subscriber-mgmt isa-service-chaining

#### Description

Commands in this context display ISA service chaining information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR



## isa-service-chaining

### Syntax

**isa-service-chaining**

### Context

[\[Tree\]](#) (show>router isa-service-chaining)

### Full Context

show router isa-service-chaining

### Description

This command displays information related to service chaining (for ESM hosts with L2-aware NAT) at the router level.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of ISA service chaining information.

### Output Example

```
show router isa-service-chaining
=====
ISA Service Chaining - Router "Base"
=====
VXLAN Tep range      : 1.2.3.4 - 1.2.3.8
NAT Groups           : 2
=====
```

Table 237: ISA Service Chaining

Label	Description
VXLAN Tep range	The VXLAN Tep Information (VTEP) range
NAT Groups	The NAT ISA group used in a virtual router for Service Chaining.

## 12.66 isa-subnets

### isa-subnets

#### Syntax

**isa-subnets** [**detail**]

**isa-subnets** [**detail**] **interface** *interface-name*

**isa-subnets** **prefix** *ipv6-address/prefix-length*

#### Context

[\[Tree\]](#) (show>router>wlan-gw isa-subnets)

#### Full Context

show router wlan-gw isa-subnets

#### Description

This command outputs all the prefixes in use by the WLAN GW pool manager.

#### Parameters

##### **detail**

Displays detailed information for each prefix.

##### ***interface-name***

Displays only the prefixes associated with this subscriber interface.

##### ***ipv6-address/prefix-length***

Displays details of a specific IPv6 address and prefix.

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of WLAN-GW ISA subnet information.

#### Output Example

```
system# show router wlan-gw isa-subnets
=====
ISA Subnets
=====
Prefix                               MDA      Family  Usage
-----
2001:db8:0:1/48                       3/1      dhcpv6  0%
2001:db8:1::/48                       3/2      dhcpv6  0%
2001:db8:2::/48                       4/1      dhcpv6  0%
2001:db8:3::/48                       4/2      dhcpv6  0%
2001:db8:4::/48                       5/1      dhcpv6  0%
```

```
2001:db8:5::/48          5/2    dhcpv6  0%
2001:db8:6::/48          3/1    slaac   0%
2001:db8:7::/48          3/2    slaac   0%
2001:db8:8::/48          4/1    slaac   0%
2001:db8:9::/48          4/2    slaac   0%
2001:db8:a::/48          5/1    slaac   0%
2001:db8:b::/48          5/2    slaac   0%
-----
No. of ISA subnets: 12
=====

*A:Dut-C# show router wlan-gw isa-subnets prefix 2001:db8::/48
=====
ISA Subnet Prefix       : 2001:db8::/48
-----
Group Id                : 1
Member Id               : 1
MDA                     : 3/1
Family                  : dhcpv6
Subscriber Interface    : wlan-gw-sub-itf
Pool Is Old             : No
Usage Level             : 0%
Remaining Lease Time    : 0d 23:50:54
DHCPv6 Options          : (length=512)
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
                        : 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
=====
```

## isa-subnets

### Syntax

**isa-subnets all**

**isa-subnets interface** *ip-int-name*

**isa-subnets prefix** *ipv6-address/prefix-length*

### Context

[\[Tree\]](#) (clear>router>wlan-gw isa-subnets)

### Full Context

clear router wlan-gw isa-subnets

### Description

This command clears specific subnets from the pool-manager. Associated UE's is removed from the system.

When clearing the last subnet on an ISA the pool-manager will automatically allocate a new subnet with allocation-level 0%.

### Parameters

**all**

Clears all the isa-subnets.

***ip-int-name***

Clears all the isa-subnets of a specific subscriber-interface.

***ipv6-address/prefix-length***

Clears a specific IPv6 address and prefix length.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 12.67 isid-route-target

## isid-route-target

### Syntax

**isid-route-target**

### Context

[\[Tree\]](#) (show>service>id>bgp-evpn isid-route-target)

## Full Context

```
show service id bgp-evpn isid-route-target
```

## Description

This command displays a list of the auto-derived or configured ISID-based route-targets per B-VPLS service. The entries show the ISID ranges and association to either an auto-rt or an actual configured route-target.

The auto-rt display format is: <2-byte-as-number>:<4-byte-value>, where: 4-byte-value = 0x30+ISID.

## Platforms

All

## Output

### Output Example

```
*A:PE-2# show service id 10 bgp-evpn isid-route-target
=====
EVPN ISID RT Information
=====
Start      End      RT type   Route Target      Last Chgd
Range      Range
-----
11         11       auto      N/A                10/03/2016 16:19:46
-----
Number of Entries: 1
=====
```

## 12.68 isid-using

### isid-using

## Syntax

```
isid-using [ISID]
```

## Context

[\[Tree\]](#) (show>service isid-using)

## Full Context

```
show service isid-using
```

## Description

This command displays services using an ISID.

## Parameters

### ISID

Specifies a 24 bit (0 to 16777215) service instance identifier for this service. As part of the Provider Backbone Bridging frames, it is used at the destination PE as a demultiplexor field.

**Values** 0 to 16777215

## Platforms

All

## Output

The following output is an example of services using ISID information.

### Output Example

```
*A:SetupCLI# show service isid-using
=====
Services
=====
SvcId      ISID      Type      b-Vpls    Adm  Opr  SvcMtu  CustId
-----
2001       122       i-VPLS 2002     Up   Down 1514    1
2005       2005      i-mVP* 2004     Down Down 1500    1
-----
Matching Services : 2
-----
*A:SetupCLI#

A:term17# show service isid-using
=====
Services
=====
SvcId      ISID      Type      b-Vpls    Adm  Opr  SvcMtu  CustId
-----
2000       0         b-VPLS 0         Up   Up   1530    1
2110       123       i-VPLS 2000     Up   Up   1514    1
2299       0         b-VPLS 0         Down Down 1514    1
-----
Matching Services : 3
-----
A:term17#
```

## 12.69 isis

### isis

## Syntax

**isis** [*isis-instance*]

## Context

**[Tree]** (clear>router isis)

## Full Context

clear router isis

## Description

Commands in this context clear and reset IS-IS protocol entities.

## Parameters

### *isis-instance*

Specifies the IS-IS instance.

**Values** 0 to 127

### *level*

Specifies the IS-IS level.

**Values** 1, 2

## Platforms

All

## Output

The following outputs are examples of IS-IS traffic engineering database information.

### Output Example

```
A:Dut-B# tools dump router te-database isis
=====
Rtr: 0100.1001.0002  Addr: 10.10.10.2          ABR          ISIS/0/L1
Rtr: 0100.1001.0003  Addr: 10.10.10.3          ABR          ISIS/0/L1
AdvRtr: 0100.1001.0002  Nghb: 0100.1001.0003.01  Status: OK   ISIS/0/L1
  LocIp/Id 100.100.100.1 /0
AdvRtr: 0100.1001.0003  Nghb: 0100.1001.0003.01  Status: OK   ISIS/0/L1
  LocIp/Id 100.100.100.2 /0
Net: 0100.1001.0003.01  Status: OK   ISIS/0/L1
  AttRtr: 0100.1001.0002  Status: OK   ISIS/0/L1
  AttRtr: 0100.1001.0003  Status: OK   ISIS/0/L1
=====
Rtr: 0100.1001.0002  Addr: 10.10.10.2          ABR          ISIS/0/L2
=====
A:Dut-B#

A:Dut-B# tools dump router te-database detail isis
=====
Rtr: 0100.1001.0002  Addr: 10.10.10.2          ABR          ISIS/0/L1
  Num SR LblRanges: 1      [SR-cap]
  SR LblRange Start: 18432  Range: 505856
  Pfx: 10.10.10.2/32      Metric: 0
  Pfx: 100.100.100.0/30   Metric: 10
Rtr: 0100.1001.0003  Addr: 10.10.10.3          ABR          ISIS/0/L1
  Num SR LblRanges: 1      [SR-cap]
  SR LblRange Start: 18432  Range: 505856
```

```

Pfx: 10.10.10.3/32 Metric: 0
Pfx: 100.100.100.0/30 Metric: 10
-----
AdvRtr: 0100.1001.0002 Nghb: 0100.1001.0003.01 ISIS/0/L1
Local Addr: 100.100.100.1 Local Id: 0 If Index: 2
Remote Addr: 0.0.0.0 Remote Id: 0 Link Type: TRANS
status: OK
IGP Metric: 10
-----
AdvRtr: 0100.1001.0003 Nghb: 0100.1001.0003.01 ISIS/0/L1
Local Addr: 100.100.100.2 Local Id: 0 If Index: 0
Remote Addr: 0.0.0.0 Remote Id: 0 Link Type: TRANS
status: OK
IGP Metric: 10
-----
Net: 0100.1001.0003.01 ISIS/0/L1
AttRtr: 0100.1001.0002 ISIS/0/L1
AttRtr: 0100.1001.0003 ISIS/0/L1
=====
Rtr: 0100.1001.0002 Addr: 10.10.10.2 ABR ISIS/0/L2
Num SR LblRanges: 1 [SR-cap]
SR LblRange Start: 18432 Range: 505856
Pfx: 10.10.10.2/32 Metric: 0
Pfx: 10.10.10.3/32 Metric: 10
Pfx: 100.100.100.0/30 Metric: 10
=====
A:Dut-B#
    
```

## isis

### Syntax

**isis** [*instance isis-instance*] [*level level*]

### Context

[\[Tree\]](#) (tools>dump>router>te-database isis)

### Full Context

tools dump router te-database isis

### Description

Commands in this context dump the IS-IS traffic engineering database.

### Parameters

#### *isis-instance*

Specifies the IS-IS instance.

**Values** 0 to 127

#### *level*

Specifies the IS-IS level.

**Values** 1, 2



## Platforms

All

## Output

The following outputs are examples of IS-IS traffic engineering database information.

### Output Example

```
A:Dut-B# tools dump router te-database isis
=====
Rtr: 0100.1001.0002  Addr: 10.10.10.2      ABR          ISIS/0/L1
Rtr: 0100.1001.0003  Addr: 10.10.10.3      ABR          ISIS/0/L1
AdvRtr: 0100.1001.0002  Nghb: 0100.1001.0003.01  ISIS/0/L1
      LocIp/Id 100.100.100.1 /0          Status: OK
AdvRtr: 0100.1001.0003  Nghb: 0100.1001.0003.01  ISIS/0/L1
      LocIp/Id 100.100.100.2 /0          Status: OK
Net: 0100.1001.0003.01
      AttRtr: 0100.1001.0002          ISIS/0/L1
      AttRtr: 0100.1001.0003          ISIS/0/L1
=====
Rtr: 0100.1001.0002  Addr: 10.10.10.2      ABR          ISIS/0/L2
=====
A:Dut-B#

A:Dut-B# tools dump router te-database detail isis
=====
Rtr: 0100.1001.0002  Addr: 10.10.10.2      ABR          ISIS/0/L1
      Num SR LblRanges: 1      [SR-cap]
      SR LblRange Start: 18432      Range: 505856
      Pfx: 10.10.10.2/32          Metric: 0
      Pfx: 100.100.100.0/30      Metric: 10
Rtr: 0100.1001.0003  Addr: 10.10.10.3      ABR          ISIS/0/L1
      Num SR LblRanges: 1      [SR-cap]
      SR LblRange Start: 18432      Range: 505856
      Pfx: 10.10.10.3/32          Metric: 0
      Pfx: 100.100.100.0/30      Metric: 10
-----
AdvRtr: 0100.1001.0002  Nghb: 0100.1001.0003.01  ISIS/0/L1
      Local Addr: 100.100.100.1      Local Id: 0      If Index: 2
      Remote Addr: 0.0.0.0          Remote Id: 0      Link Type: TRANS
      status: OK
      IGP Metric: 10
-----
AdvRtr: 0100.1001.0003  Nghb: 0100.1001.0003.01  ISIS/0/L1
      Local Addr: 100.100.100.2      Local Id: 0      If Index: 0
      Remote Addr: 0.0.0.0          Remote Id: 0      Link Type: TRANS
      status: OK
      IGP Metric: 10
-----
Net: 0100.1001.0003.01
      AttRtr: 0100.1001.0002          ISIS/0/L1
      AttRtr: 0100.1001.0003          ISIS/0/L1
=====
Rtr: 0100.1001.0002  Addr: 10.10.10.2      ABR          ISIS/0/L2
      Num SR LblRanges: 1      [SR-cap]
      SR LblRange Start: 18432      Range: 505856
      Pfx: 10.10.10.2/32          Metric: 0
      Pfx: 10.10.10.3/32          Metric: 10
      Pfx: 100.100.100.0/30      Metric: 10
=====
A:Dut-B#
```

## isis

### Syntax

**isis** [*isis-instance*]

### Context

[\[Tree\]](#) (show>router isis)

### Full Context

show router isis

### Description

This command displays information for a specified IS-IS instance.

### Parameters

***isis-instance***

Specifies the instance ID for an IS-IS instance.

**Values** 0 to 127

**Default** 0

### Platforms

All

## isis

### Syntax

**isis**

### Context

[\[Tree\]](#) (tools>dump>router isis)

### Full Context

tools dump router isis

### Description

Commands in this context dump tools for IS-IS.

### Parameters

***isis-instance***

Specifies the IS-IS protocol instance within the router instance.

**Values** 0 to 127

## Platforms

All

isis

## Syntax

isis

## Context

[\[Tree\]](#) (tools>perform>router isis)

## Full Context

tools perform router isis

## Description

This command enables the tools to perform certain IS-IS tasks.

## Parameters

*isis-instance*

Specifies the IS-IS protocol instance within the router instance.

**Values** 0 to 127

## Platforms

All

isis

## Syntax

isis [*isis-instance*]

## Context

[\[Tree\]](#) (monitor>router isis)

## Full Context

monitor router isis

## Description

This command monitors commands for the IS-IS instance.

## Parameters

### *isis-instance*

Specifies the IS-IS protocol instance within the router instance.

**Values** 0 to 127

## Platforms

All

## 12.70 issu-post-process

### issu-post-process

## Syntax

**issu-post-process**

## Context

[\[Tree\]](#) (tools>perform>redundancy issu-post-process)

## Full Context

tools perform redundancy issu-post-process

## Description

This command allows requests for new LSPs.

## Platforms

All

## 13 k Commands

### 13.1 keychain

#### keychain

##### Syntax

**keychain** [*key-chain*] [**detail**]

##### Context

[\[Tree\]](#) (show>system>security keychain)

##### Full Context

show system security keychain

##### Description

This command displays keychain information.

##### Parameters

###### *key-chain*

Specifies the keychain name to display.

###### **detail**

Displays detailed keychain information.

##### Platforms

All

##### Output

The following output is an example of keychain information.

##### Output Example

```
*A:ALA-A# show system security keychain test
=====
Key chain:test
=====
TCP-Option number send      : 254                Admin state   : Up
TCP-Option number receive   : 254                Oper state    : Up
=====
*A:ALA-A#
*A:ALA-A# show system security keychain test detail
=====
```

```
Key chain:test
=====
TCP-Option number send      : 254                Admin state   : Up
TCP-Option number receive   : 254                Oper state    : Up
=====
Key entries for key chain: test
=====
Id          : 0
Direction   : send-receive      Algorithm     : hmac-sha-1-96
Admin State : Up                 Valid        : Yes
Active      : Yes                Tolerance    : 300
Begin Time  : 2007/02/15 18:28:37 Begin Time (UTC) : 2007/02/15 17:28:37
End Time    : N/A                End Time (UTC)  : N/A
=====
Id          : 1
Direction   : send-receive      Algorithm     : aes-128-cmac-96
Admin State : Up                 Valid        : Yes
Active      : No                 Tolerance    : 300
Begin Time  : 2007/02/15 18:27:57 Begin Time (UTC) : 2007/02/15 17:27:57
End Time    : 2007/02/15 18:28:13 End Time (UTC)  : 2007/02/15 17:28:13
=====
Id          : 2
Direction   : send-receive      Algorithm     : aes-128-cmac-96
Admin State : Up                 Valid        : Yes
Active      : No                 Tolerance    : 500
Begin Time  : 2007/02/15 18:28:13 Begin Time (UTC) : 2007/02/15 17:28:13
End Time    : 2007/02/15 18:28:37 End Time (UTC)  : 2007/02/15 17:28:37
=====
*A:ALA-A#
```

## 14 I Commands

### 14.1 I2-aware

#### I2-aware

##### Syntax

**I2-aware create subscriber** *sub-ident-string* **ip** *ip-address* **protocol** {**tcp** | **udp**} [**port** *port*] **lifetime** *lifetime* [**outside-ip** *ip-address*] [**outside-port** *port*] [**nat-policy** *policy-name*]

**I2-aware delete subscriber** *sub-ident-string* **ip** *ip-address* **protocol** {**tcp** | **udp**} **port** *port* [**nat-policy** *policy-name*]

**I2-aware modify subscriber** *sub-ident-string* **ip** *ip-address* **protocol** {**tcp** | **udp**} **port** *port* **lifetime** *lifetime* [**nat-policy** *policy-name*]

##### Context

[\[Tree\]](#) (tools>perform>nat>port-forwarding-action I2-aware)

##### Full Context

tools perform nat port-forwarding-action I2-aware

##### Description

This command enables Layer-2-Aware NAT port forwarding action.

##### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### 14.2 I2-aware-blocks

#### I2-aware-blocks

##### Syntax

**I2-aware-blocks** [**outside-ip-prefix** *ip-prefix/length*] [**outside-port** [*1..65535*]] [**pool** *pool-name*]

##### Context

[\[Tree\]](#) (show>router>nat I2-aware-blocks)

## Full Context

```
show router nat l2-aware-blocks
```

## Description

This command displays Layer 2 aware NAT blocks.

## Parameters

### *ip-prefix*

Specifies the IP prefix.

**Values** a.b.c.d (host bits must be 0)

### *length*

Specifies the IP prefix length.

**Values** 1 to 32

### *pool-name*

Specifies the pool name up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of this command.

### Output Example

```
show router nat l2-aware-blocks
=====
Layer-2-Aware NAT blocks for Base
=====
10.81.0.0 [32..33]
Pool : MyPool
Policy : outPolicy
Started : 2010/02/04 16:24:55
Subscriber ID : Sub001
10.81.0.0 [34..35]
Pool : MyPool
Policy : outPolicy
Started : 2010/02/04 16:25:24
Subscriber ID : Sub003
10.81.0.203 [32..41]
Pool : MyPool2
Policy : outPolicy2
Started: 2010/02/04 16:25:21
Subscriber ID : Sub002
-----
Number of blocks: 3
=====
```



## 14.3 I2-aware-hosts

### I2-aware-hosts

#### Syntax

**I2-aware-hosts** [**outside-router** *router-instance*] [**outside-ip** *outside-ip-address*] [**inside-ip-prefix** *ip-prefix/mask*] [**vas-filter** *vas-filter-name*]

#### Context

[\[Tree\]](#) (show>service>nat I2-aware-hosts)

#### Full Context

show service nat I2-aware-hosts

#### Description

This command displays layer-2 aware NAT hosts.

#### Parameters

##### ***nat-policy-name***

Specifies the NAT policy name, up to 32 characters.

##### ***nat-group-id***

Specifies the NAT group ID.

**Values** 1 to 4

##### ***router-instance***

Specifies the router instance.

<b>Values</b>	router-name:	Base , management
	service-id:	1 to 2147483647
	svc-name:	A string up to 64 characters in length.

##### ***outside-ip-address***

Specifies the outside IP address.

**Values** a.b.c.d

##### ***sub-ident***

Specifies the identifier, up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of this command.

### Output Example

```
show service nat l2-aware-hosts
=====
Layer-2-Aware NAT hosts
=====
Inside IP Out-Router Outside IP Subscriber
-----
10.0.0.100 Base 10.81.0.0 Sub001
10.0.0.102 Base 10.81.0.0 Sub001
10.0.0.101 Base 10.81.0.203 Sub002
10.0.0.103 Base 10.81.0.0 Sub003
-----
No. of hosts: 4
=====
```

## 14.4 l2-aware-sub

### l2-aware-sub

#### Syntax

**l2-aware-sub** *sub-ident-string*

**l2-aware-sub** *sub-ident-string* **firewall-statistics**

#### Context

[\[Tree\]](#) (clear>nat l2-aware-sub)

#### Full Context

clear nat l2-aware-sub

#### Description

This command clears NAT mappings for L2-Aware subscribers.

#### Parameters

##### ***sub-ident-string***

Specifies the subscriber identification string, up to 64 characters.

##### **firewall-statistics**

Clears only the firewall counters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 14.5 I2-aware-subscribers

### I2-aware-subscribers

#### Syntax

**I2-aware-subscribers subscriber sub-ident**

**I2-aware-subscribers [nat-policy nat-policy-name] [nat-group nat-group-id] [member [1..255]] [outside-router router-instance] [outside-ip outside-ip-address] [firewall-policy policy-name]**

#### Context

[\[Tree\]](#) (show>service>nat I2-aware-subscribers)

#### Full Context

show service nat I2-aware-subscribers

#### Description

This command displays layer-2 aware NAT subscribers.

#### Parameters

##### **nat-policy-name**

Specifies the NAT policy name, up to 32 characters.

##### **nat-group-id**

Specifies the NAT group ID.

**Values** 1 to 4

##### **router-instance**

Specifies the router instance.

<b>Values</b>	router-name:	Base, management
	service-id:	1 to 2147483647
	svc-name:	A string up to 64 characters.

##### **outside-ip-address**

Specifies the outside IP address.

**Values** a.b.c.d

##### **sub-ident**

Specifies the identifier, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of this command.

### Output Example

```
show service nat l2-aware-subscribers
=====
Layer-2-Aware NAT subscribers
=====
Subscriber Policy Group/Member
Outside IP Router Ports
-----
Sub001 outPolicy 1/1
10.81.0.0 Base 32-33
Sub002 outPolicy2 1/1
10.81.0.203 Base 32-41
Sub003 outPolicy 1/1
10.81.0.0 Base 34-35
-----
No. of subscribers: 3
=====

show service nat l2-aware-subscribers subscriber "Sub881"
=====
Layer-2-Aware NAT subscriber Sub001
=====
Policy : outPolicy
ISA NAT group : 1
ISA NAT group member : 1
Outside router : Base
Outside IP : 10.81.0.0
ICMP Port usage (%) : < 1
ICMP Port usage high : false
UDP Port usage (%) : < 1
UDP Port usage high : false
TCP Port usage (%) : < 1
TCP Port usage high : false
Session usage (%) : < 1
Session usage high : false
Number of sessions : 0
Number of reserved sessions : 0
Ports : 32-33
=====
```

## 14.6 I2-route-table

### I2-route-table

#### Syntax

**I2-route-table** [detail] [bgp-ad] [multi-homing] [bgp-vpls] [bgp-vpws] [all-routes]

## Context

[\[Tree\]](#) (show>service l2-route-table)

## Full Context

show service l2-route-table

## Description

This command displays Layer 2 route table information.

## Parameters

### detail

Displays detailed information.

### bgp-ad

Displays BGP AD related information.

### multi-homing

Displays multihoming related information.

### bgp-vpls

Displays BGP VPLS related information.

### bgp-vpws

Displays BGP VPWS related information.

### all-routes

Displays active or inactive routes.

## Platforms

All

## Output

Use the following command to display Layer 2 route table information.

### Output Example

```
show service l2-route-table
```

```
=====  
Services: L2 Route Information - Summary  
=====
```

```
Svc Id L2-Routes (RD-Prefix) Next Hop Origin  
Sdp Bind Id PW Temp Id  
-----
```

```
1000 *192.0.2.3:60002-192.0.2.3 192.0.2.3 BGP-L2  
32766:4294967293 1  
-----
```

```
No. of L2 Route Entries: 1  
=====
```

```
=====  
Services: L2 Multi-Homing Route Information - Summary  
=====
```

```
Svc Id L2-Routes (RD-Prefix) Next Hop SiteId State DF
-----
-----
No. of L2 Multi-Homing Route Entries: 0
=====
Services: L2 Bgp-Vpls Route Information - Summary
=====
Svc Id L2-Routes (RD) Next Hop Ve-Id
Sdp Bind Id PW Temp Id
-----
1001 *192.0.2.3:60003 192.0.2.3 3
32765:4294967292 1
-----
No. of L2 Bgp-Vpls Route Entries: 1
=====
Services: L2 Bgp-Vpws Route Information - Summary
=====
Svc Id L2-Routes (RD) Next Hop Ve-Id
Sdp Bind Id PW Temp Id
-----
1002 *192.0.2.3:60004 192.0.2.3 3
32764:4294967291 1
-----
No. of L2 Bgp-Vpws Route Entries: 1
=====
```

```
show service l2-route-table bgp-vpls
```

```
=====
Services: L2 Bgp-Vpls Route Information - Summary
=====
Svc Id L2-Routes (RD) Next Hop Ve-Id
Sdp Bind Id PW Temp Id
-----
1001 *192.0.2.3:60003 192.0.2.3 3
32765:4294967292 1
-----
No. of L2 Bgp-Vpls Route Entries: 1
=====
```

```
show service l2-route-table detail
```

```
=====
Services: L2 Route Information - Summary
=====
Svc Id      : 1000
Origin     : BGP-L2
PW Temp Id  : 1
RD-Prefix  : *192.0.2.3:60002-192.0.2.3
Next Hop   : 192.0.2.3
Status     : active
Sdp Bind Id : 32766:4294967293
=====
Services: L2 Multi-Homing Route Information - Summary
```

```
=====  
=====  
Services: L2 Bgp-Vpls Route Information - Summary  
=====
```

```
Svc Id      : 1001  
VeId       : 3  
PW Temp Id : 1  
RD         : *192.0.2.3 : 60003  
Next Hop   : 192.0.2.3  
State (D-Bit) : up(0)  
Path MTU   : 1514  
Hash Label Tx : 1  
Hash Label Rx : 1  
Control Word : 0  
Seq Delivery : 0  
DF Bit     : clear  
Status     : active  
Sdp Bind Id : 32765:4294967292  
=====
```

```
=====  
=====  
Services: L2 Bgp-Vpws Route Information - Summary  
=====
```

```
Svc Id      : 1002  
VeId       : 3  
PW Temp Id : 1  
RD         : *192.0.2.3:60004  
Next Hop   : 192.0.2.3  
State (D-Bit) : up(0)  
Path MTU   : 1514  
Hash Label Tx : 1  
Hash Label Rx : 1  
Control Word : 0  
Seq Delivery : 0  
Status     : active  
Tx Status  : active  
CSV       : 0  
Preference : 0  
Sdp Bind Id : 32764:4294967291  
=====
```

## I2-route-table

### Syntax

**I2-route-table** [**detail**] [**bgp-ad**] [**multi-homing**] [**bgp-vpls**] [**bgp-vpws**] [**all-routes**]

### Context

[\[Tree\]](#) (show>service>id I2-route-table)

### Full Context

show service id I2-route-table

### Description

This command displays Layer 2 route table information.

## Parameters

### detail

Displays detailed information.

### bgp-ad

Displays BGP-AD information.

### multi-homing

Displays multi-homing information.

### bgp-vpls

Displays BGP VPLS information.

### bgp-vpws

Displays BGP VPWS information.

### all-routes

Displays active or inactive routes.

## Platforms

All

## Output

Use the following command to display Layer 2 route table information.

### Output Example

```
show service id 1 l2-route-table detail
```

```
=====  
Services L2 Route Information Detail - Service 1  
=====
```

```
-----  
BGP Auto-discovery Information  
-----
```

```
Admin State      : Down  
Vpls Id          : 100.1.200.1:65535  
Prefix           : 10.20.1.3  
-----
```

```
=====  
Services: L2 Route Information - Service 1  
=====
```

```
=====  
Services: L2 Multi-Homing Route Information - Summary  
=====
```

```
=====  
Services: L2 Bgp-Vpls Route Information - Service 1  
=====
```

```
VeId              : 1  
PW Temp Id       : 20  
RD                : *10.20.1.1:1  
Next Hop         : 10.20.1.1
```



```

State (D-Bit) : up(0)
Path MTU      : 0
Hash Label Tx : 1
Hash Label Rx : 1
Control Word  : 0
Seq Delivery  : 0
DF Bit        : clear
Status        : active
Sdp Bind Id   : 32767:4294967295

VeId : 4
PW Temp Id : 20
RD       : *10.20.1.6:1
Next Hop  : 10.20.1.6
State (D-Bit) : up(0)
Path MTU      : 0
Hash Label Tx : 1
Hash Label Rx : 1
Control Word  : 0
Seq Delivery  : 0
DF Bit        : clear
Status        : active
Sdp Bind Id   : 32766:4294967292
=====
Services: L2 Bgp-Vpws Route Information - Service 1
=====
    
```

Table 238: Output Fields: show service id I2-route-table

Label	Description
Admin State	Displays the administrative state of the service Up — Indicates the service is administratively enabled Down — Indicates the service is administratively disabled
Vpls Id	Displays the Virtual Private LAN Service (VPLS) ID
Prefix	Displays information for the specified IP prefix and mask length
Veld	Displays the VEID for BGP-VPLS routes
PW Temp Id	Displays the Pseudowire (PW) temporary ID
RD	Displays information for the route distinguisher
Next Hop	Displays the next hop for the route
State (D-Bit)	Displays the state of the Disable-bit (D-bit). The D-bit ensures packet integrity between the terminal and host packet assembler/disassemblers
Path MTU	Displays the maximum transmission unit (MTU) of the path
Hash Label Tx	Displays the transmit hash label value
Hash Label Rx	Displays the receive hash label value

Label	Description
Control Word	Displays information about the control word. The control word is an optional 4-byte field used in the pseudowire packet
Seq Delivery	Displays information about sequence delivery
DF Bit	Displays information about the DF bit
Status	Displays the status of the service
Sdp Bind Id	Displays information about the SDP binding ID

## 14.7 I2-services

### I2-services

#### Syntax

**I2-services** [**service** *service-id*]

#### Context

[\[Tree\]](#) (show>cflowd I2-services)

#### Full Context

show cflowd I2-services

#### Description

This command displays Layer 2 and SAP/SDP services on which Layer 2 sampling is enabled.

#### Parameters

***service-id***

Specifies the service ID.

**Values** 1 to 2148278386, svc-name: up to 64 characters

#### Platforms

All

#### Output

The following output is an example of cflowd Layer 2 services information.

#### Output Example

```
*A:Dut-B>config>cflowd# show cflowd l2-services
```

```

=====
Cflowd L2-Services
=====
ServiceId      Type      SAP                               Admin  Oper
-----
1              Epipe    1/1/8:1                          Up     Up
-----
No. of SAPs: 1
=====
    
```

## 14.8 I2-vpn

### I2-vpn

#### Syntax

**I2-vpn** [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*] [**brief**] [**I2vpn-type**] [**veid** *veid*] [**offset** *vpls-base-offset*] [**siteid** *site-id*]

**I2-vpn** [**aspath-regex** *reg-exp*] **hunt** [**community** *comm-id*] [**rd** *rd*] [**brief**] [**I2vpn-type**] [**veid** *veid*] [**offset** *vpls-base-offset*] [**siteid** *site-id*]

**I2-vpn** [**detail** | **longer**] [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*] [**I2vpn-type**] [**veid** *veid*] [**offset** *vpls-base-offset*] [**siteid** *site-id*]

#### Context

[\[Tree\]](#) (show>router>bgp>routes I2-vpn)

#### Full Context

show router bgp routes I2-vpn

#### Description

This command displays BGP flow L2-VPN routes.

#### Parameters

##### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

##### **hunt**

Displays entries for the specified route.

##### **comm-id**

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535

- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth:asnum:val-in-mbps**
  - **ext:4300:ovstate**
  - **ext:value1:value2**
  - **flowspec-set:ext-asnum:group-id**where:
  - *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null | no-export | no-export-subconfed | no-advertise | blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### **brief**

Displays the BGP flow L2-VPN route information in a brief format.

### **l2vpn-type**

Specifies a 12-byte Virtual Switch Instance identifier (VSI-ID) type.

**Values** *bgp-ad, bgp-vpls, bgp-vpws, and multi-homing*

### ***veid***

Specifies a two byte identifier that represents the local bridging instance in a VPLS and is advertised through the BGP NLRI. This value must be lower than or equal to the *max-ve-id*.

**Values** 0 to 4294967295

### ***vpls-base-offset***

Specifies a two byte identifier advertised through the NLRI that is used to indicate which VE-ID should use the advertised NLRI at the receiving PE according to the following rule: if the offset  $\leq$  local VE-ID  $\leq$  offset+VBS-1 (VBS = virtual block size = 8 in our implementation) then the NLRI is processed. Otherwise it is ignored. The NLRI with this offset is generated as soon as the first VE-ID value between (offset, offset + VBS-1) is advertised in the network.

**Values** 0 to 4294967295

### ***site-id***

Specifies a two byte identifier usually employed for the BGP multi-homing solution. This value identifies the BGP multi-homing site associated with one or a set of objects (SAPs, pseudowires, or a combination). The *site-id* must be identical between the two PEs carrying the connection to the access device multi-homed to the PEs.

**Values** 0 to 4294967295

## **Platforms**

All

## **14.9 I2pt**

### I2pt

#### **Syntax**

**I2pt disabled**

**I2pt [detail]**

#### **Context**

[\[Tree\]](#) (show>service>id I2pt)

#### **Full Context**

show service id I2pt

#### **Description**

This command displays Layer 2 Protocol Tunnel (L2-PT) route information associated with this service.

## Parameters

### disabled

Displays only entries with termination disabled. This helps identify configuration errors.

### detail

Displays detailed information.

## Platforms

All

## Output

The following output is an example of service L2PT information.

### Output Example

```
A:ALA-48>show>service>id# l2pt
=====
L2pt summary, Service id 700
=====
      L2pt-term  L2pt-term  Bpdu-trans  Bpdu-trans  Bpdu-trans  Bpdu-trans
      enabled    disabled   auto        disabled    pvst        stp
-----
SAP's 0          1          0           1           0           0
SDP's 0          1          0           1           0           0
-----
Total 0          2          0           2           0           0
=====

A:ALA-48>show>service>id#

A:ALA-48>show>service>id# l2pt disabled
=====
L2pt details, Service id 700
=====
Service Access Points
-----
SapId      L2pt-      Admin Bpdu-  Oper Bpdu-
           termination translation translation
-----
1/1/9:0    disabled   disabled     disabled
-----
Number of SAPs : 1

Service Destination Points
-----
SdpId      L2pt-      Admin Bpdu-  Oper Bpdu-
           termination translation translation
-----
2:222     disabled   disabled     disabled
-----
Number of SDPs : 1
=====
L2pt summary, Service id 700
=====
      L2pt-term  L2pt-term  Bpdu-trans  Bpdu-trans  Bpdu-trans  Bpdu-trans
      enabled    disabled   auto        disabled    pvst        stp
-----
SAP's 0          1          0           1           0           0
SDP's 0          1          0           1           0           0
-----
```

```

Total 0      2      0      2      0      0
=====
A:ALA-48>show>service>id#

A:ALA-48>show>service>id# l2pt detail
=====
L2pt details, Service id 700
=====
Service Access Points
-----
SapId          L2pt-termination      Admin Bpdu-translation  Oper Bpdu-translation
-----
1/1/9:0        disabled                disabled                  disabled
-----
Number of SAPs : 1

Service Destination Points
-----
SdpId          L2pt-termination      Admin Bpdu-translation  Oper Bpdu-translation
-----
2:222          disabled                disabled                  disabled
-----
Number of SDPs : 1

L2pt summary, Service id 700
=====
          L2pt-term  L2pt-term  Bpdu-trans  Bpdu-trans  Bpdu-trans  Bpdu-trans
          enabled   disabled   auto        disabled    pvst        stp
-----
SAP's  0           1           0           1           0           0
SDP's  0           1           0           1           0           0
-----
Total  0           2           0           2           0           0
=====
A:ALA-48>show>service>id#
    
```

Table 239: Show L2PT Fields describes show L2PT output fields.

Table 239: Show L2PT Fields

Label	Description
Service id	Displays the 24 bit (0 to 16777215) service instance identifier for the service.
L2pt-term enabled	Indicates if L2-PT-termination and/or Bpdu-translation is in use in this service by at least one SAP or spoke-SDP binding. If in use, at least one of L2PT-termination or Bpdu-translation is enabled.  When enabled it is not possible to enable STP on this service.
L2pt-term disabled	Indicates that L2-PT-termination is disabled.
Bpdu-trans auto	Specifies the number of L2-PT PDUs are translated before being sent out on a port or sap.
Bpdu-trans disabled	Indicates that Bpdu-translation is disabled.

Label	Description
SAPs	Displays the number of SAPs with L2PT or BPDU translation enabled or disabled.
SDPs	Displays the number of SDPs with L2PT or BPDU translation enabled or disabled.
Total	Displays the column totals of L2PT entities.
Sapld	The ID of the access point where this SAP is defined.
L2pt-termination	Indicates whether L2pt termination is enabled or disabled.
Admin Bpdu-translation	Specifies whether Bpdu translation is administratively enabled or disabled.
Oper Bpdu-translation	Specifies whether Bpdu translation is operationally enabled or disabled.
Sdpld	Specifies the SAP ID.

## I2pt

### Syntax

I2pt

### Context

[\[Tree\]](#) (clear>service>statistics>id I2pt)

### Full Context

```
clear service statistics id I2pt
```

### Description

This command clears the I2pt statistics for this service.

### Platforms

All



## 14.10 I2tp

### I2tp

#### Syntax

I2tp

#### Context

[\[Tree\]](#) (show>router I2tp)

#### Full Context

show router I2tp

#### Description

Commands in this context display L2TP related information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### I2tp

#### Syntax

I2tp

#### Context

[\[Tree\]](#) (show>system I2tp)

#### Full Context

show system I2tp

#### Description

This command displays L2TP system information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of L2TP system information.

## Output Example

```
*A:Dut-C# show system l2tp
=====
L2TP system
=====
Non MC tunnel ID range           : 8193-16383
Max number of tunnels             : 16383
Max number of sessions           : 131071
Max number of sessions per tunnel : 32767
=====
```

## l2tp

### Syntax

l2tp

### Context

[\[Tree\]](#) (clear>router l2tp)

### Full Context

clear router l2tp

### Description

Commands in this context clear L2TP data.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## l2tp

### Syntax

l2tp

### Context

[\[Tree\]](#) (tools>perform>router l2tp)

### Full Context

tools perform router l2tp

### Description

Commands in this context configure performance tools for L2TP.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 14.11 l2tp-accounting-policy

### l2tp-accounting-policy

#### Syntax

**l2tp-accounting-policy** *name* **statistics**

#### Context

[\[Tree\]](#) (clear>aaa l2tp-accounting-policy)

#### Full Context

clear aaa l2tp-accounting-policy

#### Description

This command clears L2TP accounting policy data.

#### Parameters

***name***

Specifies the L2TP accounting policy name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### l2tp-accounting-policy

#### Syntax

**l2tp-accounting-policy** *policy-name*  
**l2tp-accounting-policy** *policy-name* **associations**  
**l2tp-accounting-policy** *policy-name* **statistics**  
**l2tp-accounting-policy**

#### Context

[\[Tree\]](#) (show>aaa l2tp-accounting-policy)

#### Full Context

show aaa l2tp-accounting-policy

## Description

This command displays L2TP accounting policy information.

## Parameters

### *policy-name*

Specifies the L2TP accounting policy name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 14.12 label

label

## Syntax

label start-label [end-label | in-use | owner]

## Context

[\[Tree\]](#) (show>router>mpls-labels label)

## Full Context

show router mpls-labels label

## Description

This command displays MPLS labels exchanged.

## Parameters

### *start-label*

Specifies the label value assigned at the ingress router.

### *end-label*

Specifies the label value assigned for the egress router.

### *in-use*

Specifies the number of in-use labels displayed.

## Platforms

All

## Output

The following output is an example of MPLS label information.

[Table 240: MPLS Label Output Fields](#) describes MPLS label output fields.

Table 240: MPLS Label Output Fields

Label	Description
Label	Displays the value of the label being displayed.
Label Type	Specifies whether the label value is statically or dynamically assigned.
Label Owner	The label owner.
In-use labels in entire range	The total number of labels being used by RSVP.

### Output Example

```
*A:Atlanta 224>show>router>mpls-labels># label-range
=====
Label Ranges
=====
Label Type      Start Label End Label   Aging      Available  Total
-----
Static          32          18431      -          18400     18400
Dynamic        18432       524287     0          505443    505856
  Seg-Route    200501      200900     -           0         400
=====
```

```
*A:SRU4>config>router>mpls# show router mpls label 202
=====
MPLS Label 202
=====
Label           Label Type      Label Owner
-----
202             static-lsp      STATIC
-----
In-use labels in entire range           : 5057
=====
*A:SRU4>config>router>mpls#
```

## label

### Syntax

#### label summary

**label** [**start** *start-label*] [**end** *end-label*] [**in-use**] [**owner** {**static** | **pce** | **sr-pol**}]

### Context

[\[Tree\]](#) (show>router>p2mp-sr-tree label)

### Full Context

show router p2mp-sr-tree label

## Description

This command displays P2MP SR label information.

## Parameters

### *start-label*

specifies the starting label value from which to display the P2MP SR label information. If only *start-label* is specified, only labels using *start-label* are displayed.

**Values** 32 to 524287

### *end-label*

Specifies the ending label value for which to display P2MP SR label information.

**Values** 32 to 524287

### *in-use*

Displays labels that are in use.

### *owner*

Displays labels owned by the specified owner.

### *static*

Displays labels owned by the static owner.

### *pce*

Displays labels owned by the PCE.

### *sr-pol*

Displays labels owned by the SR policy.

## Platforms

All

## Output

The following output is an example of P2MP SR label information.

### Output Example

```
A:swsim103>show>router>p2mp-sr-tree# label
=====
P2MP-SR Label Information
=====
Label           Owner           InUse
-----
30000           static          Yes
30001           static          Yes
```

## label

## Syntax

**label** [*label*] [*detail*]

**label** [*label*] **egress-stats**

**label** [*label*] **ingress-stats**

## Context

**[Tree]** (show>router>rib-api label)

## Full Context

show router rib-api label

## Description

This command displays RIB-API label information.

## Parameters

### *label*

Specifies the label of a specified RIB-API entry.

**Values** 16 to 1048575

### **detail**

Displays detailed RIB-API label information.

### **egress-stats**

Displays egress statistics of all instances for the specified RIB-API label.

### **ingress-stats**

Displays ingress statistics of all instances for the specified RIB-API label.

## Platforms

All

## Output

The following output is an example of RIB-API label information.

### Output Example

```
show router rib-api label 400001 egress-stats
=====
Label (Detail)
=====
Label           : 400001           Rib-API Pref   : 16
Client Ip       : 172.21.38.76     Client Tag     : 1
Active          : Y               EgrStatsState : Up
Next-hop Group  : 1
  Primary nexthop : 10.10.5.5
  StatsOperState  : Up
  Aggr Pkts: 11000                               Aggr Octets: 11550000
Backup nexthop  : 10.10.11.4
  StatsOperState  : Up
  Aggr Pkts: 11000                               Aggr Octets: 11550000
Next-hop Group  : 2
  Primary nexthop : 10.10.5.5
  StatsOperState  : Up
  Aggr Pkts: 11000                               Aggr Octets: 11550000
```

```
Backup nexthop : 10.10.11.4
StatsOperState : Up
Aggr Pkts: 11000           Aggr Octets: 11550000
Total Aggr :
Aggr Pkts: 44000           Aggr Octets: 46200000
-----
=====
```

## label

### Syntax

**label** *label* **preference** *preference* **client-tag** *client-tag* **egress-stats**

**label** *label* **ingress-stats**

### Context

[\[Tree\]](#) (clear>router>rib-api label)

### Full Context

clear router rib-api label

### Description

Clears the egress or ingress statistics of the specified RIB-API label.

### Parameters

#### ***label***

Specifies the label of the specified RIB-API entry.

**Values** 32 to 1048575

#### ***preference***

Specifies the preference of the specified RIB-API entry.

**Values** 0 to 4294967295

#### ***client-tag***

Specifies the client tag of the specified RIB-API entry.

**Values** 0 to 4294967295

#### **egress**

Specifies to only clear the egress statistics.

#### **ingress**

Specifies to only clear the ingress statistics.

### Platforms

All



## label

### Syntax

**label** *label*

### Context

[\[Tree\]](#) (tools>dump>router>rib-api label)

### Full Context

tools dump router rib-api label

### Description

This command configures the dump tools for RIB-API label.

### Parameters

***label***

Specifies the label of the specified RIB-API entry.

**Values** 32 to 1048575

### Platforms

All

### Output

The following output is an example of RIB-API label route information.

#### Output Example

```
*A:Dut-B>config>service# /tools dump router rib-api label 30044
Db Mgr flags 0x80 ilmStatsFailCnt 0
-----
dbOwner RIB-API routeOwner 50 rsvdBlkId 3 flags 0x3 numPolicies 1 numInstalled 1
-----
Label DB 30044
dbFlags 0xd PathCount 1 srTunnelId 1015811 ilmStatsIdx[MGMT] 0x0 ilmStatsIdx[API] 0x0
LABEL RESERVED: PROGRAMMED
Path bitmap 0
Label Retry time left : 0 retrycount : 0, SR Retry time left : 0 SR retrycount : 0
Best Db Path owner 1 path name vrId:1, dbOwner:1, Client Tag:2 bindingLbl 30044 preference 246
Last Modified 02/07/2020 23:44:51 Up Time 0d 02:15:54
Preference 246 flags 0x245 Status FWDPLCY_ERR_NA SR status SR_ERR_OK
PrimResolved NH's 1 BkupResolved NH's 1
NHGroup 2
flags 0x3bf9 : weight 0 normalized weight 0
Revert timer 65535 Time left 0 NumOfReverts 0
Hold timer 0 Time left 0
DIRECT NH: PRIM PGMED: PRIM RESOLVED: BKUP RESOLVED: BKUP PGMED:
primaryNH 1.2.3.3 egrStatsIdx 0x0 Status FWDPLCY_NHERR_NA
Label Stack:30055 0
Nexthop 1 1.2.3.3 outIf 3 globalIfIndex 32 globaIfInNHgrp 32
PG ID 0
```

```
PG ID 5  
backupNH 1.2.3.33 egrStatsIdx 0x0 Status FWDPLCY_NHERR_NA  
Label stack:30255 0  
Nexthop 1 1.2.3.33 outIf 3 globalIfIndex 32 globaIfInNHgrp 32  
PG ID 0  
PG ID 6  
-----  
*A:Dut-B>config>service#
```

## label

### Syntax

```
label label preference preference client-tag client-tag egress-stats [ interval seconds] [ repeat repeat]  
    [{absolute | rate}]
```

### Context

[\[Tree\]](#) (monitor>router>rib-api label)

### Full Context

monitor router rib-api label

### Description

This command monitors the egress statistics of the specified RIB-API label.

### Parameters

#### *label*

Specifies the label of the specified RIB-API entry.

**Values** 0 to 4294967295

#### *preference*

Specifies the preference of the specified RIB-API entry.

**Values** 0 to 4294967295

#### *client-tag*

Specifies the client tag of the specified RIB-API entry.

**Values** 0 to 4294967295

#### *egress-stats*

Specifies to monitor the egress statistics of the specified RIB-API label.

#### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**absolute**

Displays the absolute statistics of the specified RIB-API label.

**rate**

Displays the rate-per-second statistics of the specified RIB-API label.

**Platforms**

All

## 14.13 label-ipv4

### label-ipv4

**Syntax**

**label-ipv4** [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**origin-val** *originState*] [**leaked**] [**leakable**]  
[**brief**] [**all**]

**label-ipv4** [**aspath-regex** *reg-exp*] **hunt** [**community** *comm-id*] [**origin-val** *originState*] [**leaked**] [**leakable**]  
[**brief**] [**all**]

**label-ipv4** [**detail** | **longer**] [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**origin-val** *originState*] [**leaked**]  
[**leakable**] [**all**]

**Context**

[\[Tree\]](#) (show>router>bgp>routes label-ipv4)

**Full Context**

show router bgp routes label-ipv4

**Description**

This command displays BGP IPv4 routes.

**Parameters**

**reg-exp**

Displays routes with an AS path matching the specified regular expression *reg-exp*, up to 80 characters.

**comm-id**

Specifies community IDs, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth:asnum:val-in-mbps**
  - **ext:4300:ovstate**
  - **ext:value1:value2**
  - **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null | no-export | no-export-subconfed | no-advertise | blackhole**

### **originState**

Filters the BGP routes displayed by the command to those routes with a particular RPKI route origin validation state.

- Values**
- valid — Displays valid validation state information.
  - invalid — Displays invalid validation state information.
  - notfound — Displays state information for unfound origin values.

### **hunt**

Displays entries for the specified route.

**leaked**

Filters the BGP routes displayed by the command to those routes leaked into this router's BGP instance from another BGP instance.

**leakable**

Filters the BGP routes displayed by the command to those routes eligible for leaking from this router's BGP instance to another BGP instance.

**brief**

Provides a summarized display of the set of peers to which a BGP route is advertised.

**longer**

Displays the specified route and subsets of the route.

**detail**

Display the longer, more detailed version of the output.

**all**

Displays output for all label BGP IPv4 routes.

**Platforms**

All

## 14.14 label-ipv6

### label-ipv6

**Syntax**

**label-ipv6** [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**origin-val** *originState*] [**leaked**] [**leakable**] [**brief**] [**all**]

**label-ipv6** [**aspath-regex** *reg-exp*] **hunt** [**community** *comm-id*] [**origin-val** *originState*] [**leaked**] [**leakable**] [**brief**] [**all**]

**label-ipv6** [**detail** | **longer**] [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**origin-val** *originState*] [**leaked**] [**leakable**] [**all**]

**Context**

[\[Tree\]](#) (show>router>bgp>routes label-ipv6)

**Full Context**

show router bgp routes label-ipv6

**Description**

This command displays information about BGP IPv6 routes.

## Parameters

### *reg-exp*

Displays routes with an AS path matching the specified regular expression *reg-exp*, up to 80 characters.

### *comm-id*

Specifies community IDs, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm*]

where:

- *as-num* — 0 to 65535
  - *comm-val* — 0 to 65535
  - *ext-comm* — the extended community, defined as one of the following:
    - *{target | origin}:ip-address:comm-val*
    - *{target | origin}:asnum:ext-comm-val*
    - *{target | origin}:ext-asnum:comm-val*
    - **bandwidth:asnum:val-in-mbps**
    - **ext:4300:ovstate**
    - **ex \t:value1:value2**
    - **flowspec-set:ext-asnum:group-id**
- where:
- *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**

### **originState**

Filters the BGP routes displayed by the command to those routes with a particular RPKI route origin validation state.

- Values**
- valid — Displays valid validation state information.
  - invalid — Displays invalid validation state information.
  - notfound — Displays state information for unfound origin values.

### **hunt**

Displays entries for the specified route.

### **leaked**

Filters the BGP routes displayed by the command to those routes leaked into this router's BGP instance from another BGP instance.

### **leakable**

Filters the BGP routes displayed by the command to those routes eligible for leaking from this router's BGP instance to another BGP instance.

### **brief**

Provides a summarized display of the set of peers to which a BGP route is advertised.

### **longer**

Displays the specified route and subsets of the route.

### **detail**

Display the longer, more detailed version of the output.

### **all**

Displays output for all label BGP IPv6 routes.

## **Platforms**

All

## **Output**

The following output an example of BGP routes label IPv6 information.

### **Output Example**

```
show router bgp routes label-ipv6 hunt
-----
RIB Out Entries
-----
Network       : 100::1/128
Nextthop      : ::ffff:10.20.1.4
Path Id       : None
To            : 10.20.1.6
Res. Nextthop : n/a
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : No Community Members
Cluster       : No Cluster Members
Interface Name : NotAvailable
Aggregator    : None
MED           : 1
IGP Cost      : n/a
```

```
Originator Id : None Peer Router Id : 10.20.1.6
IPv6 Label : 2 (Ipv6 Explicit-Null) Label Type : POP
Lbl Allocation : EXPLICIT-NULL
Origin : IGP
AS-Path : No As-Path
Route Tag : 0
Neighbor-AS : n/a
Orig Validation: NotFound
Source Class : 0 Dest Class : 0
Prefix SID : index 2, originator-srgb [18450/16551]
```

```
-----
Routes : 1
show router bgp routes label-ipv6 detail
```

BGP Routes

=====

Original Attributes

```
Network : 100::1/128
Nexthop : ::ffff:10.10.13.1
Path Id : None
From : 10.10.13.1
Res. Nexthop : 10.10.13.1
Local Pref. : n/a Interface Name : to_A
Aggregator AS : None Aggregator : None
Atomic Aggr. : Not Atomic MED : None
AIGP Metric : None IGP Cost : 0
Connector : None
Community : No Community Members
Cluster : No Cluster Members
Originator Id : None Peer Router Id : 10.20.1.1
Fwd Class : None Priority : None
IPv6 Label : 524287
Flags : Used Valid Best IGP In-TTM In-RTM
Route Source : External
AS-Path : 100
Route Tag : 0
Neighbor-AS : 100
Orig Validation: NotFound
Source Class : 0 Dest Class : 0
Add Paths Send : Default
RIB Priority : Normal
Last Modified : 00h00m29s
```

## 14.15 label-range

### label-range

#### Syntax

**label-range**

#### Context

**[Tree]** (show>router>mpls-labels label-range)



## Full Context

show router mpls-labels label-range

## Description

This command displays the MPLS label range.

## Platforms

All

## Output

The following output is an example of MPLS label range information.

[Table 241: MPLS Label Range Output Fields](#) describes the MPLS label range output fields.

Table 241: MPLS Label Range Output Fields

Label	Description
Label Type	Displays the information about <b>static-lsp</b> , <b>static-svc</b> , and <b>dynamic</b> label types.
Start Label	The label value assigned at the ingress router.
End Label	The label value assigned for the egress router.
Aging	The number of labels released from a service which are transitioning back to the label pool. Labels are aged 15 s.
Total Available	The number of label values available.

## Output Example

```
*A:Atlanta 224>show>router>mpls-labels># label-range
=====
Label Ranges
=====
Label Type      Start Label  End Label   Aging      Available  Total
-----
Static          32           18431      -           18400     18400
Dynamic         18432        524287     0           505443    505856
  Seg-Route     200501       200900     -           0          400
=====
```

## 14.16 label-type

### label-type

#### Syntax

**label-type** **start-label** *start-label* [**end-label** *end-label*] *label-type* [**family**]

#### Context

[\[Tree\]](#) (show>router>ldp>bindings label-type)

#### Full Context

show router ldp bindings label-type

#### Description

This command displays LDP FEC bindings by matching labels.

#### Parameters

##### ***start-label***

Specifies a label value to begin the display.

**Values** 16 to 1048575

##### ***end-label***

Specifies a label value to end the display.

**Values** 17 to 1048575

##### **family**

Displays either IPv4 or IPv6 LDP information.

#### Platforms

All

## 14.17 labels

### labels

#### Syntax

**labels**

## Context

[\[Tree\]](#) (show>service>id labels)

## Full Context

show service id labels

## Description

This command displays the labels being used by the service.

## Platforms

All

## Output

The following output is an example of service label information.

### Output Example

```
A:ALA-12# show service id 1 labels
=====
Martini Service Labels
=====
Svc Id      Sdp Id      Type I.Lbl      E.Lbl
-----
1           10:1        Mesh 0           0
1           20:1        Mesh 0           0
1           30:1        Mesh 0           0
1           40:1        Mesh 130081      131061
1           60:1        Mesh 131019      131016
1           100:1       Mesh 0           0
-----
Number of Bound SDPs : 6
-----
A:ALA-12#
```

[Table 242: Service-ID Labels Field Descriptions](#) describes show service-id labels output fields:

*Table 242: Service-ID Labels Field Descriptions*

Label	Description
Svc Id	The service identifier
Sdp Id	The SDP identifier
Type	The SDP type, spoke or mesh
I. Lbl	The VC label used by the far-end device to send packets to this device in this service by the SDP
E. Lbl	The VC label used by this device to send packets to the far-end device in this service by the SDP

## 14.18 lacp-partner

lacp-partner

### Syntax

lacp-partner

lacp-partner detail

### Context

[\[Tree\]](#) (show>lag lacp-partner)

### Full Context

show lag lacp-partner

### Description

This command displays LACP partner information.

### Parameters

**detail**

Displays detailed information.

### Platforms

All

## 14.19 lag

lag

### Syntax

lag [*lag-id*] [detail] [statistics]

lag [*lag-id*] [detail] [lcp-statistics]

lag [*lag-id*] description

lag [*lag-id*] egress-rate-distribution

lag [*lag-id*] port

lag *lag-id* associations per-link-hash interface [class {1 | 2 | 3}]

lag *lag-id* associations

lag *lag-id* bfd

```
lag lag-id [detail] eth-cfm [tunnel tunnel-id]  
lag lag-id flow-distribution  
lag lag-id associations per-link-hash interface  
lag lag-id associations link-map-profile [link-map-profile] interface  
lag lag-id lACP-partner  
lag lag-id detail lACP-partner  
lag lag-id link-map-profile link-map-profile  
lag lag-id per-link-hash [class {1 | 2 | 3}]  
lag lag-id associations per-link-hash sap [class {1 | 2 | 3}]  
lag lag-id associations link-map-profile [link-map-profile] sap  
lag lag-id per-link-hash port port-id
```

## Context

[\[Tree\]](#) (show lag)

## Full Context

show lag

## Description

This command displays Link Aggregation Group (LAG) information.

If no command line options are specified, a summary listing of all LAGs is displayed.

## Parameters

### *lag-id*

Displays only information on the specified LAG ID.

**Values** 1 to 800

**Default** Displays information for all LAG IDs.

### **detail**

Keyword that displays detailed LAG information.

**Default** Displays summary information.

### **statistics**

Keyword that displays LAG statistics information.

### **lACP-statistics**

Keyword that displays the number of LACP PDUs transmitted and received per LAG port.

### **description**

Keyword that displays the user-defined description for the LAG.

### **egress-rate-distribution**

Keyword that displays the egress traffic rate in kb/s per LAG port.

**port**

Keyword that displays port information.

**associations**

Keyword that displays a list of current router interfaces to which the LAG is assigned.

**interface**

Keyword that displays interface information.

**bfd**

Keyword that displays per-member BFD information.

**eth-cfm**

Keyword that displays a list of Ethernet tunnels to which the LAG is assigned.

**tunnel-id**

Filters ETH-CFM MEP information to one tunnel.

**Values** 1 to 4094

**flow-distribution**

Keyword that displays the flow distribution per active LAG port in a given LAG. The operator can control the flow distribution per LAG by configuring a **hash-weight** value on each ports of a LAG.

Inactive LAG ports are not displayed.

**per-link-hash**

Keyword that displays information about a SAP or interface associated with this LAG sends traffic over a single link of a LAG auto-re-balancing as links are added and removed from this LAG.

**lACP-partner**

Keyword that displays LACP partner information.

**link-map-profile**

Displays information about a specified LAG link map profile.

**Values** 1 to 64

**sap**

Keyword that displays SAP information.

**port-id**

Specifies the port ID.

**Values** *slot/mda/port*

**Platforms**

All

**Output**

The following outputs are examples of lag information, and the associated tables describe the output fields.

- [Output Example: show lag](#)

- [Output Fields: show lag](#)
- [Output Example: show lag <lag-id> detail](#)
- [Output Fields: show lag <lag-id> detail](#)
- [Output Example: Show LAG Statistics](#)
- [Output Fields: Show LAG Statistics](#)
- [Output Example: show lag <lag-id> egress-rate-distribution](#)
- [Output Fields: show lag <lag-id> egress-rate-distribution](#)
- [Output Example: show lag <lag-id> lacp-statistics](#)
- [Output Fields: show lag <lag-id> lacp-statistics](#)
- [Output Example: Show lag <lag-id> flow-distribution](#)
- [Output Fields: show lag <lag-id> flow-distribution](#)
- [Output Example: Show lag <lag-id> associations](#)
- [Output Fields: Show lag <lag-id> associations](#)
- [Output Example: Show lag <lag-id> detail \(with MC-LAG Output\)](#)
- [Output Example: show lag <lag-id> lacp-partner](#)

**Output Example: show lag**

```
A:7750# show lag
=====
Lag Data
=====
Lag-id      Adm   Opr   Weighted Threshold Up-Count MC Act/Stdby
name
-----
1          lag-1  up    down    No      0      0      active
2          lag-2  up    down    No      0      0      N/A
-----
Total Lag-ids: 2      Single Chassis: 1      MC Act: 1      MC Stdby: 0
=====
```

**Output Fields: show lag**

[Table 243: Output Fields: show lag](#) describes the output fields for the **show lag** command.

*Table 243: Output Fields: show lag*

Label	Description
Lag-id	The LAG or multi-link bundle ID that the port is assigned to.
Lag-name	The LAG name.
Adm	Up — The LAG is administratively up. Down — The LAG is administratively down.
Opr	Up — The LAG is operationally up.

Label	Description
	Down—The LAG is operationally down.
Threshold	The number of operational links for the LAG at or below which the configured action is invoked.
Up-Count	The number of ports that are physically present and have physical links present.
MC Act/Stdby	Member port is selected as active or standby link.

**Output Example: show lag <lag-id> detail**

```
A:Dut-B# show lag 1 detail
=====
LAG Details
=====
Description      : N/A
-----
Details
-----
Lag-id           : 1                Mode           : access
Lag-name         : lag-1
Adm              : up                Opr            : down
Thres. Last Cleared : 04/12/2021 12:21:41  Thres. Exceeded Cnt : 0
Dynamic Cost     : false            Encap Type     : null
Configured Address : e2:e5:ff:00:01:41  Lag-IfIndex    : 1342177281
Hardware Address  : e2:e5:ff:00:01:41  Adapt Qos (access) : distribute
Hold-time Down   : 0.0 sec           Port Type      : standard
Per-Link-Hash    : disabled
Include-Egr-Hash-Cfg: disabled      Forced         : -
Per FP Ing Queuing : disabled        Per FP Egr Queuing : disabled
Per FP SAP Instance : disabled
Access Bandwidth  : N/A                Access Booking Factor: 100
Access Available BW : 0
Access Booked BW  : 0
LACP              : enabled          Mode           : passive
LACP Transmit Intvl : fast          LACP xmit stdby  : enabled
Selection Criteria : highest-count  Slave-to-partner : disabled
MUX control       : coupled
Subgrp hold time  : 0.0 sec           Remaining time   : 0.0 sec
Subgrp selected   : MC peer        Subgrp candidate : -
Subgrp count      : 1
System Id         : e2:e5:ff:00:00:00  System Priority  : 32768
Admin Key         : 32768              Oper Key        : 1
Prtr System Id    : e2:f2:ff:00:00:00  Prtr System Priority : 1000
Prtr Oper Key     : 32768
Standby Signaling : lacp
Port hashing      : port-speed       Port weight speed : 0 gbps
Ports Up          : 0
Weights Up        : 0                Hash-Weights Up  : 0
Monitor oper group : N/A
Adaptive loadbal. : disabled        Tolerance       : N/A
MC Peer Address   : 3.3.3.3        MC Peer Lag-id   : 1
MC System Id      : 00:00:00:00:00:01  MC System Priority : 100
MC Admin Key      : 1                MC Active/Standby : standby
MC Lacp ID in use : true           MC extended timeout : false
MC Selection Logic : local master decided
MC Config Mismatch : no mismatch
-----
```



```

Port-id      Adm      Act/Stdby  Opr      Primary  Sub-group  Forced  Prio
-----
1/1/3       up       standby   down    yes      1          -       32768
1/1/4       up       standby   down    yes      1          -       32768
-----
Port-id      Role      Exp  Def  Dist  Col  Syn  Aggr  Timeout  Activity
-----
1/1/3       actor    No   No   No   No   No   Yes   Yes      No
1/1/3       partner No   No   No   No   Yes  Yes   Yes      Yes
1/1/4       actor    No   No   No   No   No   Yes   Yes      No
1/1/4       partner No   No   No   No   Yes  Yes   Yes      Yes
=====
    
```

**Output Fields: show lag <lag-id> detail**

Table 244: Output Fields: show lag <lag-id> detail describes the output fields for the **show lag lag-id detail** command. The output is dependent on whether or not the LAG was configured as a multi-chassis (MC) LAG.

Table 244: Output Fields: show lag <lag-id> detail

Label	Description
Lag-id	The LAG identification.
Lag-name	The LAG name.
Mode	The LAG mode: <ul style="list-style-type: none"> <li>• access</li> <li>• hybrid</li> <li>• network</li> </ul>
Adm	Administrative state of the LAG. Up — The LAG is administratively up. Down — The LAG is administratively down.
Opr	Operational state of the LAG. Up — The LAG is operationally up. Down — The LAG is operationally down.
Thres. Last Cleared	The last time that port or weight thresholds were cleared: <ul style="list-style-type: none"> <li>• when there is a falling or rising hit</li> <li>• when they are configured and immediately reached</li> <li>• when they are not configured when reached</li> </ul> Not cleared by the threshold cfg or deconfig command when the port or weight threshold is removed. The port or weight threshold can then be configured but not immediately reached.
Thres. Exceeded Cnt	The number of times that the weight or port threshold rising counter was reached.

Label	Description
	The Thresh. Exceed counter displays the rising counter, as the falling counter is only available via SNMP.  When we configure or deconfigure the port or weight threshold, the Thresh. Exceed counter is set to 0.
Dynamic Cost	Enabled — Dynamic cost is enabled. Disabled — Dynamic cost is disabled.
Encap Type	The LAG port encapsulation type: <ul style="list-style-type: none"> <li>• dot1q</li> <li>• null</li> <li>• qinq</li> </ul>
Configured Address	The configured Ethernet MAC address.
Lag-IfIndex	A box-wide unique number assigned to this interface.
Hardware Address	The Ethernet MAC address.
Adapt Qos (access)	Displays the configured QoS mode: <ul style="list-style-type: none"> <li>• distribute</li> <li>• link</li> <li>• port-fair</li> </ul>
Hold-Time Down	The timer, in tenths of seconds, which controls the delay between detecting that a LAG is down and reporting it to the higher levels.
Port Type	The port type: <ul style="list-style-type: none"> <li>• hs</li> <li>• standard</li> </ul>
Per-Link-Hash	Enabled — Per link hash is enabled. Disabled — Per link hash is disabled.
Include-Egr-Hash-Cfg	The explicitly configured hashing that is included to the egress buffering and rate distribution.
Per FP Ing Queuing	The per FP ingress queuing status.
Per FP Egr Queuing	The per FP egress queuing status.
Per FP SAP Instance	The per FP SAP instance status.
Access Bandwidth	The LAG access bandwidth value.
Access Booking Factor	The LAG access booking factor.
Access Available BW	The access available bandwidth.

Label	Description
Access Booked BW	The access booked bandwidth.
LACP	Enabled — LACP is enabled. Down — LACP is disabled.
LACP Transmit Intvl	The LACP transmit interval mode.
LACP xmit stdby	The LACP transmit standby mode.
Selection Criteria	Configured LAG selection criteria.
Slave-to-partner	The LACP slave-to-partner enabled or disabled state.
MUX control	Configured type of multiplexing machine control used in a LAG with LACP in active/passive modes. coupled — TX and RX activate together. independent — RX activates independent of TX.
Subgrp hold time	The sub-group hold time value.
Remaining time	The sub-group remaining time value.
Subgrp selected	The number of sub-group selected in this LAG.
Subgrp candidate	The sub-group candidate.
Subgrp count	The number of sub-group configured in this LAG.
System Id	System ID used by actor in LACP messages.
System Priority	System priority used by actor in LACP messages.
Admin Key	Configured LAG key.
Oper Key	Key used by actor in LACP messages.
Prtr System Id	System ID used by partner in LACP messages.
Prtr System Priority	System priority used by partner in LACP messages.
Prtr Oper Key	Key used by partner in LACP messages.
Standby Signaling	The standby signaling mode used in this LAG.
Port hashing	Displays the LAG port hashing mechanism for flow distribution per LAG port. <ul style="list-style-type: none"> <li>• <b>port-speed</b> — the port hashing value is inherited from the port speed</li> <li>• <b>hash-weight</b> — the LAG port <b>hash-weight</b> value is used to customize flow distribution per port</li> </ul>
Port weight speed	The LAG port weight speed value for mixed-speed LAG.

Label	Description
Ports Up	The number of ports that are operationally up for this LAG.
Weights Up	Sum of weights for ports that are operationally up in this LAG.
Hash-Weights Up	Sum of hash weights for ports that are operationally up in this LAG.
Threshold Type	The type of threshold used in this LAG: <ul style="list-style-type: none"> <li>• hash-weight-threshold</li> <li>• port-threshold</li> <li>• weight-threshold</li> </ul>
Monitor oper group	The name of the operational group being monitored for this LAG.
Adaptive loadbal	The adaptive load balancing status. Enabled — The adaptive load balancing is enabled. Disabled — The adaptive load balancing is disabled.
Tolerance	The adaptive load balancing tolerance value.
Interval	The adaptive load balancing statistics pooling interval.
MC Peer Address	The multi-chassis peer IP address.
MC Peer Lag-id	The LAG ID for the multi-chassis peer.
MC System Id	The multi-chassis LAG system identifier MAC address.
MC System Priority	The multi-chassis LAG system priority.
MC Admin Key	The multi-chassis LAG administrative key.
MC Active/Standby	The multi-chassis LAG active or standby state.
MC Lacp ID in use	The multi-chassis LAG in use state.
MC extended timeout	The multi-chassis LAG extended timeout value.
MC Selection Logic	The multi-chassis LAG selection logic state.
MC Config Mismatch	The multi-chassis LAG configuration mismatch state.

**Output Example: Show LAG Statistics**

```

=====
LAG Statistics
=====
-----
Lag-id : 1 Lag-name : lag-1
-----
Description      : N/A
Port-id          Input(Packets)      Output(Packets)
                Input(Bytes)         Output(Bytes)
    
```

	Input Errors	Output Errors
1/1/4	0	0
	0	0
	0	0
Totals	0	0
	0	0
	0	0

**Output Fields: Show LAG Statistics**

Table 245: [Output Fields: Show LAG Statistics](#) describes the output fields for the **show lag statistics** command.

Table 245: *Output Fields: Show LAG Statistics*

Label	Description
Lag-id	The LAG or multi-link trunk (MLT) that the port is assigned to.
Lag-name	The LAG name.
Port-id	The port ID.
Input Bytes	The number of incoming bytes for the LAG on a per-port basis.
Input Packets	The number of incoming packets for the LAG on a per-port basis.
Output Bytes	The number of outbound bytes for the LAG on a per-port basis.
Output Packets	The number of outbound packets for the LAG on a per-port basis.
Input/Output Errors	For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol. For character-oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.  For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.
Totals	Displays the column totals for bytes, packets, and errors.

**Output Example: show lag <lag-id> egress-rate-distribution**

```
A:7750# show lag 1 egress-rate-distribution
=====
Distribution of egress rate by adaptive load balancing
=====
Port                               Egress-rate (kbps)
-----
8/1/71                               43186
8/1/72                               43186
8/1/73                               38387
```

**Output Fields: show lag <lag-id> egress-rate-distribution**

Table 246: Output Fields: show lag <lag-id> egress-rate-distribution describes the output fields for the show lag <lag-id> egress-rate-distribution command.

Table 246: Output Fields: show lag <lag-id> egress-rate-distribution

Label	Description
Port	The LAG member port.
Egress-rate	Total egress traffic rate of the LAG port from the last scan interval.

**Output Example: show lag <lag-id> lacp-statistics**

```
A:7750>config>lag# show lag 1 lacp-statistics
=====
LAG LACP Statistics
=====
LAG-id   Port-id      Tx          Rx          Rx Error   Rx Illegal
(Pdus)   (Pdus)      (Pdus)      (Pdus)      (Pdus)     (Pdus)
-----
1        1/1/3        20305       20291       0           0
1        1/1/4        20304       20292       0           0
1        1/1/13       20303       20284       0           0
1        1/1/14       20303       20284       0           0
-----
Totals           81215       81151       0           0
=====
```

**Output Fields: show lag <lag-id> lacp-statistics**

Table 247: Output Fields: show lag <lag-id> lacp-statistics describes the output fields for the show lag <lag-id> lacp-statistics command.

Table 247: Output Fields: show lag <lag-id> lacp-statistics

Label	Description
LAG-id	The LAG ID that the port is assigned to.
Port-id	The port ID.
Tx (Pdus)	The number of LACP PDUs transmitted.
Rx (Pdus)	The number of LACP PDUs received.
Rx Error (Pdus)	The number of LACP PDUs received when <b>admin-down</b> or when LACP is not enabled.
Rx Illegal	The number of illegal packets received.

Label	Description
(Pdus)	

**Output Example: Show lag <lag-id> flow-distribution**

```
A:Dut-A# show lag 3 flow-distribution
=====
Distribution of allocated flows
=====
Port                Bandwidth (Gbps) Hash-weight  Flow-share (%)
-----
1/1/1                10.000          300          37.50
1/1/2                10.000          500          62.50
-----
Total operational bandwidth: 20.000
=====
```

**Output Fields: show lag <lag-id> flow-distribution**

Table 248: [Output Fields: show lag <lag-id> flow-distribution](#) describes the output fields for the **show lag flow-distribution** command.

Table 248: Output Fields: show lag <lag-id> flow-distribution

Label	Description
Bandwidth	The physical bandwidth speed per active LAG port.
Hash-Weight	The hash-weight value configured or inherited from port-speed on this LAG port.
Flow-Share	The traffic flow distribution per active LAG port.

**Output Example: Show lag <lag-id> associations**

```
A:ALA-1# show lag 5 associations
=====
Interface Table
=====
Router/ServiceId    Name                Encap Val
-----
Router: Base        LAG2West            0
-----
Interfaces
=====
A:ALA-1#
```

**Output Fields: Show lag <lag-id> associations**

Table 249: [Output Fields: Show lag <lag-id> associations](#) describes the output fields for the **show lag <lag-id> associations** command.

Table 249: Output Fields: Show lag <lag-id> associations

Label	Description
Service ID	The service associated with the LAG.

Label	Description
Name	The name of the IP interface.
Encap Val	The Dot1q or QinQ values of the port for the IP interface.

**Output Example: Show lag <lag-id> detail (with MC-LAG Output)**

```

A:Dut-C# show lag 1 detail
=====
LAG Details
=====
Description      : N/A
-----
Details
-----
Lag-id          : 1                Mode           : access
Adm             : up                Opr            : up
Thres. Last Cleared : 09/16/2019 23:27:40  Thres. Exceeded Cnt : 2
Dynamic Cost    : false           Encap Type     : null
Configured Address : 10:0e:ff:00:01:41  Lag-IfIndex    : 1342177281
Hardware Address  : 10:0e:ff:00:01:41  Adapt Qos (access) : distribute
Hold-time Down   : 0.0 sec          Port Type     : standard
Per-Link-Hash    : disabled
Include-Egr-Hash-Cfg: disabled        Forced         : -
Per FP Ing Queuing : disabled        Per FP Egr Queuing : disabled
Per FP SAP Instance : disabled
Access Bandwidth  : N/A                Access Booking Factor: 100
Access Available BW : 0
Access Booked BW  : 0
LACP             : enabled        Mode           : passive
LACP Transmit Intvl : fast          LACP xmit stdby  : enabled
Selection Criteria : highest-count  Slave-to-partner : disabled
MUX control      : coupled
Subgrp hold time  : 1.0 sec          Remaining time   : 0.0 sec
Subgrp selected   : 2                Subgrp candidate : -
Subgrp count     : 1
System Id        : 10:0e:ff:00:00:00  System Priority  : 32768
Admin Key        : 32768              Oper Key        : 1
Prtr System Id   : 1e:0e:ff:00:00:00  Prtr System Priority : 32768
Prtr Oper Key    : 32768
Standby Signaling : lacp
Port hashing     : port-speed        Port weight speed : 0 gbps
Ports Up        : 2
Weights Up      : 2                Hash-Weights Up  : 2
Threshold Type   : hash-weight-threshold
  Value          : 1
  Action         : down
  Cost           : N/A
Monitor oper group : N/A
MC Peer Address   : 2.2.2.2                MC Peer Lag-id   : 1
MC System Id     : 00:00:00:00:00:01  MC System Priority : 100
MC Admin Key     : 1                MC Active/Standby : active
MC Lacp ID in use : true              MC extended timeout : false
MC Selection Logic : local master decided
MC Config Mismatch : no mismatch
-----
Port-id      Adm  Act/Stdby Opr  Primary  Sub-group  Forced  Prio
-----
1/1/13      up   active  up   yes      2          -      32768
1/1/14      up   active  up           2          -      32768
    
```



Port-id	Role	Exp	Def	Dist	Col	Syn	Aggr	Timeout	Activity
1/1/13	actor	No	No	Yes	Yes	Yes	Yes	Yes	No
1/1/13	partner	No	No	Yes	Yes	Yes	Yes	Yes	Yes
1/1/14	actor	No	No	Yes	Yes	Yes	Yes	Yes	No
1/1/14	partner	No	No	Yes	Yes	Yes	Yes	Yes	Yes

**Output Example: show lag <lag-id> lcap-partner**

```
A:ALU-Dut1# show lag 3 lcap-partner
=====
LAG Partner information
=====
Partner system ID       : ea:3e:ff:00:00:00
Partner system priority : 32768
Partner operational key  : 2
=====

LAG 3 Ports Partner operational information
=====
Port                    Actor Port Prio Key
port
-----
1/1/52                  33908 33909 5   2
1/1/54                  33910 33911 5   2
1/1/56                  33912 33913 7   2
=====

LAG 3 Ports Partner operational state information
=====
Port                    Exp  Def  Dist Col  Syn  Aggr Time Act
                                out
-----
1/1/52                  No  No  Yes  Yes  Yes  Yes  Yes  Yes
1/1/54                  No  No  Yes  Yes  Yes  Yes  Yes  Yes
1/1/56                  No  No  No  No  No  Yes  Yes  Yes
=====

A:ALU-Dut1#

A:Dut-A# show lag 10 lcap-neighbors
=====
LAG Neighbor information
=====
Partner system ID       : de:41:ff:00:00:00
Partner system priority : 32768
Partner operational key  : 32768
=====

LAG port 1/1/6 partner information
=====
Actor port              : 33862
Partner admin system prio : 32768
Partner oper system prio  : 32768
Partner admin system ID   : 00:00:00:00:00:00
Partner oper system ID    : de:41:ff:00:00:00
Partner admin key         : 0
Partner oper key          : 32768
Partner admin port        : (Not Specified)
Partner oper port         : 33863
Partner admin port prio   : 32768
Partner oper port prio    : 32768
=====
```

```

Partner admin state      : (Not Specified)
Partner oper state      : lacp-timeout aggregation synchronization
                          collecting distributing
=====
A:Dut-A#

*A:bksim4001>config>lag# selection-criteria highest-weight subgroup-hold-
time lshow lag 1 detail
ght subgroup-hold-time 10
=====
LAG Details
=====
Description             : To Sim4002
-----
Details
-----
Lag-id                  : 1                      Mode                  : access
Adm                     : down                  Opr                   : down
Thres. Exceeded Cnt    : 0                      Port Threshold       : 0
Thres. Last Cleared    : 01/21/2014 09:00:48    Threshold Action     : down
Dynamic Cost           : false                  Encap Type           : null
Configured Address     : 36:95:ff:00:01:41      Lag-IfIndex          : 1342177281
Hardware Address       : 36:95:ff:00:01:41      Adapt Qos (access)  : distribute
Hold-time Down         : 0.0 sec                Port Type             : standard
Per-Link-Hash          : disabled
Include-Egr-Hash-Cfg  : enabled
Per FP Ing Queuing     : disabled              Per FP Egr Queuing   : disabled
Per FP SAP Instance    : disabled
LACP                   : enabled                Mode                  : passive
LACP Transmit Intvl   : fast                  LACP xmit stdby     : enabled
Selection Criteria     : highest-weight        Slave-to-partner     : disabled
Subgrp hold time      : 20.0 sec              Remaining time       : 2.6 sec
Subgrp selected       : 1                      Subgrp candidate     : 2
Subgrp count          : 2                      Forced                : -
System Id              : 36:95:ff:00:00:00      System Priority       : 32768
Admin Key              : 32768                 Oper Key              : 32768
Prtr System Id        :                        Prtr System Priority  : 0
Prtr Oper Key         : 0
Standby Signaling     : lacp
Port weight (gbps)    : (Not Specified)
Weight Threshold      : 0                      Threshold Action     : down
...
=====

*A:Dut-A# show lag 2 associations per-link-hash sap
=====
SAP Associations
=====
SvcId   SAP                Active Link           Oper  Oper
Class   Weight
-----
2       lag-2:4             1/1/1                1     500
2       lag-2:5             1/1/1                1     100
2       lag-2:6             1/1/26               1     1000
2       lag-2:7             1/1/25               1     1000
=====
Number of SAP associations: 4

A:bksim4001# show lag 1 per-link-hash
=====
Per-link-hash Weight
=====

```

Port	Class	Num Users	Agg Weight
1/1/1	1	10	10
1/1/1	2	0	0
1/1/1	3	2	500

Number of entries: 3

## lag

### Syntax

**lag** *lag-id* **network-aggregate-qos-stats**

### Context

[\[Tree\]](#) (show>qos lag)

### Full Context

show qos lag

### Description

This command displays the aggregate QoS statistics for the default ingress and egress queues configured on a network interface LAG.

### Parameters

***lag-id***

Displays only information about the specified LAG ID.

**Values** 1 to 800

***network-aggregate-qos-stats***

Displays the aggregate QoS statistics about network interface LAG queues.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of network aggregate QoS statistics information.

[Table 250: QoS Lag Field Descriptions](#) describes the output fields.

### Output Example

```
*A:PE# show qos lag 1 network-aggregate-qos-stats
=====
Network Aggregate QoS Statistics for LAG ID 1
=====
-----
Ingress Queue 1          Packets          Octets
  In Profile forwarded :    0                      0
```

```

    In Profile dropped      :      0                0
    Out Profile forwarded  :     320            160000
    Out Profile dropped    :      0                0
    Ingress Queue 2       :      Packets          Octets
    In Profile forwarded   :      0                0
    In Profile dropped     :      0                0
    Out Profile forwarded  :      0                0
    Out Profile dropped    :      0                0
    Ingress Queue 11      :      Packets          Octets
    In Profile forwarded   :      0                0
    In Profile dropped     :      0                0
    Out Profile forwarded  :      0                0
    Out Profile dropped    :      0                0
    Egress Queue 1        :      Packets          Octets
    In/Inplus Prof fwded  :      0                0
    In/Inplus Prof dropped:      0                0
    Out/Exc Prof fwded    :    997022          127618816
    Out/Exc Prof dropped   :      0                0
    Egress Queue 2        :      Packets          Octets
    In/Inplus Prof fwded  :      0                0
    In/Inplus Prof dropped:      0                0
    Out/Exc Prof fwded    :      0                0
    Out/Exc Prof dropped   :      0                0
    -----
    
```

Table 250: QoS Lag Field Descriptions

Label	Description
In Profile forwarded	Displays the number of in-profile packets or octets forwarded for ingress or egress queue
In Profile dropped	Displays the number of in-profile packets or octets dropped for ingress or egress queue
Out Profile forwarded	Displays the number of out-profile packets or octets forwarded for ingress or egress queue
Out Profile dropped	Displays the number of out-profile packets or octets dropped for ingress or egress queue

## lag

### Syntax

**lag** *lag-id* **bfd-session** family {**ipv4** | **ipv6**} **lag-port** *port-id*

**lag** *lag-id* **lacp-statistics**

**lag** *lag-id* **statistics**

### Context

[\[Tree\]](#) (clear lag)

## Full Context

clear lag

## Description

This command clears statistics for the specified LAG ID.

## Parameters

### *lag-id*

Clears the LAG ID.

**Values** 1 to 800

### *bfd-session*

Keyword that clears the specified BFD session.

### *family*

Keyword that clears the IP address family.

### *ipv4*

Keyword that clears IPv4.

### *ipv6*

Keyword that clears IPv6.

### *port-id*

Clears the port ID.

**Values** *slot* [/mda [/port]]

### *lACP-statistics*

Keyword that clears the LACP PDUs statistics.

### *statistics*

Keyword that clears the statistics or the BFD session for the specified LAG ID.

## Platforms

All

## lag

## Syntax

**lag lag-id lag-id**

## Context

[\[Tree\]](#) (tools>dump lag)

## Full Context

tools dump lag

## Description

This command dumps LAG information.

## Parameters

**lag-id**

Specifies the LAG ID.

**Values** 1 to 800

## Platforms

All

```
lag
```

## Syntax

```
lag
```

## Context

[\[Tree\]](#) (tools>perform lag)

## Full Context

```
tools perform lag
```

## Description

This command provides tools for controlling LAG.

## Platforms

All

```
lag
```

## Syntax

```
lag lag-id [lag-id] [bytes | packets | errors | utilization] [interval seconds] [repeat repeat] [absolute | rate]
```

```
lag lag-id network-aggregate-qos-stats [interval seconds] [repeat repeat] [absolute | rate]
```

## Context

[\[Tree\]](#) (monitor lag)

## Full Context

```
monitor lag
```

## Description

This command monitors traffic statistics for Link Aggregation Group (LAG) ports. Statistical information for the specified LAG ID(s) displays at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified LAG ID. The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *lag-id*

Specifies the number of the LAG, with a maximum of five LAG numbers specified in a single statement.

**Values** 1 to 200

### **bytes**

Keyword that displays the statistics in bytes only.

### **packets**

Keyword that displays the statistics in packets only.

### **errors**

Keyword that displays the statistics for errors only.

### **utilization**

Keyword that displays the statistics in percentage utilization only.

### **network-aggregate-qos-stats**

Keyword that displays the aggregate QoS statistics on network interface LAG default ingress and egress queues.

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Keyword that displays the raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Keyword that displays the rate-per-second for each statistic instead of the delta.

**Platforms**

All

**Output**

The following output is an example of monitor lag command information.

**Output Example**

```
A:Dut-B# monitor lag 1 interval 3 repeat 1
=====
Monitor statistics for LAG ID 1
=====
Port-id      Input packets      Output packets
             Input bytes        Output bytes
             Input errors [Input util %]  Output errors [Output util %]
-----
At time t = 0 sec (Base Statistics)
-----
1/2/1        24                 25
             2224              2294
             0                 0
1/2/2        25                 8
             2170             776
             0                 0
-----
Totals       49                 33
             4394            3070
             0                 0
-----
At time t = 3 sec (Mode: Delta)
-----
1/2/1        3                  3
             306              306
             0                 0
1/2/2        0                  0
             0                 0
             0                 0
-----
Totals       3                  3
             306              306
             0                 0
=====

A:Dut-B# monitor lag 1 interval 3 repeat 1 bytes
=====
Monitor statistics for LAG ID 1
=====
Port-id      Input bytes        Output bytes
-----
At time t = 0 sec (Base Statistics)
-----
1/2/1        6100              6170
1/2/2        2514              1120
-----
Totals       8614              7290
```



```

-----
At time t = 3 sec (Mode: Delta)
-----
1/2/1      306                      306
1/2/2      0                        0
-----
Totals     306                      306
=====
    
```

The following output is an example of network aggregate QoS statistics information.

### Output Example

```

*A:PE# monitor lag 1 network-aggregate-qos-stats repeat 1
=====
Monitor Network Aggregate QoS Statistics for LAG ID 1
=====
-----
At time t = 0 sec (Base Statistics)
-----
Ingress Queue 1      Packets      Octets
  In Profile forwarded :    0            0
  In Profile dropped   :    0            0
  Out Profile forwarded :    0            0
  Out Profile dropped   :    0            0
Ingress Queue 2      Packets      Octets
  In Profile forwarded :    0            0
  In Profile dropped   :    0            0
  Out Profile forwarded :    0            0
  Out Profile dropped   :    0            0
Ingress Queue 11     Packets      Octets
  In Profile forwarded :    0            0
  In Profile dropped   :    0            0
  Out Profile forwarded :    0            0
  Out Profile dropped   :    0            0
Egress Queue 1       Packets      Octets
  In/Inplus Prof fwded :    0            0
  In/Inplus Prof dropped:    0            0
  Out/Exc Prof fwded   :    0            0
  Out/Exc Prof dropped :    0            0
Egress Queue 2       Packets      Octets
  In/Inplus Prof fwded :    0            0
  In/Inplus Prof dropped:    0            0
  Out/Exc Prof fwded   :    0            0
  Out/Exc Prof dropped :    0            0
-----
At time t = 11 sec (Mode: Delta)
-----
Ingress Queue 1      Packets      Octets
  In Profile forwarded :    0            0
  In Profile dropped   :    0            0
  Out Profile forwarded : 2124815      271976320
  Out Profile dropped   :    0            0
Ingress Queue 2      Packets      Octets
  In Profile forwarded :    0            0
  In Profile dropped   :    0            0
  Out Profile forwarded :    0            0
  Out Profile dropped   :    0            0
Ingress Queue 11     Packets      Octets
  In Profile forwarded :    0            0
  In Profile dropped   :    0            0
  Out Profile forwarded :    0            0
  Out Profile dropped   :    0            0
Egress Queue 1       Packets      Octets
    
```

```

In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 1109568 1420247040
Out/Exc Prof dropped : 0 0
Egress Queue 2 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
=====
*A:PE# monitor lag 1 network-aggregate-qos-stats rate repeat 1
=====
Monitor Network Aggregate QoS Statistics for LAG ID 1
=====
-----
At time t = 0 sec (Base Statistics)
-----
Ingress Queue 1 Packets Octets
In Profile forwarded : 0 0
In Profile dropped : 0 0
Out Profile forwarded : 0 0
Out Profile dropped : 0 0
Ingress Queue 2 Packets Octets
In Profile forwarded : 0 0
In Profile dropped : 0 0
Out Profile forwarded : 0 0
Out Profile dropped : 0 0
Ingress Queue 11 Packets Octets
In Profile forwarded : 0 0
In Profile dropped : 0 0
Out Profile forwarded : 0 0
Out Profile dropped : 0 0
Egress Queue 1 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
Egress Queue 2 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
-----
At time t = 11 sec (Mode: Rate)
-----
Packets/sec Octets/sec % Port
Ingress Queue 1 Packets Util.
In Profile forwarded : 0 0 0.00
In Profile dropped : 0 0 0.00
Out Profile forwarded : 97675 12502383 1.00
Out Profile dropped : 0 0 0.00
Ingress Queue 2 Packets Octets
In Profile forwarded : 0 0 0.00
In Profile dropped : 0 0 0.00
Out Profile forwarded : 0 0 0.00
Out Profile dropped : 0 0 0.00
Ingress Queue 11 Packets Octets
In Profile forwarded : 0 0 0.00
In Profile dropped : 0 0 0.00
Out Profile forwarded : 0 0 0.00
Out Profile dropped : 0 0 0.00
Egress Queue 1 Packets Octets
In/Inplus Prof fwded : 0 0 0.00
    
```

```
In/Inplus Prof dropped: 0 0 0.00
Out/Exc Prof fwded : 0 0 0.00
Out/Exc Prof dropped : 0 0 0.00
Egress Queue 2 Packets Octets
In/Inplus Prof fwded : 0 0 0.00
In/Inplus Prof dropped: 0 0 0.00
Out/Exc Prof fwded : 97661 12500639 1.00
Out/Exc Prof dropped : 0 0 0.00
=====
```

## 14.20 lanext

### lanext

#### Syntax

lanext

#### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw lanext)

#### Full Context

show subscriber-mgmt vrgw lanext

#### Description

This command displays Wireless LAN Gateway Home LAN Extension information.

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

### lanext

#### Syntax

lanext

#### Context

[\[Tree\]](#) (tools>dump>wlan-gw lanext)

#### Full Context

tools dump wlan-gw lanext

#### Description

Commands in this context dump tools information for WGLAN HLE parameter.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## lanext

### Syntax

lanext

### Context

[\[Tree\]](#) (tools>perform>wlan-gw lanext)

### Full Context

tools perform wlan-gw lanext

### Description

Commands in this context clear tools information for WGLAN HLE parameter.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 14.21 lbm-svc-act-responder

## lbm-svc-act-responder

### Syntax

**lbm-svc-act-responder** [domain {*md-index* | *md-admin-name*}] [association {*ma-index* | *ma-admin-name*}] [mep *mep-id*]

### Context

[\[Tree\]](#) (show>eth-cfm lbm-svc-act-responder)

### Full Context

show eth-cfm lbm-svc-act-responder

### Description

This command displays the MEPs created with the optional **lbm-svc-act-responder** configuration command, which allocates additional resources to facilitate high-speed LBM-to-LBR processing typically used during service activation testing. The optional filters are cumulative. These filters can be used to narrow the focus of the display to a specific area.

## Parameters

*md-index*

Specifies the MD index.

**Values** 1 to 4294967295

*md-admin-name*

Specifies the administrative name for the domain, up to 64 characters.

*ma-index*

Specifies the MA index.

**Values** 1 to 4294967295

*ma-admin-name*

Specifies the administrative name for the association, up to 64 characters.

*mep-id*

Specifies the local MEP ID.

**Values** 1 to 8191

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of ETH CFM LBM service activation responder information, and [Table 251: Output fields: LBM service activation responder](#) describes the output fields.

### Output example

```
*A:node-2# show eth-cfm lbm-svc-act-responder
=====
Eth-CFM SAP Local MEP LBM Service Activation Responder Enabled
=====
Sap          Lvl Dir MdIndex  MaIndex  MepId  SrcMacAddress
  md-admin-name
  ma-admin-name
-----
No Matching Entries
-----
No. of MEPS: 0
=====
Eth-CFM Facility Interface Local MEP LBM Service Activation Responder Enabled
=====
Interface    Lvl Dir MdIndex  MaIndex  MepId  SrcMacAddress
  md-admin-name
  ma-admin-name
-----
No Matching Entries
-----
No. of MEPS: 0
=====
Eth-CFM SAP Primary VLAN Local MEP LBM Service Activation Responder Enabled
=====
```

```

Sap          Lvl Dir MdIndex   MaIndex   MepId  SrcMacAddress
  Primary VlanId
    md-admin-name
    ma-admin-name
-----
No Matching Entries
-----
No. of MEPS: 0
=====
Eth-CFM SDP Local MEP LBM Service Activation Responder Enabled
=====
Sdp          Lvl Dir MdIndex   MaIndex   MepId  SrcMacAddress
  md-admin-name
  ma-admin-name
-----
No Matching Entries
-----
No. of MEPS: 0
=====
Eth-CFM SDP Primary VLAN Local MEP LBM Service Activation Responder Enabled
=====
Sdp          Lvl Dir MdIndex   MaIndex   MepId  SrcMacAddress
  Primary VlanId
    md-admin-name
    ma-admin-name
-----
No Matching Entries
-----
No. of MEPS: 0
=====
    
```

Table 251: Output fields: LBM service activation responder

Label	Description
Sap	Displays the SAP
Sdp	Displays the SDP binding for the bridge
Interface	Displays the interface name
Lvl	Displays the domain level
Dir	Displays the MEP direction
MdIndex	Displays the MD index value
MaIndex	Displays the MA index value
MepId	Displays the maintenance association endpoint identifier
SrcMacAddress	Displays the source MAC address
md-admin-name	Displays the administrative MD name
ma-admin-name	Displays the administrative MA name

## 14.22 ldp

ldp

### Syntax

ldp

### Context

[\[Tree\]](#) (clear>router ldp)

### Full Context

clear router ldp

### Description

Commands in this context set the hold-time during which new auto-rx targeted peers are not generated.

### Platforms

All

ldp

### Syntax

ldp

### Context

[\[Tree\]](#) (show>router ldp)

### Full Context

show router ldp

### Description

This command displays LDP information.

### Platforms

All

## ldp

### Syntax

ldp

### Context

[\[Tree\]](#) (tools>dump>router ldp)

### Full Context

tools dump router ldp

### Description

Commands in this context dump tools for LDP protocol instance.

### Platforms

All

## ldp

### Syntax

ldp

### Context

[\[Tree\]](#) (monitor>router ldp)

### Full Context

monitor router ldp

### Description

This command monitors commands for the LDP instance.

### Platforms

All



## 14.23 ldp fec-egress-statistics

### ldp fec-egress-statistics

#### Syntax

**ldp fec-egress-statistics** [*ip-prefix/mask*]

#### Context

[\[Tree\]](#) (clear>router ldp fec-egress-statistics)

#### Full Context

clear router ldp fec-egress-statistics

#### Description

This command clears LDP FEC egress statistics.

#### Parameters

##### *ip-prefix*

Specify information for the specified IP prefix. Host bits must be 0.

##### *mask*

Specifies the address mask used to indicate the bits of an IP address that are being used for the subnet address.

**Values** IPv4: 0 to 32  
IPv6: 0 to 128

#### Platforms

All

## 14.24 ldp-sync-exit

### ldp-sync-exit

#### Syntax

**ldp-sync-exit**

#### Context

[\[Tree\]](#) (tools>perform>router>isis ldp-sync-exit)

### Full Context

tools perform router isis ldp-sync-exit

### Description

This command terminates LDP synchronization and restores actual cost of an ISIS interface.

### Platforms

All

## ldp-sync-exit

### Syntax

**ldp-sync-exit**

### Context

[\[Tree\]](#) (tools>perform>router>ospf ldp-sync-exit)

[\[Tree\]](#) (tools>perform>router>ospf3 ldp-sync-exit)

### Full Context

tools perform router ospf ldp-sync-exit

tools perform router ospf3 ldp-sync-exit

### Description

This command terminates LDP synchronization and restore actual cost of an OSPF interface.

### Platforms

All

## 14.25 ldp-treetrace

## ldp-treetrace

### Syntax

**ldp-treetrace** [*prefix ip-prefix/mask*] [*detail*]

### Context

[\[Tree\]](#) (show>test-oam ldp-treetrace)

### Full Context

show test-oam ldp-treetrace

## Description

This command displays OAM LDP tree trace information.

## Parameters

### *ip-prefix/mask*

Specifies the address prefix and subnet mask of the destination node.

**Values** ip-prefix: a.b.c.d (host bits must be 0)  
 mask: 0 to 32

### **detail**

Displays detailed information.

## Platforms

All

## Output

The following output example shows OAM LDP tree trace information.

### Output Example

```
*A:ALA-48# show test-oam ldp-treetrace
Admin State           : Up           Discovery State       : Done
Discovery-intvl (min) : 60           Probe-intvl (min)   : 2
Probe-timeout (min)   : 1            Probe-retry          : 3
Trace-timeout (sec)   : 60           Trace-retry          : 3
Max-TTL               : 30           Max-path             : 128
Forwarding-class (fc) : be           Profile              : Out
Total Fecs            : 400         Discovered Fecs     : 400
Last Discovery Start   : 12/19/2006 05:10:14
Last Discovery End     : 12/19/2006 05:12:02
Last Discovery Duration : 00h01m48s
Policy1                : policy-1
Policy2                : policy-2
```

```
*A:ALA-48# show test-oam ldp-treetrace detail
Admin State           : Up           Discovery State       : Done
Discovery-intvl (min) : 60           Probe-intvl (min)   : 2
Probe-timeout (min)   : 1            Probe-retry          : 3
Trace-timeout (sec)   : 60           Trace-retry          : 3
Max-TTL               : 30           Max-path             : 128
Forwarding-class (fc) : be           Profile              : Out
Total Fecs            : 400         Discovered Fecs     : 400
Last Discovery Start   : 12/19/2006 05:10:14
Last Discovery End     : 12/19/2006 05:12:02
Last Discovery Duration : 00h01m48s
Policy1                : policy-1
Policy2                : policy-2
```

#### ===== Prefix (FEC) Info =====

Prefix	Path Num	Last Discovered	Probe State	Discov State	Discov Status
11.11.11.1/32	54	12/19/2006 05:10:15	OK	Done	OK
11.11.11.2/32	54	12/19/2006 05:10:15	OK	Done	OK
11.11.11.3/32	54	12/19/2006 05:10:15	OK	Done	OK

```

*****
14.14.14.95/32      72  12/19/2006 05:11:13  OK   Done   OK
14.14.14.96/32      72  12/19/2006 05:11:13  OK   Done   OK
14.14.14.97/32      72  12/19/2006 05:11:15  OK   Done   OK
14.14.14.98/32      72  12/19/2006 05:11:15  OK   Done   OK
14.14.14.99/32      72  12/19/2006 05:11:18  OK   Done   OK
14.14.14.100/32     72  12/19/2006 05:11:20  OK   Done   OK
=====
Legend: uP - unexplored paths, t0 - trace request timed out
      mH - max hop exceeded, mP - max path exceeded
      nR - no internal resource

*A:ALA-48# show test-oam ldp-treetrace prefix 12.12.12.10/32
Discovery State   : Done                Last Discovered  : 12/19/2006 05:11:02
Discovery Status  : ' OK '
Discovered Paths  : 54                  Failed Hops      : 0
Probe State      : OK                   Failed Probes    : 0

*A:ALA-48# show test-oam ldp-treetrace prefix 12.12.12.10/32 detail
Discovery State   : Done                Last Discovered  : 12/19/2006 05:11:02
Discovery Status  : ' OK '
Discovered Paths  : 54                  Failed Hops      : 0
Probe State      : OK                   Failed Probes    : 0
=====
Discovered Paths
=====
PathDest          Egr-NextHop      Remote-RtrAddr    Discovery-time
DiscoveryTtl      ProbeState        ProbeTmOutCnt     RtnCode
-----
127.1.0.5         10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
127.1.0.9         10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
127.1.0.15        10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
127.1.0.19        10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
127.1.0.24        10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
127.1.0.28        10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
.....
127.1.0.252       10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
127.1.0.255       10.10.1.2        12.12.12.10      12/19/2006 05:11:01
                   7                OK                0                EgressRtr
=====
*A:ALA-48#

*A:ALA-48# show test-oam twamp server
=====
TWAMP Server (port 862)
=====
Admin State : Up                Oper State : Up
Up Time    : 0d 00:00:05
Curr Conn  : 1                  Max Conn   : 32
ConnTimeout : 1800              Conn Reject : 2
Curr Sess  : 2                  Max Sess   : 32
Tests Done : 5                  Tests Rej  : 0
Tests Abort : 0
TstPktsRx : 999                TstPktsTx : 999
  
```

```

=====
Prefix      : 10.0.0.0/8
Description : NMS-West
=====
Admin State : Up                               Oper State : Up
Curr Conn   : 1                               Max Conn   : 32
Conn Reject : 0
Curr Sess   : 2                               Max Sess   : 32
Tests Done  : 5                               Tests Rej   : 0
Tests Abort : 0
TstPktsRx  : 999                             TstPktsTx  : 999
-----
Client      Sessions                               Idle      TstPktsRx  TstPktsTx
           Curr/Done/Rej/Abort
-----
10.1.1.1   2/5/0/0                               920       999        999
=====

Prefix      : 10.0.0.0/16
Description : NMS-West-Special
=====
Admin State : Up                               Oper State : Up
Curr Conn   : 0                               Max Conn   : 32
Conn Reject : 0
Curr Sess   : 0                               Max Sess   : 32
Tests Done  : 0                               Tests Rej   : 0
Tests Abort : 0
TstPktsRx  : 0                               TstPktsTx  : 0
-----
Client      Sessions                               Idle      TstPktsRx  TstPktsTx
           Curr/Done/Rej/Abort
-----
=====
    
```

## 14.26 learned-remote-mac

### learned-remote-mac

#### Syntax

**learned-remote-mac** [domain {*md-index* | *md-admin-name*}] [association {*ma-index* | *ma-admin-name*}]  
 [mep *mep-id*] [remote-mepid *mep-id*]

#### Context

[\[Tree\]](#) (show>eth-cfm learned-remote-mac)

#### Full Context

show eth-cfm learned-remote-mac

#### Description

This command displays the local MEP and remote MEP MAC address information relationship. The MAC address information in this table is populated and used in place of the remote *mep-id* in various ETH-CFM tests that opt to use the **remote-mepid** *mep-id* configuration instead of specifying the remote peer

MAC address. This table is maintained by the ETH-CC process. If a CCM has not been received for a remote peer, there is no entry in the **learned-remote-mac** table. However, when a CCM is received for an expected peer, an entry in the **learned-remote-mac** table is populated and maintained. This entry remains until the remote peer statement is deleted from the association, the local MEP is deleted, or if a manual **clear>eth-cfm>learned-remote-mac** command has been executed for the specified local MEP.

The optional parameters are treated as independent filters that are combined to refine the output. Omitting all optional parameters produces output that includes the entire table.

## Parameters

*md-index*

Specifies the MD index.

**Values** 1 to 4294967295

*md-admin-name*

Specifies the MD name, up to 64 characters.

*ma-index*

Specifies the MA index.

**Values** 1 to 4294967295

*ma-admin-name*

Specifies the MD name, up to 64 characters.

**mep** *mep-id*

Specifies the local *mep-id*.

**Values** 1 to 8191

**remote-mepid** *mep-id*

Specifies the remote *mep-id*.

**Values** 1 to 8191

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of learned remote MAC information, and [Table 252: Learned Remote MAC Field Descriptions](#) describes the output fields.

### Output example

```
show eth-cfm learned-remote-mac
=====
Eth-CFM Learned Remote MEPID MAC Address
=====
MdIndex   MaIndex   L-MepId R-MepId  Learned Remote MAC Stale Updated
  md-admin-name
  ma-admin-name
-----
10         11400115  2       1       00:00:00:00:00:29  False False
```

```

10
11400115
10      11600117  2      1      00:00:00:00:00:29  False False
10
11600117
12      1000      928    929    00:00:01:01:09:29  False False
12
vpls-100-1
12      1000      928    1028   00:00:01:01:10:28  False False
12
vpls-100-1
12      1000      928    1029   00:00:01:01:10:29  False False
12
vpls-100-1
12      1000      1028   928    00:00:01:01:09:28  False False
12
vpls-100-1
12      1000      1028   929    00:00:01:01:09:29  False False
12
vpls-100-1
12      1000      1028   1029   00:00:01:01:10:29  False False
12
vpls-100-1
=====
    
```

Table 252: Learned Remote MAC Field Descriptions

Label	Description
MdIndex	Specifies the local MEP domain index
MaIndex	Specifies the local MEP association index
L-MepId	Specifies the local MEP identifier
R-MepId	Specifies the remote MEP identifier
Learned Remote MAC	Specifies the learned MAC address of the remote peer
Stale	Results of the comparison between the CCM database and the learned-remote-mac table False — match True — mismatch
Updated	Whether the learned MAC in this table has been updated in the last CCM interval
md-admin-name	Displays the administrative MD name.
ma-admin-name	Displays the administrative MA name.

## learned-remote-mac

### Syntax

**learned-remote-mac** [**mep** *mep-id* [**remote-mepid** *mep-id*]] **domain** *md-index* **association** *ma-index*

### Context

[\[Tree\]](#) (clear>eth-cfm learned-remote-mac)

### Full Context

clear eth-cfm learned-remote-mac

### Description

This command clears the stored MAC addresses in the CFM **learned-remote-mac** address table. A valid MAC address must exist in the **learned-remote-mac** table for a successful PDU generation when that test uses the **remote-mepid** *mep-id* option in place of a *mac-address*.

The local **domain** and **association** parameters must be included as part of the clear command. The **mep** and **remote-mepid** parameters are optional. The clear command clears all matching entries based on the configured parameters. The table is populated based on the reception and processing of ETH-CC PDUs.

### Parameters

#### **mep** *mep-id*

Specifies the local MEP ID.

**Values** 1 to 8191

#### **remote-mepid** *mep-id*

Specifies the remote MEP ID.

**Values** 1 to 8191

#### **md-index**

Specifies the MD index.

**Values** 1 to 4294967295

#### **ma-index**

Specifies the MA index.

**Values** 1 to 4294967295

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS



## 14.27 lease-state

### lease-state

#### Syntax

```
lease-state [wholesaler service-id] [sap sap-id | sdp sdp-id:vc-id | interface interface-name | ip-address ip-address [/mask] | chaddr ieee-address | mac ieee-address | {[port port-id] [no-inter-dest-id | inter-dest-id inter-dest-id]}] [session { none | ipoe}] [detail]
```

#### Context

[\[Tree\]](#) (show>service>id>dhcp lease-state)

#### Full Context

```
show service id dhcp lease-state
```

#### Description

This command displays DHCP lease state related information.

#### Parameters

##### **service-id**

Specifies the service ID of the wholesaler.

**Values** 1 to 2148278316, *svc-name*: up to 64 characters

##### **sap-id**

Specifies the physical port identifier portion of the SAP definition.

##### **sdp-id**

The SDP identifier.

**Values** 1 to 17407

##### **vc-id**

The virtual circuit ID on the SDP ID for which to display information.

**Values** 1 to 4294967295

##### **interface-name**

Displays information for the specified IP interface.

##### **ip-address[/mask]**

Displays information associated with the specified IP address.

##### **ieee-address**

Specifies the source MAC address.

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx (cannot be all zeros)

**port-id**

Specifies the port ID.

**no-inter-dest-id**

Displays the information about no intermediate destination ID.

**inter-dest-id**

Displays information about the specified intermediate destination ID, up to 64 characters.

**session**

Shows DHCPv4 lease states for hosts that are associated with an IPE session or for hosts that are not associated with an IPE session.

**Values** none, ipoe

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of the DHCP **lease-state** command.

**Output Example**

```
A:node-2# show service id 13 dhcp lease-state
=====
DHCP lease state table, service 13
=====
IP Address      Mac Address      Sap/Sdp Id      Remaining      Lease      MC
                LifeTime        Origin          Stdby
-----
10.13.40.1      00:00:00:00:00:13 1/1/1:13        00h00m58s     Radius
-----
Number of lease states : 1
=====
A:ALA-_Dut-A#

# show service id 1000 dhcp lease-state detail
=====
DHCP lease states for service 1000
=====
Service ID      : 1000
IP Address      : 10.250.21.2
Client HW Address : 00:02:01:00:00:01
Subscriber-interface : sub-int-2
Group-interface  : group-int-2-3
SAP              : [1/1/2:2513.20]
Termination Type : local
Up Time         : 0d 00:04:51
Remaining Lease Time : 0d 00:05:09
Remaining SessionTime: N/A
Persistence Key  : 0x00000000
Sub-Ident       : "sub-02-01"
Sub-Profile-String : "sub-profile-1"
SLA-Profile-String : "sla-profile-1"
```

```

App-Profile-String : ""
Lease ANCP-String : ""
Lease Int Dest Id : ""
Category-Map-Name : ""
Lease Info origin : DHCP
Ip-Netmask : 255.255.255.0
Broadcast-Ip-Addr : N/A
Default-Router : 10.250.21.254
Primary-Dns : N/A
Secondary-Dns : N/A
Primary-Nbns : N/A
Secondary-Nbns : N/A
ServerLeaseStart : 10/07/2020 15:00:19
ServerLastRenew : 10/07/2020 15:00:19
ServerLeaseEnd : 10/07/2020 15:10:19
Session-Timeout : N/A
IPoE|PPP session : IPoE
Lease-Time : 0d 00:10:00
DHCP Server Addr : 192.0.2.2
Relay Agent Information
  Circuit Id : pe2|1000|group-int-2-3|1/1/2:2513.20
Radius Class 1 : This is a Class attribute
Radius User-Name : "00:02:01:00:00:01"
-----
Overrides
-----
Dir Type Id PIR CIR CBS MBS WRR
Class-Weight
-----
Egr Queue 1 1234 N/A 350000 350000 N/A
N/A
-----
No. of Overrides: 1
-----
SLA Profile Instance Session Limit Overrides
ipoe : 2
-----
Number of lease states : 1
=====
    
```

**Table 253: Service DHCP Lease-state Field Descriptions** describes service DHCP lease-state information.

*Table 253: Service DHCP Lease-state Field Descriptions*

Field	Description
Service ID	The service ID
IP Address	The IP address
Client HW Address	The client hardware address
Subscriber-interface	The subscriber interface name
Group-interface	The group interface name
SAP	The SAP
Termination Type	The termination type

Field	Description
Up Time	The up time
Remaining Lease Time	The remaining lease time
Remaining SessionTime	The remaining session time
Persistence Key	The persistence key
Sub-Ident	The name of the subscriber identification policy
Sub-Profile-String	The subscriber profile string
SLA-Profile-String	The name of the SLA profile
App-Profile-String	The application profile string
Lease ANCP-String	The lease ANCP string
Lease Int Dest Id	The lease internal destination ID
Category-Map-Name	The category map name
Lease Info origin	The origin of the lease
Ip-Netmask	The IP netmask address
Broadcast-Ip-Addr	The broadcast IP address
Default-Router	The default router
Primary-Dns	The primary DNS address
Secondary-Dns	The secondary DNS address
Primary-Nbns	The primary NBNS
Secondary-Nbns	The secondary NBNS
ServerLeaseStart	The date and time of the start of the server lease
ServerLastRenew	The date and time of the renewal of the server lease
ServerLeaseEnd	The date and time of the end of the server lease
Session-Timeout	The session timeout value
IPoE PPP session	The type of session
Lease-Time	The lease time
DHCP Server Addr	The DHCP server IP address
Relay Agent Information	

Field	Description
Circuit Id	The circuit ID
Radius Class 1	The RADIUS Class 1 value
Radius User-Name	The RADIUS user name
Overrides: (only shown when overrides are active)	
Dir Type	The direction type
Id	The ID
PIR	The PIR value
CIR	The CIR value
CBS	The CBS value
MBS	The MBS value
WRR	The WRR value
Class-Weight	The class weight
No. of Overrides	The total number of overrides
Subscriber Host Limit Overrides and SLA Profile Instance Host Limit Overrides: (only shown when overrides are active)	
ipv4-arp	The total number of IPv4 ARP hosts limit
ipv4-dhcp	The total number of IPv4 DHCP hosts limit
ipv4-ppp	The total number of IPv4 PPP hosts limit
ipv4-overall	The total number of IPv4 hosts limit
ipv6-pd-ipoe-dhcp	The total number of IPv6 IPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-ppp-dhcp	The total number of IPv6 PPPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-overall	The total number of IPv6 DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-wan-ipoe-dhcp	The total number of IPv6 IPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ipoe-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit

Field	Description
ipv6-wan-ppp-dhcp	The total number of IPv6 PPPoE DHCP WAN hosts (IANA) limit
ipv6-wan-ppp-slaac	The total number of IPv6 IpoE SLAAC WAN hosts limit
ipv6-wan-overall	The total number of IPv6 WAN hosts limit
ipv6-overall	The total number of IPv6 hosts limit
lac-overall	The total number of L2TP LAC hosts limit
overall	The total number of subscriber hosts limit
Subscriber Session Limit Overrides and SLA Profile Instance Session Limit Overrides: (only shown when overrides are active)	
ipoe	The total number of IpoE sessions limit
ppoe-local	The total number of PPPoE local terminated sessions (PTA) limit
ppoe-lac	The total number of PPPoE L2TP LAC sessions limit
ppoe-overall	The total number of PPPoE sessions limit
l2tp-lns	The total number of L2TP LNS sessions limit
l2tp-lts	The total number of L2TP LTS sessions limit
l2tp-overall	The total number of L2TP sessions limit
overall	The total number of subscriber sessions limit
Number of lease states	The total number of lease states

### Routed CO Output Example

```

A:ALA-_Dut-A# show service id 13 dhcp lease-state
=====
DHCP lease state table, service 13
=====
IP Address      Mac Address      Sap/Sdp Id      Remaining Lease MC
                LifeTime         Origin          Stdby
-----
10.13.40.1     00:00:00:00:00:13 1/1/1:13        00h00m58s    Radius
-----
Number of lease states : 1
=====
A:ALA-_Dut-A#

A:ALA-_Dut-A# show service id 13 dhcp lease-state detail
=====
DHCP lease states for service 13
=====
    
```

```
Service ID      : 13
IP Address      : 10.13.40.1
Mac Address     : 00:00:00:00:00:13
Subscriber-interface : ies-13-10.13.1.1
Group-interface : intf-13
SAP             : 1/1/1:13
Remaining Lifetime : 00h00m58s
Persistence Key : N/A

Sub-Ident      : "TEST"
Sub-Profile-String : "ADSL_G0"
SLA-Profile-String : "BE-Video"
Lease ANCP-String : ""

Sub-Ident origin : Radius
Strings origin   : Radius
Lease Info origin : Radius

Ip-Netmask      : 255.255.0.0
Broadcast-Ip-Addr : 10.13.255.255
Default-Router  : N/A
Primary-Dns     : 10.13.254.254
Secondary-Dns   : 10.13.254.253

ServerLeaseStart : 12/24/2006 23:48:23
ServerLastRenew  : 12/24/2006 23:48:23
ServerLeaseEnd   : 12/24/2006 23:49:23
Session-Timeout  : 0d 00:01:00
DHCP Server Addr : N/A

Persistent Relay Agent Information
  Circuit Id      : ancstb6_Dut-A|13|intf-13|0|13
  Remote Id      : stringtest
```

```
-----
Number of lease states : 1
=====
```

```
A:ALA-_Dut-A#
```

### Wholesaler/Retailer Output Example

```
A:ALA-_Dut-A# show service id 2000 dhcp lease-state detail
```

```
=====
DHCP lease states for service 2000
-----
```

```
Wholesaler 1000 Leases
-----
```

```
Service ID      : 1000
IP Address      : 10.13.1.254
Mac Address     : 00:00:00:00:00:13
Subscriber-interface : whole-sub
Group-interface : intf-13
Retailer       : 2000
Retailer If    : retail-sub
SAP            : 1/1/1:13
Remaining Lifetime : 00h09m59s
Persistence Key : N/A

Sub-Ident      : "TEST"
Sub-Profile-String : "ADSL_G0"
SLA-Profile-String : "BE-Video"
```

```
Lease ANCP-String      : ""
Sub-Ident origin      : Retail DHCP
Strings origin        : Retail DHCP
Lease Info origin     : Retail DHCP

Ip-Netmask            : 255.255.0.0
Broadcast-Ip-Addr    : 10.13.255.255
Default-Router        : N/A
Primary-Dns           : N/A
Secondary-Dns         : N/A

ServerLeaseStart      : 12/25/2006 00:29:41
ServerLastRenew       : 12/25/2006 00:29:41
ServerLeaseEnd        : 12/25/2006 00:39:41
Session-Timeout       : 0d 00:10:00
DHCP Server Addr     : 10.232.237.2

Persistent Relay Agent Information
Circuit Id           : 1/1/1:13
Remote Id            : stringtest

Subscriber Host Limit Overrides
ipv4-arp             : 1
ipv4-dhcp            : 1
ipv4-ppp             : 1
ipv4-overall         : 1
ipv6-pd-ipoe-dhcp   : 1
ipv6-pd-ppp-dhcp    : 1
ipv6-pd-overall     : 1
ipv6-wan-ipoe-dhcp  : 1
ipv6-wan-ipoe-slaac : 1
ipv6-wan-ppp-dhcp   : 1
ipv6-wan-ppp-slaac  : 1
ipv6-wan-overall    : 1
ipv6-overall         : 1
lac-overall         : 1
overall              : 1

SLA Profile Instance Host Limit Overrides
ipv4-arp             : 1
ipv4-dhcp            : 1
ipv4-ppp             : 1
ipv4-overall         : 1
ipv6-pd-ipoe-dhcp   : 1
ipv6-pd-ppp-dhcp    : 1
ipv6-pd-overall     : 1
ipv6-wan-ipoe-dhcp  : 1
ipv6-wan-ipoe-slaac : 1
ipv6-wan-ppp-dhcp   : 1
ipv6-wan-ppp-slaac  : 1
ipv6-wan-overall    : 1
ipv6-overall         : 1
lac-overall         : 1
overall              : 1

Subscriber Session Limit Overrides
ipoe                 : 1
pppoe-local         : 1
pppoe-lac           : 1
pppoe-overall       : 1
l2tp-lns            : 1
l2tp-lts            : 1
l2tp-overall        : 1
overall              : 1

SLA Profile Instance Session Limit Overrides
```



```
ipoe          : 1
pppoe-local  : 1
pppoe-lac    : 1
pppoe-overall : 1
l2tp-lns     : 1
l2tp-lts     : 1
l2tp-overall : 1
overall      : 1
```

```
-----
Number of lease states : 1
=====
```

```
A:ALA- _Dut-A#
```

## lease-state

### Syntax

**lease-state** [**detail**] [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

**lease-state** [**detail**] **interface** *interface-name* [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

**lease-state** [**detail**] *ipv6-address* *ipv6-prefix*[/*prefix-length*] [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

**lease-state** [**detail**] **mac** *ieee-address* [**wholesaler** *service-id*] [**session** {**none** | **ipoe** | **ppp**}] [**router-advertisement-policy** *policy-name*]

### Context

[\[Tree\]](#) (show>service>id>dhcp6 lease-state)

### Full Context

show service id dhcp6 lease-state

### Description

This command displays DHCPv6 lease state information.



#### Note:

The **wholesaler** *service-id* parameter is applicable only in the VPRN context.

### Parameters

#### **detail**

Displays detailed lease state information.

#### **service-id**

The service ID of the wholesaler. When specified in this context, SAP, SDP, interface, IP address and MAC parameters are ignored. This parameter only applies to the 7750 SR.

**Values** *service-id*: 1 to 2147483647

### session

Shows DHCPv6 lease states for clients that are associated with an IPoE session or for clients that are associated with a PPP session or for clients that are not associated with an IPoE session.

**Values** none, ipoe, ppp

### *policy-name*

Specifies the name of the router advertisement policy.

### *interface-name*

Specifies the interface name, up to 32 characters.

### *ipv6-address[/mask]*

Shows information for the specified IPv6 address and mask.

### *ieee-address*

Shows information for the specified 48-bit MAC address, expressed in the form *aa:bb:cc:dd:ee:ff* or *aa-bb-cc-dd-ee-ff*, where *aa*, *bb*, *cc*, *dd*, *ee* and *ff* are hexadecimal numbers.

## Platforms

All

## Output

The following output is an example of DHCPv6 lease state information.

### Output Example

```
*A:eng-BNG-2# show service id 1000 dhcp6 lease-state detail
=====
DHCP lease states for service 1000
=====
Service ID           : 1000
IP Address           : 2001:1000:0:4::1/128
Client HW Address    : 00:00:10:10:12:12
Subscriber-interface : sub-int-01
Group-interface      : grp-int-01
SAP                  : 1/1/20:841
Termination Type     : local
Up Time              : 0d 00:00:13
Remaining Lease Time : 0d 23:59:47 (Lease Split)
Remaining SessionTime: N/A
Persistence Key      : N/A
Sub-Ident            : "host-1"
Sub-Profile-String   : "no-prof"
SLA-Profile-String   : "no-prof"
App-Profile-String   : ""
Lease ANCP-String    : ""
Lease Int Dest Id    : ""
Category-Map-Name    : ""
Dhcp6 ClientId (DUID): 00030001000010101212
Dhcp6 IAID           : 0
Dhcp6 IAID Type      : non-temporary
Dhcp6 Client Ip      : fe80:db8:200:10ff:fe10:1212
Primary-Dns          : N/A
Secondary-Dns        : N/A
Pool Name            : ""
```

```
Dhcp6 Server Addr      : ::10
Dhcp6 ServerId (DUID) : 00030001d854ff000000
Dhcp6 InterfaceId     : test
Dhcp6 RemoteId        : N/A
Radius sub-if prefix  : N/A
Router adv. policy    : ra-policy-01
Lease Info origin     : DHCP
ServerLeaseStart      : 02/13/2017 22:04:24
ServerLastRenew      : 02/13/2017 22:04:24
ServerLeaseEnd        : 02/14/2017 22:04:24
Session-Timeout       : N/A
IPoE|PPP session     : No
Radius User-Name      : "00:00:10:10:12:12"
```

-----  
 Overrides  
 -----

Dir	Type	Id	PIR	CIR	CBS	MBS	WRR
Class-Weight							
Egr	Queue	1	1234	N/A	350000	350000	N/A
N/A							

-----  
 No. of Overrides: 1  
 -----

SLA Profile Instance Session Limit Overrides  
 ipoe : 2  
 -----

Number of lease states : 1  
 =====

```
*A:Dut-A#show service id 13 dhcp6 lease-state router-advertisement-policy ra-policy-01
```

=====

DHCP lease state table, service 13

=====

IP Address	Mac Address	Sap/Sdp Id	Remaining LeaseTime	Lease Origin	MC Stdby
2013:bad:beaf::1/128	00:00:00:00:00:13	1/1/1:13	23h47m34s	DHCP	
2013:bad:beaf::2/128	00:00:00:00:00:14	1/1/1:13	23h52m36s	DHCP	
2013:bad:beaf::3/128	00:00:00:00:00:15	1/1/1:13	23h54m17s	DHCP	

-----  
 Number of lease states : 3  
 =====

\*A:Dut-A#

**Table 254: DHCPv6 Lease State Router Advertisement Field Descriptions** describes DHCPv6 lease state router advertisement policy output fields.

*Table 254: DHCPv6 Lease State Router Advertisement Field Descriptions*

Field	Description
Service ID	The service ID provided by the access node to which this subnet is bound

Field	Description
IP Address	The IP address of the service
Client HW Address	The MAC address of the client
Subscriber-Interface	The subscriber interface for the service
Group-interface	The group interface for the service
Sap/Sdp ID	The service SAP and SDP IDs
Termination Type	The PPP session type
Up Time	The value of the up time at the time of the last modification of an entry
Remaining Lease Time	The time left before the DHCPv6 lease expires. The client should renew its lease before this timer expires. (Lease Split) indicates that DHCPv6 lease split is active.
Remaining SessionTime	The time left for this session
Persistence Key	The persistence key
Sub-Ident	The subscriber identification policy name
Sub-Profile-String	The subscriber profile policy name
App-Profile-String	The application profile policy name
Lease ANCP-String	The ANCP string
Category-Map-Name	The category map name
Dhcp6 ClientID (DUID)	The DHCP client ID
Dhcp6 IAID	The DHCPv6 Identity Association Identifier (IAID) assigned by the client
Dhcp6 IAID Type	The DHCPv6 Identity Association type of this lease (non-temporary or prefix)
Dhcp6 Client Ip	The DHCPv6 IP address of the client
Primary-Dns	The primary DNS, if configured
Secondary-Dns	The secondary DNS, if configured
Pool Name	The pool name
Dhcp6 Server Addr	The DHCPv6 server address
Dhcp6 ServerID (DUID)	The DHCPv6 server ID

Field	Description
Dhcp6 Interfaceld	The DHCPv6 interface ID
Dhcp6 Remoteld	The DHCPv6 remote ID
Radius sub-if prefix	The RADIUS subscriber interface prefix
Router adv. policy	The router advertisement policy
Lease Info origin	The lease info origin
ServerLeaseStart	The date and time the lease was created
ServerLastRenew	The last renew was done for this lease
ServerLeaseEnd	The time left for this lease
Session-Timeout	The session timeout interval
IPoE PPP	IPoE or PPP
Radius User-Name	The RADIUS user name
Overrides: (only shown when overrides are active)	
Dir Type	The direction type
Id	The ID
PIR	The PIR value
CIR	The CIR value
CBS	The CBS value
MBS	The MBS value
WRR	The WRR value
Class-Weight	The class weight
No. of Overrides	The total number of overrides
Subscriber Host Limit Overrides and SLA Profile Instance Host Limit Overrides: (only shown when overrides are active)	
ipv4-arp	The total number of IPv4 ARP hosts limit
ipv4-dhcp	The total number of IPv4 DHCP hosts limit
ipv4-ppp	The total number of IPv4 PPP hosts limit
ipv4-overall	The total number of IPv4 hosts limit

Field	Description
ipv6-pd-ipoe-dhcp	The total number of IPv6 IPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-ppp-dhcp	The total number of IPv6 PPPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-overall	The total number of IPv6 DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-wan-ipoe-dhcp	The total number of IPv6 IPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ipoe-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit
ipv6-wan-ppp-dhcp	The total number of IPv6 PPPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ppp-slaac	The total number of IPv6 PPPoE SLAAC WAN hosts limit
ipv6-wan-overall	The total number of IPv6 WAN hosts limit
ipv6-overall	The total number of IPv6 hosts limit
lac-overall	The total number of L2TP LAC hosts limit
overall	The total number of subscriber hosts limit
Subscriber Session Limit Overrides and SLA Profile Instance Session Limit Overrides: (only shown when overrides are active)	
ipoe	The total number of IPoE sessions limit
ppoe-local	The total number of PPPoE local terminated sessions (PTA) limit
ppoe-lac	The total number of PPPoE L2TP LAC sessions limit
ppoe-overall	The total number of PPPoE sessions limit
l2tp-lns	The total number of L2TP LNS sessions limit
l2tp-lts	The total number of L2TP LTS sessions limit
l2tp-overall	The total number of L2TP sessions limit
overall	The total number of subscriber sessions limit
Number of lease states	The total number of lease states

## lease-state

### Syntax

```
lease-state all [no-dhcp-release]
lease-state [port port-id] inter-dest-id intermediate-destination-id [no-dhcp-release]
lease-state [port port-id] no-inter-dest-id [no-dhcp-release]
lease-state ip-address ip-address [/mask] [no-dhcp-release]
lease-state mac ieee-address [no-dhcp-release]
lease-state port port-id [no-dhcp-release]
lease-state sap sap-id [no-dhcp-release]
lease-state sdp sdp-id:vc-id [no-dhcp-release]
```

### Context

[\[Tree\]](#) (clear>service>id>dhcp lease-state)

### Full Context

```
clear service id dhcp lease-state
```

### Description

This command removes the DHCPv4 lease state information from the system and sends a DHCP release message on behalf of the client to the DHCP server. A DHCP release is not sent when the remaining lease-time is less than 5 minutes or when the **no-dhcp-release** parameter is specified.

### Parameters

#### **all**

Clears all lease state statistics.

#### ***port-id***

Displays information about the specified port ID.

#### ***intermediate-destination-id***

Displays information about the specified intermediate destination ID, up to 32 characters.

#### **no-inter-dest-id**

Displays the information about no intermediate destination ID.

#### ***ip-address[/mask]***

The IP address of the IP interface. The *ip-address* portion of the **address** command specifies the IP host address that is used by the IP interface within the subnet. This address must be unique within the subnet and specified in dotted decimal notation. Allowed values are IP addresses in the range 1.0.0.0 – 223.255.255.255 (with support of /31 subnets).

**Values** a.b.c.d.

mask: 1 to 32

### ***ieee-address***

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

### ***sap-id***

Specifies the physical port identifier portion of the SAP definition.

### ***sdp-id***

The SDP ID to be cleared.

**Values** 1 to 17407

### ***vc-id***

The virtual circuit ID on the SDP ID to be cleared.

**Values** 1 to 4294967295

### ***no-dhcp-release***

Specifies that the node clears the state without sending the DHCP release message.

## **Platforms**

All

## **lease-state**

### **Syntax**

**lease-state all** [**no-dhcp-release**]

**lease-state ipv6-address** *ipv6-prefix* [*prefix-length*] [**no-dhcp-release**]

**lease-state mac** *ieee-address* [**no-dhcp-release**]

**lease-state sap** *sap-id* [**no-dhcp-release**]

### **Context**

[\[Tree\]](#) (clear>service>id>dhcp6 lease-state)

### **Full Context**

clear service id dhcp6 lease-state

### **Description**

This command removes the DHCPv6 lease state information from the system and sends a DHCP release message on behalf of the client to the DHCP server. A DHCP release is not sent when the remaining lease-time is less than 5 minutes or when the no-dhcp-release parameter is specified.



## Parameters

### all

Clears all lease-states.

### no-dhcp-release

Specifies that the node clears the state without sending the DHCP release message.

### ipv6-prefix[/prefix-length]

Clears routes only matching the specified IP address and length and only applies to the 7750 SR.

Values	ipv6	ipv6-prefix[/pref*:	x:x:x:x:x:x:x (eight 16-bit pieces)
			x:x:x:x:x:d.d.d.d
			x: [0 to FFFF]H
			d: [0 to 255]D
		prefix-length:	1 to 128

### ieee-address

Clears DHCP6 MAC address lease state information. The 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

### sap-id

Clears the specified lease state SAP information.

## Platforms

All

## 14.28 leases

### leases

#### Syntax

**leases** [detail]

**leases** *ip-address[/mask]* **address-from-user-db** [detail]

**leases** *ip-address[/mask]* **dhcp-host** *dhcp-host-name* [detail]

**leases** *ip-address[/mask]* **ppp-host** *ppp-host-name* [detail]

**leases** *ip-address[/mask]* [detail]

## Context

[\[Tree\]](#) (show>router>dhcp>local-dhcp-server leases)

## Full Context

show router dhcp local-dhcp-server leases

## Description

This command displays the DHCP leases.

## Parameters

### *ip-address*

Specifies the base IP address of the subnet. This address must be unique within the subnet and specified in dotted decimal notation. Allowed values are IP addresses in the range 1.0.0.0 – 223.255.255.255 (with support of /31 subnets).

### *mask*

The subnet mask in dotted decimal notation.

**Values** 0 to 32

### *address-from-user-db*

Displays only leases that have IP addresses from the local-user-db.

### *dhcp-host-name*

Shows the leases that match a certain DHCP host from the local-user-db.

### *ppp-host-name*

Displays the leases that match a certain PPPoE host from the local-user-db.

### *detail*

Displays detailed information of all leases that fall into the indicated subnet.

The command with no parameters shows all leases from the local-user-db.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of lease information

### Output Example

```
*A:ALA-48>show>router>dhcp>local-dhcp-server# leases ip-address 10.0.0.4
=====
Leases for DHCP server test router Base
=====
IP Address      Lease State      Mac Address      Remaining Clnt
  PPPoE user name/Opt82 Circuit Id      LifeTime  Type
-----
No leases found
*A:ALA-48>show>router>dhcp>local-dhcp-server#
```

[Table 255: Leases Field Descriptions](#) describes leases output fields.

Table 255: Leases Field Descriptions

Field	Description
IP Address	The IP address for the specified lease
Lease State	The lease state of the IP address
Mac Address	The MAC address of the lease
Remaining Lifetime	The remaining lifetime of the lease
Clnt Type	The address type
PPPoE user name	The PPPoE user name
Opt82	The option number that the DHCP server uses to send the identification strings to the PPPoE client
Circuit ID	The circuit ID from Option 82

## leases

### Syntax

**leases** [*ipv6-address/prefix-length*] [*type*] [*state*] [**detail**]

### Context

[\[Tree\]](#) (show>router>dhcp6>local-dhcp-server leases)

### Full Context

```
show router dhcp6 local-dhcp-server leases
```

### Description

This command displays the DHCP6 leases.

### Parameters

#### *ipv6-address*

Specifies the base IP address of the subnet. This address must be unique within the subnet and specified in dotted decimal notation. Allowed values are IP addresses in the range 1.0.0.0 – 223.255.255.255 (with support of /31 subnets).

#### *mask*

The subnet mask in dotted decimal notation.

**Values** 0 to 32

**type**

Displays the lease type.

**Values** pd, wan-host

**state**

Displays the state of the lease.

**Values** advertised, remove-pending, held

**detail**

Displays detailed information of all leases that fall into the indicated subnet.

The command with no parameters shows all leases from the local user database.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of lease information.

**Output Example**

```
show router 600 dhcp6 local-dhcp-server "d6" leases
=====
Leases for DHCPv6 server d6
=====
IP Address/Prefix          Lease State      Remaining      Fail
Link-local Address        LifeTime        Ctrl
-----
2001:AAAA::1/128
FE80::220:FCFF:FE1E:CD52   stable           23h58m52s     local
-----
1 leases found
=====
```

Table 256: DHCP6 Lease Field Descriptions describes DHCP6 lease fields.

Table 256: DHCP6 Lease Field Descriptions

Field	Description
IP Address/Prefix	The IP address and prefix of the lease
Link-local Address	The link local address of the lease
Lease State	The lease state of the lease
Remaining Lifetime	The remaining lifetime of the lease
Fail Ctrl	The type of failover control
No. leases found	The total number of leases

## leases

### Syntax

**leases** *ip-address[/mask]* [*state*]

**leases all** [*state*]

### Context

[\[Tree\]](#) (clear>router>dhcp>server leases)

### Full Context

clear router dhcp local-dhcp-server leases

### Description

This command clears DHCP leases.

### Parameters

***ip-address[/mask]***

Clears the specified IP address and mask.

***state***

Clears the state of the lease to be removed.

**Values** offered, stable, force-renew-pending, remove-pending, held, internal, internal-orphan, internal-held, sticky

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## leases

### Syntax

**leases** [*ipv6-address/prefix-length*] [*type*] [*state*]

**leases all** [*type*] [*state*]

### Context

[\[Tree\]](#) (clear>router>dhcp6>server leases)

### Full Context

clear router dhcp6 local-dhcp-server leases

### Description

This command removes the specified leases in the specified local DHCPv6 server.

## Parameters

### *ipv6-address/prefix-length*

Specifies the prefix of the leases to be removed.

### *type*

Specifies the type of the lease to be removed.

**Values** pd, slaac, wan-host

### *state*

Specifies the state of the lease to be removed.

**Values** advertised, remove-pending, held, internal, internal-orphan, internal-offered

### *all*

Removes all leases of specified type or state.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 14.29 lfa-coverage

### lfa-coverage

## Syntax

lfa-coverage

## Context

[\[Tree\]](#) (show>router>isis lfa-coverage)

## Full Context

show router isis lfa-coverage

## Description

This command displays IS-IS LFA coverage information. This information corresponds to the backup next hops for prefixes and nodes written in RTM by the base LFA feature.

## Platforms

All

## Output

The following output is an example of LFA coverage information.

## Output Example

```
*A:SR# show router isis lfa-coverage
=====
Rtr Base ISIS Instance 0 LFA Coverage
=====
Topology      Level   Node      IPv4
-----
IPV4 Unicast  L1     4/4(100%) 826/826(100%)
IPV4 Unicast  L2     2/2(100%) 826/826(100%)
IPV6 Unicast  L1     3/3(100%) 0/0(0%)
IPV6 Unicast  L2     0/0(0%)   0/0(0%)
=====
*A:SR#

*A:SRR>config>router>isis# show router isis lfa-coverage
=====
LFA Coverage
=====
Topology      Level   Node      IPv4      IPv6
-----
IPV4 Unicast  L1     3/4(75%)  1484/1975(75%)  0/0(0%)
IPV4 Unicast  L2     3/3(100%) 1484/1975(75%)  0/0(0%)
=====
*A:SRR>config>router>isis#
```

## lfa-coverage

### Syntax

**lfa-coverage**

### Context

[\[Tree\]](#) (show>router>ospf3 lfa-coverage)

[\[Tree\]](#) (show>router>ospf lfa-coverage)

### Full Context

show router ospf3 lfa-coverage

show router ospf lfa-coverage

### Description

This command displays OSPFv2 or OSPFv3 Loop-Free Alternate (LFA) next-hop information. This information corresponds to the backup next hops for prefixes and nodes written in RTM by the base LFA feature.

### Platforms

All

### Output

### Output Example

```
*A:Dut-A# show router ospf 1 lfa-coverage
=====
Rtr Base OSPFv2 Instance 1 LFA Coverage
=====
Area                Node                Prefix
-----
0.0.0.0             4/4(100%)          8/8(100%)
=====
*A:Dut-A#
```

```
*A:Dut-C>config>router>ospf3# show router ospf3 0 lfa-coverage
=====
Rtr Base OSPFv3 Instance 0 LFA Coverage
=====
Area                Node                Prefix
-----
0.0.0.1             1/3(33%)           9/27(33%)
=====
```

## 14.30 lfa-info

### lfa-info

#### Syntax

**lfa-info** [**mt** *mt-id-number*] [**prefix** *ipv6-prefix*[/*prefix-length*]] [**algo** *algo-id*] [**detail**]

#### Context

**[Tree]** (show>router>isis>srv6 lfa-info)

#### Full Context

show router isis segment-routing-v6 lfa-info

#### Description

This command displays IS-IS SRv6 LFA information.

#### Parameters

##### **mt-id-number**

Displays the MT ID parameters.

**Values** 0 | 2 | 3 | 4

##### **ipv6-prefix/prefix-length**

Displays the specified IP prefix.

**Values** *ipv6-prefix* — x:x:x:x:x:x (eight 16-bit pieces)



x:x:x:x:x:d.d.d  
 x — 0 to FFFF (hexadecimal)  
 d — 0 to 255 (decimal)  
*prefix-length* — 0 to 128

**algo-id**

Filters information based on the specific algorithm only.

**Values** 0 | 128 to 255

**detail**

Displays detailed information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

**Output**

The following output is an example of classic SRv6 remote locator tunnel TI-LFA backup path information, and [Table 257: IS-IS SRv6 remote locator tunnel information Output Fields](#) describes the output fields.

**Output Example**

```
show router isis segment-routing-v6 lfa-info prefix 2001:1:1::/96 algo 0
=====
Rtr Base ISIS Instance 0 SR LFA Info
=====
Locator                               Algo    MT
NextHop
LFA-NextHop                           NodeType SID          LfaType (Pr-
Backup-Node                             NodeTyp SID          Type)
                                           SID-Type (srh)
-----
2001:1:1::/96                          0        0
fe80::a20f:ffff:fe00:0-"to_Dut-A"
fe80::a223:ffff:fe00:0-"to_Dut-F"(L)    TI-LFA (Link)
1920.0000.2006                          P-Node 2001:1:6::3:0  End.X (usp)
1920.0000.2004                          TR-Node 2001:1:4::2:0  End.X (usp)
1920.0000.2002                          TR-Node 2001:1:2::3:0  End.X (usp)
1920.0000.2001                          Q-Node -              -
-----
No. of Entries: 1
Pr-Type      : Link = linkProtection, Node = nodeProtection
=====
```

*Table 257: IS-IS SRv6 remote locator tunnel information Output Fields*

Label	Description
Rtr Base ISIS Instance 0 SR LFA Info	
Locator	Displays the locator IP address
Algo	Displays the algorithm ID

Label	Description
MT	Displays the Multi-Topology value
NextHop	Displays the next-hop IP address
LFA-NextHop	Displays the LFA next-hop IP address
LfaType (Pr-Type)	Displays the LFA type
Backup-Node	Displays the backup node system ID
NodeType	Displays the node type
SID	Displays the SID value
SID-Type (srh)	Displays the SID type
No. of Entries	Displays the total number of entries

The following output is an example of a detailed classic SRv6 remote locator tunnel TI-LFA backup path information, and [Table 258: IS-IS classic and micro-segment SRv6 remote locator tunnel detailed information Output Fields](#) describes the output fields.

### Output Example

```
show router isis segment-routing-v6 lfa-info prefix 2001:1:1::/96 algo 0 detail

Rtr Base ISIS Instance 0 SR LFA Info (detail)
=====
-----
SRv6 Locator      : 2001:1:1::/96
-----
Algorithm         : 0
NextHop           : fe80::a20f:ffff:fe00:0-"to_Dut-A"
LFA-NextHop       : fe80::a223:ffff:fe00:0-"to_Dut-F"
LFA-Type          : TI-LFA
LFA-Protection    : Link Protection
-----
Displaying Backup-Node-Info
-----
Node-count        : 4
Node-SysID        : 1920.0000.2006
Node-Type         : P-Node
SID               : 2001:1:6::3:0
SID-Type          : End.X
SRH-Mode         : usp
Protection-Mode   : protected
Endpoint Behavior : N.A.
Node-SysID        : 1920.0000.2004
Node-Type         : TR-Node
SID               : 2001:1:4::2:0
SID-Type          : End.X
SRH-Mode         : usp
Protection-Mode   : protected
Endpoint Behavior : N.A.
Node-SysID        : 1920.0000.2002
Node-Type         : TR-Node
SID               : 2001:1:2::3:0
SID-Type          : End.X
```

```

SRH-Mode      : usp
Protection-Mode : protected
Endpoint Behavior: N.A.
Node-SysID    : 1920.0000.2001
Node-Type     : Q-Node
SID           : -
SID-Type      : -
SRH-Mode      : -
Protection-Mode : -
Endpoint Behavior: -
-----
No. of Entries: 1
=====
    
```

The following output is an example of micro-segment SRv6 remote locator tunnel TI-LFA backup path information.

**Output Example**

```

show router isis segment-routing-v6 lfa-info prefix 3001:0:0:1::/64 algo 0
=====
Locator                               Algo  MT
NextHop
LFA-NextHop
Backup-Node                             NodeType SID          LfaType (Pr-
                                         Type)
                                         SID-Type (srh)
-----
2001:1:1::/96                          0      0
fe80::a20f:ffff:fe00:0-"to_Dut-A"
fe80::a223:ffff:fe00:0-"to_Dut-F"(L)    TI-LFA (Link)
1920.0000.2006                          P-Node 2001:1:6::3:0 End.X (usp)
1920.0000.2004                          TR-Node 2001:1:4::2:0 End.X (usp)
1920.0000.2002                          TR-Node 2001:1:2::3:0 End.X (usp)
1920.0000.2001                          Q-Node -           -
-----
No. of Entries: 1
Pr-Type      : Link = linkProtection, Node = nodeProtection
=====
    
```

The following output is an example of detailed micro-segment SRv6 remote locator tunnel TI-LFA backup path information.

**Output Example**

```

show router isis segment-routing-v6 lfa-info prefix 3001:0:0:1::/64 algo 0 detail
=====
Rtr Base ISIS Instance 0 SR LFA Info (detail)
=====
SRv6 Locator      : 2001:1:1::/96
-----
Algorithm         : 0
NextHop           : fe80::a20f:ffff:fe00:0-"to_Dut-A"
LFA-NextHop       : fe80::a223:ffff:fe00:0-"to_Dut-F"
LFA-Type          : TI-LFA
LFA-Protection    : Link Protection
-----
Displaying Backup-Node-Info
-----
Node-count        : 4
Node-SysID        : 1920.0000.2006
    
```

```

Node-Type      : P-Node
SID            : 2001:1:6::3:0
SID-Type      : End.X
SRH-Mode      : usp
Protection-Mode : protected
Endpoint Behavior: N.A.
Node-SysID    : 1920.0000.2004
Node-Type     : TR-Node
SID           : 2001:1:4::2:0
SID-Type     : End.X
SRH-Mode     : usp
Protection-Mode : protected
Endpoint Behavior: N.A.
Node-SysID    : 1920.0000.2002
Node-Type     : TR-Node
SID           : 2001:1:2::3:0
SID-Type     : End.X
SRH-Mode     : usp
Protection-Mode : protected
Endpoint Behavior: N.A.
Node-SysID    : 1920.0000.2001
Node-Type     : Q-Node
SID           : -
SID-Type     : -
SRH-Mode     : -
Protection-Mode : -
Endpoint Behavior: -
-----
No. of Entries: 1
=====
    
```

Table 258: IS-IS classic and micro-segment SRv6 remote locator tunnel detailed information Output Fields

Label	Description
Rtr Base ISIS Instance 0 SR LFA Info (detail)	
SRv6 Locator	Displays the SRv6 locator IP address
Algorithm	Displays the algorithm ID
NextHop	Displays the next-hop IP address
LFA-NextHop	Displays the LFA next-hop IP address
LFA-Type	Displays the LFA type
LFA-Protection	Displays the LFA protection type
Displaying Backup-Node-Info	
Node-count	Displays the number of nodes
Node-SysID	Displays the node system ID
Node-Type	Displays the node type
SID	Displays the SID value

Label	Description
SID-Type	Displays the SID type
SRH-Mode	Displays the SRH mode
Protection-Mode	Displays the protection mode
Endpoint Behavior	Displays the endpoint behavior
Compressed SID	Displays the compressed SID value. This is only displayed for micro-segment SRv6.
No. of Entries	Displays the total number of entries

## 14.31 li

li

### Syntax

li

### Context

[\[Tree\]](#) (show li)

### Full Context

show li

### Description

This command displays Lawful Intercept (LI) information.

### Platforms

All

li

### Syntax

li

### Context

[\[Tree\]](#) (clear li)

## Full Context

clear li

## Description

This command clears Lawful Intercept (LI) information.

## Platforms

All

## 14.32 li-ip

li-ip

## Syntax

**li-ip** [*li-filter-name*]

**li-ip** *li-filter-name* {**counters** | **associations**}

**li-ip** *li-filter-name* **entry** *entry-id* [**counters**]

## Context

[\[Tree\]](#) (show>li>filter li-ip)

## Full Context

show li filter li-ip

## Description

This command displays LI mirror IPv4 address filter configuration and operation information.

## Parameters

### *li-filter-name*

Specifies the LI filter name, up to 32 characters.

### *entry-id*

Specifies the LI filter entry.

**Values** 1 to 65535

### **counters**

Specifies LI filter counter information.

### **associations**

Specifies LI filter association information.

## Platforms

All

## li-ip

## Syntax

**li-ip** *li-filter-name* [**entry** *entry-id*] [{ **ingress** | **egress**}]

## Context

**[Tree]** (clear>li>filter li-ip)

## Full Context

clear li filter li-ip

## Description

This command clears LI mirror IPv4 address filter configuration and operation information.

## Parameters

### *li-filter-name*

Clears the LI filter name, up to 32 characters.

### *entry-id*

Clears the LI filter entry.

**Values** 1 to 65535

## Platforms

All

## 14.33 li-ipv6

## li-ipv6

## Syntax

**li-ipv6** [*li-filter-name*]

**li-ipv6** *li-filter-name* {**counters** | **associations**}

**li-ipv6** *li-filter-name* **entry** *entry-id* [**counters**]

## Context

**[Tree]** (show>li>filter li-ipv6)

## Full Context

```
show li filter li-ipv6
```

## Description

This command displays LI mirror IPv6 address filter configuration and operation information.

## Parameters

### *li-filter-name*

Specifies the LI filter name, up to 32 characters.

### *entry-id*

Specifies the LI filter entry.

**Values** 1 to 65535

### **counters**

Specifies LI filter counter information.

### **associations**

Specifies LI filter association information.

## Platforms

All

## li-ipv6

## Syntax

```
li-ipv6 li-filter-name [entry entry-id] [{ ingress | egress}]
```

## Context

[\[Tree\]](#) (clear>li>filter li-ipv6)

## Full Context

```
clear li filter li-ipv6
```

## Description

This command clears LI mirror IPv6 address filter configuration and operation information.

## Parameters

### *li-filter-name*

Clears the LI filter name, up to 32 characters.

### *entry-id*

Clears the LI filter entry.

**Values** 1 to 65535



## Platforms

All

## 14.34 li-mac

### li-mac

#### Syntax

**li-mac** [*li-filter-name*]

**li-mac** *li-filter-name* {**counters** | **associations**}

**li-mac** *li-filter-name* **entry** *entry-id* [**counters**]

#### Context

[\[Tree\]](#) (show>li>filter li-mac)

#### Full Context

show li filter li-mac

#### Description

This command displays LI mirror MAC address filter configuration and operation information.

#### Parameters

##### *li-filter-name*

Specifies the LI filter name, up to 32 characters.

##### *entry-id*

Specifies the LI filter entry.

**Values** 1 to 65535

##### **counters**

Specifies LI filter counter information.

##### **associations**

Specifies LI filter association information.

## Platforms

All

## li-mac

### Syntax

```
li-mac li-filter-name [entry entry-id] [{ ingress | egress}]
```

### Context

**[Tree]** (clear>li>filter li-mac)

### Full Context

```
clear li filter li-mac
```

### Description

This command clears LI mirror MAC address filter configuration and operation information.

### Parameters

#### *li-filter-name*

Clears the LI filter name, up to 32 characters.

#### *entry-id*

Clears the LI filter entry.

**Values** 1 to 65535

### Platforms

All

## 14.35 li-source

## li-source

### Syntax

```
li-source service-id [acct-session-id session-id]
```

### Context

**[Tree]** (show>li li-source)

### Full Context

```
show li li-source
```

### Description

This command displays LI mirror configuration and operation information.

## Parameters

### *service-id*

Specifies the service ID.

**Values** 1 to 2147483647

### *session-id*

Specifies the session ID, up to 22 characters.

## Platforms

All

## Output

The following output is an example of LI source information.

### Output Example

```
*A:sim138# show li li-source 2
=====
Mirror Service
=====
Service Id       : 2                Type           : Ether
Admin State     : Up                Oper State     : Up
Forwarding Class : be                Remote Sources : No
Slice           : 0
Destination SDP : 1000 (100.1.1.2)      Egress Label  : 4000
Signaling       : None

-----
Local Sources
-----
Admin State     : Up

- IP Filter     1                Entry 1
=====
*A:sim138#
```

## 14.36 license

### license

#### Syntax

**license available-licenses**

#### Context

[\[Tree\]](#) (show>system license)

#### Full Context

show system license

## Description

Displays information related to the active license(s) within the system. This includes the license name, target UUID, target product, target SR OS release, and the start, end, and issue date of the license.

If the **available-licenses** attribute is included, then the information for each active license shall be displayed. The usual case for more than one license in a system is during an upgrade procedures when there needs to be both the originating and destination release licenses available in the system.

## Parameters

### available-licenses

Includes information for all licenses active in the system.

## Platforms

All

## Output

The following output is an example of license information.

### Output Example

```
*A:ExitLeaf-35# show system license
=====
Current License
=====
License status : monitoring, valid license record
Time remaining : 131 days 9 hours
-----
License name   : sr-regress@list.nokia.com
License uuid   : ab516e50-2413-44aa-9f7c-34b4e5b64d19
Machine uuid   : ab516e50-2413-44aa-9f7c-34b4e5b64d19
License desc   : 7xxx Platform
License prod   : 7xxx Platform
License sros   : TiMOS-[BC]-16.0.*
Current date   : FRI NOV 03 15:53:54 UTC 2017
Issue date    : FRI SEP 22 20:55:14 UTC 2017
Start date    : FRI SEP 15 00:00:00 UTC 2017
End date      : THU MAR 15 00:00:00 UTC 2018
-----
IOM Upgrades  : !cr-er                                     Entitlement 1
                : !er-he                                     1
                : !cr400g-cr1200g+                         1
                : !er400g-er1200g+                         1
                : !he400g-he1200g+                         1
                : !cr-er1200g+                               1
                : !er-he1200g+                               1
MDA Upgrades  : cr1200g-cr1600g                             1
                : cr1600g-cr2400g                         1
                : er1200g-er1600g                         1
                : er1600g-er2400g                         1
                : he1200g-he1600g                             1
                : he1600g-he2400g                             1
                : cr1200g-er1200g                             1
                : er1200g-he1200g                             1
                : cr1600g-er1600g                             1
                : er1600g-he1600g                             1
                : cr2400g-er2400g                             1
                : er2400g-he2400g                             1
```

```
      : !any2400g-2400g+           1
      : !cr3600g-cr4800g         1
      : !er3600g-er4800g         1
      : !he3600g-he4800g         1
      : !cr3600g-er3600g         1
      : !er3600g-he3600g         1
      : !cr4800g-er4800g         1
      : !er4800g-he4800g         1
      : !any3600g-3600gdd        1
      : !any4800g-4800g+         1
-----
! - indicates license not applicable to system
```

## 14.37 license-statistics

### license-statistics

#### Syntax

**license-statistics**

#### Context

[\[Tree\]](#) (show>system license-statistics)

#### Full Context

show system license-statistics

#### Description

Commands in this context display application license statistics.

#### Platforms

VSR

## 14.38 licensing

### licensing

#### Syntax

**licensing** *port-id*

**licensing audit** [monitored]

**licensing entitlements**

## Context

**[Tree]** (show licensing)

## Full Context

show licensing

## Description

This command displays information related to the active application licenses on the system. The licenses are either monitored RTUs or entitlement ASLs, both of which cover features and scale in use in the SR OS system.

For monitored RTUs, there is a legal requirement to purchase the RTU parts to cover the administrative enabling of the related features and scale; however, the SR OS does not block the activation or scale of the feature.

For entitlement ASLs, feature activation on the SR OS system requires the installation of the ASL via the license-file mechanism before the related feature can be enabled. See the *7750 SR and 7950 XRS Pay-as-You-Grow Licensing Reference Guide* for more information.

When the **audit** keyword is used, the display shows all the monitored RTUs and entitlement ASLs of the node. Using the optional **monitored** keyword together with **audit** restricts the display to only the monitored RTUs.

When the **entitlements** keyword is used, the display shows all the entitlements in the active licenses in the system, the type of license, the quantity of POOL licenses, and the number of each that is in use or available for use.

## Parameters

### **audit**

Specifies that the state of all features covered by licenses is displayed.

### **monitored**

Specifies that only the monitored RTUs are included in the audit display.

### **entitlements**

Specifies that the number of instances allowed by the active license is displayed.

### **port-id**

Specifies the port identifier in the format *slot[/mda[/connector[/port]]]*.

<i>slot</i>	1 to 10
<i>mda</i>	1 to 2
<i>connector</i>	c1 to c36
<i>port</i>	1 to 10

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following outputs are examples of the **show licensing** command output and the corresponding tables describe the output fields:

- [Output Example: show licensing](#); [Output Fields Table 259: Output Fields: Show Licensing](#)
- [Output Example: show licensing audit](#); [Output Fields Table 260: Output Fields: Show Licensing Audit](#)
- [Output Example: show licensing entitlements](#); [Output Fields Table 261: Output Fields: Show Licensing entitlement](#)

### Output Example: show licensing

```
# show licensing 2/1
=====
Connector          MAC  Licensed  Restrictions
-----
2/1/c1             1    Yes       400 Gbps per MAC Chip
2/1/c2             1    Yes       400 Gbps per MAC Chip
2/1/c3             1    Yes       400 Gbps per MAC Chip
2/1/c4             2    Yes       400 Gbps per MAC Chip
2/1/c5             2    Yes       400 Gbps per MAC Chip
2/1/c6             2    Yes       400 Gbps per MAC Chip
2/1/c7             3    Yes       400 Gbps per MAC Chip
2/1/c8             3    Yes       400 Gbps per MAC Chip
2/1/c9             3    Yes       400 Gbps per MAC Chip
2/1/c10            4    Yes       400 Gbps per MAC Chip
2/1/c11            4    Yes       400 Gbps per MAC Chip
2/1/c12            4    Yes       400 Gbps per MAC Chip
2/1/c13            5    Yes       400 Gbps per MAC Chip
2/1/c14            5    Yes       400 Gbps per MAC Chip
2/1/c15            5    Yes       400 Gbps per MAC Chip
2/1/c16            6    Yes       400 Gbps per MAC Chip
2/1/c17            6    Yes       400 Gbps per MAC Chip
2/1/c18            6    Yes       400 Gbps per MAC Chip
2/1/c19            7    Yes       400 Gbps per MAC Chip
2/1/c20            7    Yes       400 Gbps per MAC Chip
2/1/c21            7    Yes       400 Gbps per MAC Chip
2/1/c22            8    Yes       400 Gbps per MAC Chip
2/1/c23            8    Yes       400 Gbps per MAC Chip
2/1/c24            8    Yes       400 Gbps per MAC Chip
2/1/c25            9    Yes       400 Gbps per MAC Chip
2/1/c26            9    Yes       400 Gbps per MAC Chip
2/1/c27            9    Yes       400 Gbps per MAC Chip
2/1/c28            10   Yes       400 Gbps per MAC Chip
2/1/c29            10   Yes       400 Gbps per MAC Chip
2/1/c30            10   Yes       400 Gbps per MAC Chip
2/1/c31            11   Yes       400 Gbps per MAC Chip
2/1/c32            11   Yes       400 Gbps per MAC Chip
2/1/c33            11   Yes       400 Gbps per MAC Chip
```

### Output Fields

[Table 259: Output Fields: Show Licensing](#) describes the output fields for the **show licensing** command.

*Table 259: Output Fields: Show Licensing*

Label	Description
Connector	The identity of connector for the license limits.

Label	Description
MAC	The index of the MAC on the card or MDA to which the connector is attached.
Licensed	Whether or not the connector is licensed.  Yes — the connector is included in the licensed level of the card or MDA and may be configured for a breakout. Other rules may apply as described in the restrictions field.  No — this connector is not included in the licensed level of the card or MDA and it cannot be configured for breakout.
Restrictions	Additional license rules that may apply to the use of the connector, for example, bandwidth limits to the set of connectors on the same MAC.

**Output Example: show licensing audit**

```
# show licensing audit
=====
License                               Current   Current   Previous
Allocated   Max       24 Hr Max
-----
IOM Upgrades
cr-er400g+                               0         0         0
cr-er800g+                               0         0         0
er-he400g+                               0         0         0
er-he800g+                               0         0         0
cr-er1200g+                              0         0         0
er-he1200g+                              0         0         0
cr400g-cr800g+                           0         0         0
er400g-er800g+                           0         0         0
he400g-he800g+                           0         0         0
cr400g-cr1200g+                          0         0         0
cr800g-cr1200g+                          0         0         0
er400g-er1200g+                          0         0         0
er800g-er1200g+                          0         0         0
he400g-he1200g+                          0         0         0
he800g-he1200g+                          0         0         0
Port Licenses
7x50 SR/XRS Port 1GE                      6         6         6
7x50 SR/XRS Port 10GE                    12        12        12
7x50 SR/XRS Port 25GE                     0         0         0
7x50 SR/XRS Port 40GE                     0         0         0
7x50 SR/XRS Port 50GE                     0         0         0
7x50 SR/XRS Port 100GE                    4         4         4
7x50 SR/XRS Port 400GE                    0         0         0
=====
Last 24 Hr Interval Ended: 09/24/2020 18:14:03
```

**Output Fields**

[Table 260: Output Fields: Show Licensing Audit](#) describes the output fields for the **show licensing audit** command.



Table 260: Output Fields: Show Licensing Audit

Label	Description
License	The name of the entitlement ASL or the monitored RTU, grouped by category
Current Allocated	The number of instances of the license that are currently in use
Current Max	The maximum number of instances of the license that were recorded as in use within the current 24-hour monitoring period
Previous 24 Hr Max	The maximum number of instances of the license that were recorded in the previous full 24-hour monitoring period; shows as "n/a" if it has been less than 24 hours since startup
Last 24 Hr Interval Ended	Indicates the end time of the last 24-hour monitoring period; not displayed if it is less than 24 hours since startup

**Output Example: show licensing entitlements**

```
# show licensing entitlements
=====
License                Available    In-Use     State
-----
MDA Upgrades
  cr1200g-cr1600g      1           0         VALID
  cr1200g-er1200g     2           0         VALID
  cr1600g-cr2400g     1           0         VALID
  cr1600g-er1600g     0           2         VALID
  cr2400g-er2400g     1           0         VALID
  er1200g-er1600g     1           0         VALID
  er1200g-he1200g     1           0         VALID
  er1600g-er2400g     4           0         VALID
  er1600g-he1600g     1           0         VALID
  er2400g-he2400g     1           0         VALID
  he1200g-he1600g     1           0         VALID
  he1600g-he2400g     1           0         VALID
=====
*
```

**Output Fields**

Table 261: Output Fields: Show Licensing entitlement describes the output fields for the **show licensing entitlement** command.

Table 261: Output Fields: Show Licensing entitlement

Label	Description
License	The description of the license
Available	The number of instances that are not currently being used. "License err" if in use is greater than the number of the allowed entitlements.

Label	Description
In-Use	The number of instances that are currently being used.
State	Indicates the state of the license as: <ul style="list-style-type: none"><li>• VALID — license can be used in the node.</li><li>• VIOLATION — license is in use but not covered by the currently activated license key file.</li></ul>

## 14.39 link

link

### Syntax

link

### Context

[\[Tree\]](#) (show>router>bgp>routes>bgp-ls link)

### Full Context

show router bgp routes bgp-ls link

### Description

This command displays BGP-LS NLRIs for link types.

### Platforms

All

## 14.40 link-check

link-check

### Syntax

link-check

### Context

[\[Tree\]](#) (tools>perform>chassis link-check)

## Full Context

tools perform chassis link-check

## Description

This command checks the connection between an XCM and XMA cards on a SR-2/7/14s chassis. The function checks the connection between all XCM and XMA cards present in the system and outputs one of the following for each XMA:

- OK — the connection is good and no action is required
- NOK — the connection is suspect, re-seat the XMA to determine if this corrects the issue. If this issue persists, contact Nokia support.

## Platforms

7750 SR-1s, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s

## 14.41 link-group-member-status

### link-group-member-status

## Syntax

**link-group-member-status** *name* [**level** *level*]

## Context

[\[Tree\]](#) (show>router>isis link-group-member-status)

## Full Context

show router isis link-group-member-status

## Description

This command displays IS-IS link-group-member status.

## Parameters

***name***

Up to 32 characters.

***level***

Specifies the interface level (1, 2, or 1 and 2).

## Platforms

All

## Output

The following output is an example of link group member status information.

## Output Example

```
A:cses-V94# show router isis link-group-member-status
- link-group-member-status <name> [level <level>]

<name>           : [32 chars max]
<level>          : 1|2

A:cses-V94# show router isis link-group-member-status "toDutB"

=====
Rtr Base ISIS Instance 0 Link-Group Member
=====
Link-group      I/F name          Level   State
-----
toDutB          ip-10.10.12.3     L1      Up
toDutB          ip-10.10.3.3      L1      Up
toDutB          ip-10.10.12.3     L2      Up
toDutB          ip-10.10.3.3      L2      Up
-----
Legend: BER = bitErrorRate
=====
A:cses-V94#
```

## 14.42 link-group-status

### link-group-status

#### Syntax

```
link-group-status name [level level]
```

#### Context

[\[Tree\]](#) (show>router>isis link-group-status)

#### Full Context

```
show router isis link-group-status
```

#### Description

This command displays IS-IS link-group status.

#### Parameters

##### *name*

Specifies the link-group name.

##### *level*

Specifies the interface level (1, 2, or 1 and 2).

## Platforms

All

## Output

The following output is an example of link group status.

### Output Example

```
A:cses-V94# show router isis link-group-status
=====
Rtr Base ISIS Instance 0 Link-Group Status
=====
Link-group           Mbrs   Oper   Revert Active Level  State
                    Mbr    Mbr    Mbr    Mbr
-----
toDutB                2     2     2     2     L1    normal
toDutB                2     2     2     2     L2    normal
toDutE                2     2     2     2     L1    normal
toDutE                2     2     2     2     L2    normal
=====
A:cses-V94#
```

## 14.43 link-map-profile

### link-map-profile

#### Syntax

**link-map-profile** *link-map-profile*

#### Context

[\[Tree\]](#) (show lag link-map-profile)

#### Full Context

show lag link-map-profile

#### Description

This command displays LAG link map profile information.

#### Parameters

##### ***link-map-profile***

Displays information about a specified LAG link map profile.

**Values** 1 to 32 (VSR)  
1 to 64 (all other platforms)

## Platforms

All

## 14.44 link-measurement

### link-measurement

#### Syntax

**link-measurement**

#### Context

[\[Tree\]](#) (show>test-oam link-measurement)

#### Full Context

show test-oam link-measurement

#### Description

Commands in this context display link measurement template information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 14.45 lldp

### lldp

#### Syntax

**lldp**

**lldp neighbor**

#### Context

[\[Tree\]](#) (show>system lldp)

#### Full Context

show system lldp

#### Description

This command displays local Link Layer Discovery Protocol (LLDP) information at the system level. This includes an option to display summary information for all known peers.

## Parameters

### neighbor

Displays all LLDP neighbor information.

## Platforms

All

## Output

The following output is an example of local LLDP information.

### Output Example: show system lldp

```
show system lldp
=====
LLDP Configuration
=====
Transmit Interval      : 30
Hold Multiplier       : 4
Reinit Delay          : 2
Notification Interval : 5
Tx Credit Max         : 5
Message Fast Tx       : 1
Message Fast Tx Init  : 4
Admin Enabled         : True

-----
LLDP System Information
-----
Chassis Id Subtype    : 4
Chassis Id            : d8:1f:ff:00:00:00
System Name           : cses-V31
System Description    : TiM0S-B-0.0.I4269 both/i386 Nokia 7750 SR Copyright
                       (c) 2000-2016 Nokia.
                       All rights reserved. All use subject to applicable
                       license agreements.
                       Built on Wed Dec 3 19:14:27 PST 2014 by builder in /
                       rel0.0/I4269/panos/main
Capabilities Supported : bridge router
Capabilities Enabled   : bridge router

-----
LLDP Destination Addresses
-----
Index 1                : 01:80:c2:00:00:0e
Index 2                : 01:80:c2:00:00:03
Index 3                : 01:80:c2:00:00:00

-----
LLDP Remote Statistics
-----
Last Change Time      : 12/08/2014 21:34:48
Rem Table Inserts     : 10
Rem Table Deletes    : 1
Rem Table Drops      : 0
Rem Table Ageouts    : 3

-----
LLDP System Management Addresses
-----
Address SubType       : 1 (IPv4)
```

```

Address      : 10.1.1.31
Address If SubType : 2
Address If Id   : 1
Address OID    : .1.3.6.1.4.1.6527.1.3.3
Address SubType : 2 (IPv6)
Address       : 2001:db8:dead:beef::31
Address If SubType : 2
Address If Id   : 1
Address OID    : .1.3.6.1.4.1.6527.1.3.3
    
```

```

=====
show system lldp neighbor
    
```

```

Link Layer Discovery Protocol (LLDP) System Information
    
```

```

=====
NB = nearest-bridge   NTPMR = nearest-non-tpmr   NC = nearest-customer
    
```

```

=====
Lcl Port  Scope  Remote Chassis ID  Index  Remote Port  Remote System Name
-----
1/1/4     NB     D8:1D:FF:00:00:00  1      1/1/5       cses-v29
1/1/6     NB     D8:1D:FF:00:00:00  2      1/1/7       cses-v29
1/2/2     NB     D8:1F:FF:00:00:00  3      1/1/1       cses-v31
1/2/1     NB     D8:1E:FF:00:00:00  4      1/1/1       cses-v30
1/2/3     NB     D8:20:FF:00:00:00  5      1/1/1       cses-v32
1/2/4     NB     D8:21:FF:00:00:00  6      1/1/1       cses-V33
    
```

```

=====
Number of neighbors : 6
    
```

## lldp

### Syntax

```
lldp [neighbor]
```

### Context

[\[Tree\]](#) (show>system lldp)

### Full Context

```
show system lldp
```

### Description

This command displays neighbor information for all configured ports without having to specify each individual port ID.

### Parameters

**neighbor**

Displays LLDP neighbor information.

### Platforms

All



## Output

The following output is an example of LLDP neighbor information.

### Output Example

```
*A:Dut-C# show system lldp neighbor
Link Layer Discovery Protocol (LLDP) System Information
=====
NB = nearest-bridge   NTMPR = nearest-non-tpmr   NC = nearest-customer
=====
Port      Scope  Chassis ID           Index  Port ID   System Name
-----
1/1/1     NB     16:2f:ff:00:00:00    1      35717120  Dut-A
2/1/2     NB     16:34:ff:00:00:00    1      35782656  Dut-D
2/1/1     NB     16:36:ff:00:00:00    2      35684352  Dut-E
1/1/2     NB     16:30:ff:00:00:00    2      35749888  Dut-B
1/1/3     NB     16:30:ff:00:00:00    3      35782656  Dut-B
2/1/3     NB     16:30:ff:00:00:00    3      35815424  Dut-B
=====
Number of neighbors : 6
*A:Dut-C#

A:GHR-API# show system lldp neighbor
Link Layer Discovery Protocol (LLDP) System Information
=====
NB = nearest-bridge   NTMPR = nearest-non-tpmr   NC = nearest-customer
=====
Port      Scope  Chassis ID           Index  Port ID   System Name
-----
1/1/6     NTPMR 00:21:05:1b:bc:17    1      36044800  RXI-AMI
1/1/8     NTPMR 00:21:06:6d:bd:53    2      36110336  YOY-WOW
1/1/9     NTPMR 00:21:08:2b:ab:81    3      36143104  FRI-MON
=====
Number of neighbors : 3
```

## lldp

### Syntax

**lldp bridge-mac** [**remote-info**] [**detail**]

### Context

[\[Tree\]](#) (show>port>ethernet lldp)

### Full Context

show port ethernet lldp

### Description

This command displays LLDP information.

### Parameters

**bridge-mac**

Specifies a keyword to filter the output.

**remote-info**

Displays remote information on the bridge MAC.

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example LLDP port information, and [Table 262: Output fields: LLDP port information](#) describes the output fields.

**Output example**

```
show port 5/1/1 ethernet lldp detail
=====
Link Layer Discovery Protocol (LLDP) Port Information
=====

Port 5/1/1 Bridge nearest-bridge
-----
Admin State           : disabled      Notifications       : Disabled
Tunnel Nearest Bridge : Disabled
Transmit TLVs        : None
PortID TLV Subtype   : tx-local

Management Address Transmit Configuration:
Index 0 (00B)         : Disabled      Address             : 192.168.135.32
Index 1 (system)     : Disabled      Address             : 0.0.0.0
Index 2 (IPv6 system): Disabled      Address             : ::
Index 3 (IPv6 00B)   : Disabled      Address             : 3000::c0a8:8720

Port LLDP Stats:
Tx Frames             : 0              Tx Length Err Frames : 0
Rx Frames             : 0              Rx Frame Discard     : 0
Rx Frame Errors       : 0              Rx TLV Discard       : 0
Rx TLV Unknown        : 0              Rx Ageouts           : 0

Port 5/1/1 Bridge nearest-non-tpmr
-----
Admin State           : disabled      Notifications       : Disabled
Transmit TLVs        : None
PortID TLV Subtype   : tx-local

Management Address Transmit Configuration:
Index 0 (00B)         : Disabled      Address             : 192.168.135.32
Index 1 (system)     : Disabled      Address             : 0.0.0.0
Index 2 (IPv6 system): Disabled      Address             : ::
Index 3 (IPv6 00B)   : Disabled      Address             : 3000::c0a8:8720

Port LLDP Stats:
Tx Frames             : 0              Tx Length Err Frames : 0
Rx Frames             : 0              Rx Frame Discard     : 0
Rx Frame Errors       : 0              Rx TLV Discard       : 0
Rx TLV Unknown        : 0              Rx Ageouts           : 0

Port 5/1/1 Bridge nearest-customer
```

```

-----
Admin State          : disabled      Notifications      : Disabled
Transmit TLVs       : None
PortID TLV Subtype  : tx-local

Management Address Transmit Configuration:
Index 0 (OOB)       : Disabled      Address           : 192.168.135.32
Index 1 (system)    : Disabled      Address           : 0.0.0.0
Index 2 (IPv6 system) : Disabled      Address           : ::
Index 3 (IPv6 OOB)  : Disabled      Address           : 3000::c0a8:8720

Port LLDP Stats:
Tx Frames           : 0              Tx Length Err Frames : 0
Rx Frames           : 0              Rx Frame Discard     : 0
Rx Frame Errors     : 0              Rx TLV Discard       : 0
Rx TLV Unknown      : 0              Rx Ageouts           : 0
=====
    
```

Table 262: Output fields: LLDP port information

Label	Description
Admin State	Indicates LLDP transmission or reception handling on the port
Notifications	Enabled – LLDP notifications are enabled Disabled – LLDP notifications are disabled
Tunnel Nearest Bridge	Enabled – the nearest bridge tunneling frames are enabled Disabled – the nearest bridge tunneling frames are disabled
Transmit TLVs	port-desc – this LLDP TLV is transmitted sys-name – this LLDP TLV is transmitted sys-desc – this LLDP TLV is transmitted sys-cap – this LLDP TLV is transmitted none – no LLDP TLVs are transmitted
PortID TLV Subtype	tx-if-alias – this port identifier TLV is transmitted to the peer tx-ifname – this port identifier TLV is transmitted to the peer tx-local – this port identifier TLV is transmitted to the peer
Index 0 (OOB)	Uses the IPv4 out-of-band management IP address
Index 1 (system)	Uses the IPv4 system IP address
Index 2 (IPv6 system)	Uses the IPv6 system IP address
Index 3 (IPv6 OOB)	Uses the IPv6 out-of-band management IP address
Address	The IP address associated with the index
Tx Frames	The number of LLDP frames transmitted from the port

Label	Description
Rx Frames	The number of LLDP frames received on the port
Rx Frame Errors	The number of LLDP frames received with errors on the port
Rx TLV Unknown	The number of LLDP frames received on the port with a properly formatted TLV that was not supported on the receiving port
Tx Length Err Frames	The number of LLDP frames transmitted with length errors from the port
Rx Frame Discard	The number of LLDP frames received but discarded on the port
Rx TLV Discard	The number of LLDP frames received on the port discarded because of the TLV
Rx Ageouts	The number of LLDP frames received on the port with a properly formatted TLV that was not supported on the receiving port

## 14.46 lldp-member-template

### lldp-member-template

#### Syntax

**lldp-member-template** [**dest-mac** *dest-mac-type*]

#### Context

[\[Tree\]](#) (show>lag lldp-member-template)

#### Full Context

show lag lldp-member-template

#### Description

This command displays LLDP member port information.

#### Parameters

##### **dest-mac-type**

Specifies the destination MAC address type.

- Values**
- nearest-bridge – the nearest bridge is used
  - nearest-non-tpmr – the nearest non-TPMR is used
  - nearest-customer – the nearest customer is used

## Platforms

All

## Output

The following output is an example of LLDP member port information, and [Table 263: Output fields: LLDP member port information](#) describes the output fields.

### Output example

```

show lag lag-1 lldp-member-template
=====
LAG Link Layer Discovery Protocol member template information
=====
nearest-bridge
-----
Administrative state      : disabled
Notifications            : disabled
Port-id subtype          : tx-local
Transmit TLVs            : (Not Specified)
Tunnel-nearest-bridge    : disabled
Management address transmit : (Not Specified)

nearest-non-tpmr
-----
Administrative state      : disabled
Notifications            : disabled
Port-id subtype          : tx-local
Transmit TLVs            : (Not Specified)
Management address transmit : (Not Specified)

nearest-customer
-----
Administrative state      : disabled
Notifications            : disabled
Port-id subtype          : tx-local
Transmit TLVs            : (Not Specified)
Management address transmit : (Not Specified)

=====
    
```

Table 263: Output fields: LLDP member port information

Label	Description
Administrative state	Indicates LLDP transmission or reception handling on the port
Notifications	Enabled – LLDP notifications are enabled Disabled – LLDP notifications are disabled
Port-id subtype	tx-if-alias – this port identifier TLV is transmitted to the peer tx-ifname – this port identifier TLV is transmitted to the peer tx-local – this port identifier TLV is transmitted to the peer
Transmit TLVs	port-desc – this LLDP TLV is transmitted sys-name – this LLDP TLV is transmitted

Label	Description
	sys-desc – this LLDP TLV is transmitted sys-cap – this LLDP TLV is transmitted none – no LLDP TLVs are transmitted
Tunnel-nearest-bridge	Enabled – the nearest bridge tunneling frames are enabled Disabled – the nearest bridge tunneling frames are disabled
Management address transmit	The management address transmitted

## 14.47 Imm

### Imm

#### Syntax

**Imm** [*interval seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

#### Context

[\[Tree\]](#) (monitor>oam-pm>session Imm)

#### Full Context

monitor oam-pm session Imm

#### Description

This command monitors the Ethernet Loss Measurement Message (LMM) statistics for the specified test's raw measurement interval.

#### Parameters

##### *seconds*

Specifies the time interval, in seconds.

**Values** 3 to 60

**Default** 10

##### *repeat*

Specifies the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Specifies that the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Specifies that the rate-per-second is displayed.

**Default** delta

**Platforms**

All

Imm

**Syntax**

Imm

**Context**

[\[Tree\]](#) (show>oam-pm>stats>session Imm)

**Full Context**

show oam-pm statistics session Imm

**Description**

This command selects the session's Ethernet LMM test for the statistical display.

**Platforms**

All

## 14.48 Ins-group

Ins-group

**Syntax**

**Ins-group** *Ins-group-id* [**associations**]

**Ins-group** *Ins-group-id* **statistics** *esa-vm* *vapp-id*

**Ins-group** [*Ins-group-id*] **esa-vm**

**Ins-group** *Ins-group-id* **mda** *mda-id* **statistics**

**Ins-group** [*Ins-group-id*] **mda**

**Ins-group**

## Context

**[Tree]** (show>isa lns-group)

## Full Context

show isa lns-group

## Description

This command shows information such as the number of ESAs provisioned and in service, the LNS group operational status, and the number of L2TP sessions and ESA VM associated to the LNS group, as well as the detailed statistics of the ESA VM in relation to the LNS group.

## Parameters

### *lns-group-id*

Specifies the LNS group identifier.

**Values** 1 to 4

### *associations*

Displays information associated with the LNS group in the ISA context.

### *statistics*

Displays statistics information.

### *mda-id*

Specifies the ESA and VM identifying an LNS group.

<b>Values</b>	<i>mda-id:</i>	<i>slot/mda</i>	
		slot	1 to 10
		mda	1 to 2

### *vapp-id*

Specifies the ESA and VM identifying an LNS group.

<b>Values</b>	<i>vapp-id:</i>	<i>esa-id/vm-id</i>	
		esa-id	1 to 16
		vm-id	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following outputs are examples of the number of ESAs provisioned, the LNS group information status, and the statistics of the ESA VM in relation to the LNS group.



### Output Example

```
*A:LNS# show isa lns-group esa-vm
=====
ISA LNS group ESA-VM's
=====
Group ESA-VM   State           Sessions
-----
1      1/1      inService      15290
2      2/1      inService      15761
3      1/2      inService      14413
4      2/2      inService      14533
-----
No. of ESA-VM's: 4
=====
```

### Output Example

```
*A:Dut-C# show isa lns-group 1 esa-vm
=====
ISA LNS Group 1 ESA-VM's
=====
Group ESA-VM   State           Sessions
-----
1      1/1      inService      15290
-----
No. of ESA-VM's: 1
=====
```

### Output Example

```
*A:Dut-C# show isa lns-group 1 esa-vm 1/1 statistics
=====
ISA LNS Group 1 ESA-VM 1/1 statistics
=====
upstream PPP control forwarded to CPM           : 49147
upstream PPP forwarded to PPPoX                 : 2176118
upstream LCP Echo Rep                           : 2176113
downstream forwarded to L2TP                    : 62444564
downstream LCP Echo Req                         : 2210467
=====
```

## Ins-group

### Syntax

**Ins-group** *Ins-group-id* **statistics** **esa-vm** *vapp-id*

**Ins-group** *Ins-group-id* **mda** *mda-id* **statistics**

### Context

[\[Tree\]](#) (clear>isa Ins-group)

### Full Context

clear isa Ins-group

## Description

This command clears the statistics for the identified VM within the specified LNS group.

## Parameters

### *Ins-group-id*

Specifies the LNS group identifier.

**Values** 1 to 4

### *statistics*

Displays statistics information.

### *mda-id*

Specifies the ESA and VM identifying an LNS group.

<b>Values</b>	<i>mda-id:</i>	<i>slot/mda</i>	
		<i>slot</i>	1 to 10
		<i>mda</i>	1 to 2

### *vapp-id*

Specifies the ESA and VM identifying an LNS group.

<b>Values</b>	<i>vapp-id:</i>	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 14.49 load-balance

### load-balance

## Syntax

**load-balance lag-id lag-id [class {1 | 2 | 3}]**

## Context

[\[Tree\]](#) (tools>perform>lag load-balance)

## Full Context

tools perform lag load-balance

## Description

Load balance specified LAG's links when per-link-hash weighted is deployed. Load balancing can be per specified class or on all classes if no class is specified.

## Parameters

### *lag-id*

Specifies the LAG ID.

**Values** 1 to 800

### *class*

Specifies the class.

**Values** 1, 2, 3

## Platforms

All

## load-balance

## Syntax

**load-balance** [**service** *service-id*]

## Context

[\[Tree\]](#) (tools>perform>app-assure>group load-balance)

## Full Context

tools perform application-assurance group load-balance

## Description

This command rebalances AA subscribers between ISAs within a group, in case imbalance occurs such as with the addition of new cards.

## Parameters

### **service** *service-id*

Specifies the service

**Values** 1 to 2147483648

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 14.50 load-balancing-alg

### load-balancing-alg

#### Syntax

**load-balancing-alg [detail]**

#### Context

[\[Tree\]](#) (show>system load-balancing-alg)

#### Full Context

show system load-balancing-alg

#### Description

This command displays system load balancing settings.

#### Parameters

**detail**

Keyword to display port settings.

#### Platforms

All

#### Output

The following output is an example of load balancing information.

#### Output Example

```
*A:bkvm15# show system load-balancing-alg
=====
System-wide Load Balancing Algorithms
=====
L4 Load Balancing           : exclude-L4
LSR Load Balancing          : lbl-ip-l4-teid
eLER Enhanced Load Balancing : disabled
System IP Load Balancing    : disabled
Multicast Enhanced Load Balancing : disabled
Service ID LAG Hashing     : disabled
=====
*A:bkvm15#
```

## 14.51 local-bfd-discrim

### local-bfd-discrim

#### Syntax

**local-bfd-discrim** *bfd-discriminator*

#### Context

[\[Tree\]](#) (tools>dump>router>lsp-bfd local-bfd-discrim)

#### Full Context

tools dump router lsp-bfd local-bfd-discrim

#### Description

This command displays information for the BFD-on-LSP session with a specified local discriminator.

#### Parameters

***bfd-discriminator***

Specifies the BFD discriminator.

**Values** to 4294967295

#### Platforms

All

## 14.52 local-dhcp-db

### local-dhcp-db

#### Syntax

**local-user-db** *local-user-db-name*

#### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>local-user-db local-dhcp-db)

#### Full Context

tools perform subscriber-mgmt local-user-db local-dhcp-db

## Description

This command enables tools to control the local user database.

## Parameters

### *local-user-db-name*

Specifies the name of a local user database.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 14.53 local-dhcp-server

### local-dhcp-server

## Syntax

**local-dhcp-server** *server-name*

## Context

[\[Tree\]](#) (show>router>dhcp6 local-dhcp-server)

[\[Tree\]](#) (show>router>dhcp local-dhcp-server)

## Full Context

show router dhcp6 local-dhcp-server

show router dhcp local-dhcp-server

## Description

This command displays local DHCP or DHCP6 server information.

## Parameters

### *server-name*

Specifies information about the local DHCP server.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### local-dhcp-server

## Syntax

**local-dhcp-server** *server-name*

## Context

[\[Tree\]](#) (clear>router>dhcp6 local-dhcp-server)

[\[Tree\]](#) (clear>router>dhcp local-dhcp-server)

## Full Context

clear router dhcp6 local-dhcp-server

clear router dhcp local-dhcp-server

## Description

This command clears DHCP server data.

## Parameters

### *server-name*

Clears data for the specified local DHCP server.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## local-dhcp-server

## Syntax

**local-dhcp-server** *server-name*

## Context

[\[Tree\]](#) (tools>perform>router>dhcp6 local-dhcp-server)

[\[Tree\]](#) (tools>perform>router>dhcp local-dhcp-server)

## Full Context

tools perform router dhcp6 local-dhcp-server

tools perform router dhcp local-dhcp-server

## Description

This command enables tools to control the local DHCP server.

## Parameters

### *server-name*

Specifies the name of the local DHCP server.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 14.54 local-forward

### local-forward

#### Syntax

**local-forward** [*local-forward-id*]

#### Context

[\[Tree\]](#) (show>system>satellite local-forward)

#### Full Context

show system satellite local-forward

#### Description

This command displays satellite local forward services information.

#### Parameters

##### ***local-forward-id***

Specifies the local forward ID.

**Values** 1 to 10240

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### local-forward

#### Syntax

**local-forward**

#### Context

[\[Tree\]](#) (show>system>satellite>eth-sat local-forward)

#### Full Context

show system satellite eth-sat local-forward

#### Description

This command displays information for Ethernet satellite local forward services.



## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 14.55 local-sid

### local-sid

#### Syntax

```
local-sid [ipv6-address] [/prefix-length] [locator locator-name] [longer] [end] [end-x] [end-dt4] [end-dt6]  
[end-dt46] [end-dx2] [context context] [end-dt2u] [end-dt2m]
```

#### Context

[\[Tree\]](#) (show>router>srv6 local-sid)

#### Full Context

```
show router segment-routing-v6 local-sid
```

#### Description

This command displays SRv6 local-SID information.

#### Parameters

##### *ipv6-address*

Specifies the IPv6 address.

**Values** x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x - [0 to FFFF]H  
d - [0 to 255]D

##### *locator-name*

Specifies the locator name, up to 64 characters.

##### **longer**

Displays the specified route and subsets of the route.

##### **end**

Displays the End SID function of a locator.

##### **end-x**

Displays the End.X SID function associated with a P2P interface.

##### **end-dt4**

Displays the End.DT4 function associated with the Base routing instance.

**end-dt6**

Displays the End.DT6 function associated with the Base routing instance.

**end-dt46**

Displays the End.DT46 function associated with the Base routing instance.

**end-dx2**

Displays the End.DX2 function associated with the SRv6 instance in the service.

**context**

Specifies the router context.

**Values** *vprn-svc-name* | 'Base' | *vprn-svc-id*

**end-dt2u**

Displays the End.DT2U function associated with the SRv6 instance in the service.

**end-dt2m**

Displays the End.DT2M function associated with the SRv6 instance in the service.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

**Output**

The following output is an example of local SID information.

**Output Example**

```
*A:Dut-B# show router segment-routing-v6 local-sid

=====
Segment Routing v6 Local SIDs
=====
SID                                     Type           Function
Locator
Context
-----
2222:2:2:2:0:1::                        End.DT2M       1
  dutB_L1
  SvcId: 1 Name: VPLS1
2222:2:2:2:0:2::                        End.DT2M       2
  dutB_L1
  SvcId: 2 Name: VPLS2
2222:2:2:2:0:3::                        End.DX2        3
  dutB_L1
  SvcId: 3 Name: EPIPE3
2222:2:2:2:0:4::                        End.DX2        4
  dutB_L1
  SvcId: 4 Name: EPIPE4
2222:2:2:2:0:c351::                     End.DT2U       50001
  dutB_L1
  SvcId: 1 Name: VPLS1
2222:2:2:2:0:c352::                     End.DT2U       50002
  dutB_L1
  SvcId: 2 Name: VPLS2
2222:2:2:2:1:86a0::                     End            100000
  dutB_L1
  Base
```

```
-----
SIDs : 7
-----
=====
```

Table 264: Local SID Field Descriptions describes local SID output fields.

Table 264: Local SID Field Descriptions

Field	Description
SID	The segment ID
Locator	The locator name
Context	The context of the SID
Type	The type of SRv6 behavior
Function	The function value
SIDs	The total number of SIDs

## 14.56 local-tx-pdu

### local-tx-pdu

#### Syntax

**local-tx-pdu** [**domain** {*md-index* | *md-admin-name*}] [**association** {*ma-index* | *ma-admin-name*}] [**mep** *mep-id*]

#### Context

**[Tree]** (show>eth-cfm local-tx-pdu)

#### Full Context

show eth-cfm local-tx-pdu

#### Description

This command displays the transmission for ETH-CC, ETH-AIS, and ETH-CFM Grace (ETH-VSM or ETH-ED) using a character representation for each protocol per MEP. ETH-CC is expanded to include columns for RDI, Port Status TLV, and Interface Status TLV. The additional ETH-CC columns represent the actual transmitting value of the TLV, or "Absent" if not present in the ETH-CC PDU. These additional ETH-CC columns are represented with a series of dashes if the ETH-CC column under the TxPDU is a dash ("-") or "c".

The optional parameters are treated as independent and cumulative filters that are combined to refine the output. Rows in the output are populated for matches against all specified filters. Omitting all optional parameters produces output that includes all MEPs.

## Parameters

*md-index*

Specifies the MD index.

**Values** 1 to 4294967295

*md-admin-name*

Specifies the MD name, up to 64 characters.

*ma-index*

Specifies the MA index.

**Values** 1 to 4294967295

*ma-admin-name*

Specifies the MD name, up to 64 characters.

*mep-id*

Specifies the local MEP ID.

**Values** 1 to 8191

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of local PDU transmission information, and [Table 265: Output fields: ETH-CFM local PDU transmission](#) describes the output fields.

### Output example

```
show eth-cfm local-tx-pdu
=====
Transmission PDU Type Legend:
C = CCM, c = CCM tx suppressed, A = AIS, a = AIS pending,
G = ETH-VSM Grace, E = ETH-ED
=====
Eth-CFM Local Transmit PDU Information
=====
MdIndex  MaIndex  MepId SrcMacAddress  TxRdi PortTLV IfTLV TxPdu
  md-admin-name
  ma-admin-name
-----
10      11400115  2     00:00:00:00:00:28 False Absent Absent C--
  10
  11400115
10      11600117  2     00:00:00:00:00:28 False Absent Absent C--
  10
  11600117
12      1000     928   00:00:01:01:09:28 False Up      Up      C--
  12
  vpls-100-1
12      1000     1028  00:00:01:01:10:28 False Up      Up      C--
```

```

12
  vpls-100-1
13      13      1001  b6:1c:01:01:00:04  -----
13
13
13      13      1002  b6:1c:01:01:00:04  -----
13
13
=====
    
```

Table 265: Output fields: ETH-CFM local PDU transmission

Label	Description
MdIndex	The local MEP domain index
MaIndex	The local MEP association index
MepId	The local MEP identifier
SrcMacAddress	The local MEP source MAC address
TxRdi	The RDI value
PortTLV	The Port Status TLV value
IfTLV	The Interface Status TLV value
TxPDU	The transmission, summarized in three single-character columns. The left column displays ETH-CC, the middle column displays ETH-AIS, and the right column displays ETH-CFM Grace (ETH-VSM or ETH-ED).  For ETH-AIS, "A" is displayed when a facility MEP has determined that the AIS state is active, regardless of interaction, linkages, or active transmission of associated MEPs.
md-admin-name	Displays the administrative MD name.
ma-admin-name	Displays the administrative MA name.

## 14.57 local-user-db

### local-user-db

#### Syntax

**local-user-db** *local-user-db-name* **association** [**dhcp**] [**ppp**] [**I2tp**] [**radius**] [**pppoe**] [**dhcp6**] [**capture-sap**] [**rtr-solicit**] [**wpp**] [**ipoe**] [**gtp**]

**local-user-db** *local-user-db-name* **ipoe-all-hosts**  
**local-user-db** *local-user-db-name* **ipoe-host** *ipoe-host-name*  
**local-user-db** *local-user-db-name* **ipoe-unmatched-hosts**  
**local-user-db** [*local-user-db-name*]  
**local-user-db** *local-user-db-name* **ppp-all-hosts**  
**local-user-db** *local-user-db-name* **ppp-host** *pppoe-host-name*  
**local-user-db** *local-user-db-name* **ppp-unmatched-hosts**

## Context

[\[Tree\]](#) (show>subscr-mgmt local-user-db)

## Full Context

show subscriber-mgmt local-user-db

## Description

This command displays local user database information.

## Parameters

### ***local-user-db-name***

Specifies the name of a local user database up, to 32 characters.

### **association**

Displays entities associated with the specified local user database.

### **dhcp**

Displays entities associated with the specified local user database for DHCP clients or server.

### **ppp**

Displays entities associated with the specified local user database for PPP sessions.

### **l2tp**

Displays entities associated with the specified local user database for L2TP sessions.

### **radius**

Displays entities associated with the specified local user database for RADIUS fallback.

### **pppoe**

Displays entities associated with the specified local user database for PPPoE sessions.

### **dhcp6**

Displays entities associated with the specified local user database for DHCPv6 clients.

### **capture-sap**

Displays capture-saps associated with the specified local user database.

### **rt-solicit**

Displays entities associated with the specified local user database for rtr-solicit session.

**wpp**

Displays entities associated with the specified local user database for WPP.

**ipoe**

Displays entities associated with the specified local user database for IPoE sessions.

**gtp**

Displays GTP APN policies associated with the specified local user database.

**ipoe-all-hosts**

Displays a summary overview of all IPoE hosts .

**ipoe-host-name**

Displays detailed information about the specified IPoE host.

**ipoe-unmatched-hosts**

Displays unmatched IPoE hosts and the reason why they cannot be matched in the specified local user database.

**ppp-all-hosts**

Displays a summary overview of all PPP hosts.

**ppp-hosts**

Displays detailed information about the specified PPP host.

**ppp-unmatched-hosts**

Displays unmatched PPP hosts and the reason why they cannot be matched in the specified local user database.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following commands display local user database information and [Table 266: Local User Database Field Descriptions](#) describes the output fields.

**Output Example**

```
show subscriber-mgmt local-user-db

=====
Local User Databases
=====
Name                               Admin Host  Description
                                State Count
-----
ludb-1                             Up        5
ludb-2                             Up        2
-----
Number of Local User Databases : 2   Number of Hosts : 7
```

```
show subscriber-mgmt local-user-db "ludb-1"
```

```
Local User Database "ludb-1"
```

```

=====
Description          : local user database 1
Admin State          : Up
Last Mgmt Change     : 02/22/2023 13:04:36
Host Count           : 5
Creation Origin      : manual
IPoE Match Types     : mac sap-id encap-tag-range
PPP Match Types      : userName sap-id encap-tag-range
=====
    
```

```
show subscriber-mgmt local-user-db "ludb-1" association dhcp
```

No DHCP Server associations found.

```
DHCP client interface associations for ludb-1
```

```

=====
Interface-Name      Svc-Id   Type
-----
group-int-5-1      1000     IES
=====
    
```

No. of Interface(s): 1

```
Capture SAP associations for ludb-1
```

```

=====
SAP                Svc-Id   Type   PPPoE  PPP  IPoE  DHCP  DHCP6  RS
-----
1/1/c1/1:2413.*    10       VPLS   y       y   y   y   y
1/1/c1/1:2422.*    10       VPLS   y       y   y   y
1/1/c1/4:2111.*    10       VPLS   y       y   y   y
lag-1:2212.*       10       VPLS   y       y   y   y
=====
    
```

No. of SAP(s): 4

```
show subscriber-mgmt local-user-db "ludb-1" ipoe-all-hosts
```

```
Local User Database "ludb-1" IPoE hosts
```

```

=====
Name                Admin   Matched objects
                   State
-----
host-1              Up      mac - -
host-2              Up      - - -
default             Up      - - -
=====
    
```

Number of IPoE Hosts : 3



```
=====
show subscriber-mgmt local-user-db "ludb-1" ipoe-unmatched-hosts
=====
```

```
Local User Database "ludb-1" IPoE unmatched hosts
=====
```

Name	Reason	Duplicate Host
host-2	No match	N/A

```
Number of IPoE Unmatched Hosts : 1
=====
```

```
show subscriber-mgmt local-user-db "ludb-1" ipoe-host "host-1"
=====
```

```
IPoE Host "host-1"
=====
```

```
Admin State      : Up
Last Mgmt Change : 02/22/2023 12:54:12
```

```
Host Identification
```

```
Circuit Id      : N/A
Mac Address     : 00:00:00:00:00:01
Remote Id      : N/A
Sap Id         : N/A
Service Id     : N/A
String         : N/A
Option 60     : N/A
System Id     : N/A
Encap Tag Range : N/A
Encap Tag Sep Range : N/A
Derived Id    : N/A
IP prefix     : N/A
```

```
Matched Objects : mac
```

```
Address          : pool "ipv4-pool-1"
Auth Policy      : radius-auth-1
Acct Policy      : N/A
Dupl Acct Policy : N/A
Auth Domain Name : N/A
Diameter app policy : (Not Specified)
Diameter auth policy : (Not Specified)
Rip Policy       : N/A
Router Advert Policy : N/A
IPv6 Address     : N/A
IPv6 Del Pfx    : N/A
IPv6 Slaac Pfx  : N/A
IPv6 Address Pool : ipv6-iana-pool-1
IPv6 Del Pfx Pool : ipv6-iapd-pool-1
IPv6 Slaac Pfx Pool : ipv6-slaac-pool-1
IPv6 Del Pfx Length : N/A
```

```
DHCPv6 lease times
```

```
Renew timer      : > 9999 days
Rebind timer     : > 9999 days
Preferred lifetime : 0d 00:00:00
Valid lifetime   : 0d 00:00:00
```

DHCP Relay overrides for Subscriber Management

Server Address : N/A  
Server IPv6 address : N/A  
gi-address : N/A  
link-address : N/A

Identification Strings (option 254)

Subscriber Id : N/A  
SLA Profile String : sla-profile-1  
SPI Sharing Group Id: N/A  
Sub Profile String : sub-profile-1  
App Profile String : N/A  
ANCP String : N/A  
Inter Destination Id: N/A  
Category Map Name : N/A

Retailer Svc Id : N/A  
Service : N/A  
Interface : N/A

MSAP defaults

Policy : msap-policy-1  
Service : 1000  
Group Interface : group-int-1-1  
Group Interface Pfx : none  
Group Interface Sfx : none

Filter Overrules

Ing Ipv4 Fltr : N/A  
Egr Ipv4 Fltr : N/A  
Ing Ipv6 Fltr : N/A  
Egr Ipv6 Fltr : N/A

=====

```
show subscriber-mgmt local-user-db "ludb-1" ppp-host "user-1@best.net"
```

=====

PPP Host "user-1@best.net"

=====

Admin State : Down  
Last Mgmt Change : 02/22/2023 13:03:21

Host Identification

Mac Address : N/A  
Circuit Id : N/A  
Remote Id : N/A  
Sap Id : N/A  
Service Name : N/A  
User Name : user-1@best.net  
Encap Tag Range : N/A  
Encap Tag Sep Range : N/A  
Derived Id : N/A

Matched Objects : userName

Address : 10.1.1.1/24  
Password Type : N/A  
PADO Delay : 0msec  
Pre Auth Policy : N/A  
Auth Policy : radius-auth-1  
Padi Auth Policy : N/A  
Diameter app policy : (Not Specified)

```
Diameter auth policy : (Not Specified)
Acct Policy          : N/A
Dupl Acct Policy    : N/A
User DB             : N/A
Rip Policy          : N/A
Router Advert Policy : N/A
Retailer Svc Id    : 2000
Service            : N/A
Interface          : N/A
Force IPv6CP       : Disabled
IPv6 Address       : N/A
IPv6 Del Pfx       : N/A
IPv6 Slaac Pfx     : N/A
IPv6 Address Pool  : ipv6-iana-pool-1
IPv6 Del Pfx Pool  : N/A
IPv6 Slaac Pfx Pool : N/A
IPv6 Del Pfx Length : N/A
Ignore DF Bit      : Disabled

DHCPV6 lease times
Renew timer        : > 9999 days
Rebind timer       : > 9999 days
Preferred lifetime : 0d 00:00:00
Valid lifetime     : 0d 00:00:00

Identification Strings (option 254)
Subscriber Id      : N/A
SLA Profile String : sls-profile-1
SPI Sharing Group Id: N/A
Sub Profile String : sub-profile-1
App Profile String : N/A
ANCP String        : N/A
Inter Destination Id: N/A
Category Map Name  : N/A

L2TP
Service           : N/A
Tunnel Group      : N/A
LAC Steering Profile: N/A

MSAP defaults
Policy            : N/A
Service          : N/A
Group Interface   : N/A
Group Interface Pfx : none
Group Interface Sfx : none

Filter Ovrules
Ing Ipv4 Fltr    : N/A
Egr Ipv4 Fltr    : N/A
Ing Ipv6 Fltr    : N/A
Egr Ipv6 Fltr    : N/A

Access loop info
Circuit ID format : none
Circuit ID        : N/A
Remote ID format  : none
Remote ID         : N/A

PPP policy parameters
Max sessions per mac: N/A
Keepalive         :
Interval          : 15
Hold-up-multiplier : 2
```

Table 266: Local User Database Field Descriptions

Field	Description
Name	The local user database name
Admin State	The administrative state of the local user database
Host Count	The number of hosts associated with the local user database
Description	The user-provided description of the local user database
Number of Local User Databases	The number of local user databases configured on the node
Number of Hosts	The number of hosts configured on the node
Last Mgmt Change	The sysUpTime at the time of the last modification
DHCP Match Types	The DHCP match type
DHCP CirclD Mask Pfx	The DHCP circuit ID mask prefix
DHCP CirclD Mask Sfx	The DHCP circuit ID mask suffix
PPPoE Match Types	The PPPoE match types; circuit-id, derived-id, dual-stack-remote-id, encap-tag-range, ip, mac, option60, remote-id, sap-id, service-id, string, system-id
PPPoE CirclD Mask Pfx	The PPPoE circuit ID mask prefix
PPPoE CirclD Mask Sfx	The PPPoE circuit ID mask suffix
Circuit Id	The circuit ID to match during host identification
Mac Address	The MAC address to matching during host identification
Remote Id	The remote ID from option 82 to match against
Sap Id	The SAP ID from the Nokia vendor specific sub-option in option 82 to match against
Service Id	The service ID to match during host identification
String	The string from the Nokia vendor specific sub-option in option 82 to match against
Option 60	The Vendor-Identifying Vendor Option to match against
System Id	The system ID from the Nokia vendor specific sub-option in option 82 to match against

Field	Description
Subscriber Id	The subscriber ID which is encoded in the identification strings
SLA Profile String	The SLA profile string which is encoded in the identification strings
Sub Profile String	The subscriber profile string which is encoded in the identification strings
App Profile String	The application profile string which is encoded in the identification strings
ANCP String	The ANCP string which is encoded in the identification strings
Inter Destination Id	The intermediate destination identifier which is encoded in the identification strings
Name	The unmatched host name
Reason	Indicates why this host is not matched
Duplicate Host	The name of the host that is already matched and that has the same values, configured for the objects that correspond with the match types, as this unmatched host
Server-Name	The service name of the unmatched host
Router-Name	The router name of the unmatched host
Interface-Name	The interface name of the unmatched host
Service-Id	The service ID that matches the host identification the Nokia vendor specific sub-option in option 82, or the service where the IPoE session is established
Interface-Name	The interface name associated with the local user database
Svc-Id Svc-Id	The service ID associated with the local user database
Type	The service type
SAP	The capture SAP associated with the local user database
PPPoE	PPPoE associated with the capture SAP; Y or N
PPP	PPPoE associated with the capture SAP; Y or N
Ipoe	IPoE associated with the capture SAP; Y or N

Field	Description
DHCP	DHCP associated with the capture SAP; Y or N
DHCP6	DHCP6 associated with the capture SAP; Y or N
RS	RS associated with the capture SAP; Y or N
No. of SAP(s)	The total number of SAPs
Keepalive	
Interval	The LCP keepalive interval override value configured for this PPP host. N/A means no override is configured
Hold up multiplier	The LCP keepalive hold up multiplier override value configured for this PPP host. N/A means no override is configured

## local-user-db

### Syntax

**local-user-db** *local-user-db-name*

### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt local-user-db)

### Full Context

tools perform subscriber-mgmt local-user-db

### Description

This command provides tools to control the local user database.

### Parameters

***local-user-db-name***

Specifies the name of a local user database up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 14.58 locator

### locator

#### Syntax

**locator** [mt {0 | 2}] [prefix *ipv6-prefix[/prefix-length]*] [adv-router *system-id | hostname*] [algo *algo-id*]

#### Context

[\[Tree\]](#) (show>router>isis>srv6 locator)

#### Full Context

show router isis segment-routing-v6 locator

#### Description

This command displays IS-IS SRv6 locators.

#### Parameters

##### *ipv6-prefix[/prefix-length]*

Displays routes only matching the specified *ip-address* and length.

**Values** *ipv6-prefix[/prefix]*: x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x: [0 to FFFF]H  
d: [0 to 255]D  
*prefix-length*: 1 to 128

##### *system-id | hostname*

Displays information for the specific IS-IS advertising router. The host name can be up to 38 characters.

##### *algo-id*

Displays information for the specified algorithm.

**Values** 0 to 255

#### Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## locator

### Syntax

**locator** [*locator-name*]

### Context

[\[Tree\]](#) (show>router>srv6 locator)

### Full Context

show router segment-routing-v6 locator

### Description

This command displays the SRv6 locator status.

### Parameters

***locator-name***

Specifies the locator name, up to 64 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## 14.59 lockout

## lockout

### Syntax

**lockout** *aps-id*

### Context

[\[Tree\]](#) (tools>perform>aps lockout)

### Full Context

tools perform aps lockout

### Description

This command locks out the protection circuit.

### Parameters

***aps-id***

Specifies the APS ID.



Values	<i>aps-id</i>	<i>aps-group-id</i>
	aps	keyword
	group-id	1 to 128

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## lockout

### Syntax

**lockout id** *tunnel-id*

**lockout** *lsp-name*

### Context

[\[Tree\]](#) (tools>perform>router>mpls>tp-tunnel lockout)

### Full Context

tools perform router mpls tp-tunnel lockout

### Description

This command performs a lockout of protection for an MPLS-TP LSP. This prevents a switchover to the protect path.

### Parameters

#### *tunnel-id*

Specifies the tunnel number of the MPLS-TP LSP.

**Values** 0 to 42949667295

#### *lsp-name*

Specifies the name of the MPLS-TP LSP, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## lockout

### Syntax

**lockout router** *router-id* **local-gateway-address** *local-gateway-address* **mda** *mda*

**lockout router** *router-id* **local-gateway-address** *local-gateway-address* **esa-vm** *esa-id/vm-id*

**lockout router** *router-id* **local-gateway-address** *local-gateway-address* **remote** *ip-address[:port]*  
**lockout router** *router-id* **mda** *mda*

## Context

[\[Tree\]](#) (show>ipsec lockout)

## Full Context

show ipsec lockout

## Description

This command displays the lockout status for the specified IPsec clients. If remote address information is not specified, the system displays a list of clients that have been locked out on the specified ISA, along with the IPsec gateway if *local-gateway-address* is specified.

## Parameters

### *router-id*

Specifies the ID of the router where the IPsec gateway is configured.

### *local-gateway-address*

Specifies the IP address of the local IPsec gateway.

### *mda*

Specifies the MDA ID of the ISA.

### *ip-address*

Specifies the IP address of the remote client.

### *port*

Specifies the port of the remote client.

### *esa-vm*

Displays the ID of the configured ESA and ESA VM.

### Values

esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of lockout information.

### Output Example

```
show ipsec lockout router 300 local-gateway-address 172.16.100.1 remote  
192.168.61.100:500  
=====
```

```
IPsec Lockout Client
=====
Lockout           : True
Router ID        : 300
Local Gateway Address : 172.16.100.1
Lockout Client Address: 192.168.61.100
Lockout Client Port  : 500
No. of Failed Attempts: 2
No. of Dropped Packets: 2
Remaining Block Time : 289 seconds
=====
```

## lockout

### Syntax

**lockout router** *router-id*

**lockout router** *router-id* **local-gateway-address** *local-gateway-address*

**lockout router** *router-id* **local-gateway-address** *local-gateway-address* **remote** *ip-address[:port]*

### Context

[\[Tree\]](#) (clear>ipsec lockout)

### Full Context

clear ipsec lockout

### Description

This command clears the lockout state for the specified clients. If remote address information is not specified, the system clears the lockout state for all clients within the specified routing instance, along with all clients within the specified IPsec gateway if *local-gateway-address* is specified.

### Parameters

#### ***router-id***

Specifies the ID of the router where the IPsec gateway is configured.

#### ***local-gateway-address***

Specifies the IP address of the local IPsec gateway.

#### ***ip-address***

Specifies the IP address of the remote client.

#### ***port***

Specifies the port of the remote client.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 14.60 lockout-annexb

### lockout-annexb

#### Syntax

**lockout-annexb** *aps-id*

#### Context

[\[Tree\]](#) (tools>perform>aps lockout-annexb)

#### Full Context

tools perform aps lockout-annexb

#### Description

This command locks out the Annex B APS group.

#### Parameters

***aps-id***

Specifies the APS ID.

#### Values

<i>aps-id</i>	<i>aps-group-id</i>
aps	keyword
group-id	1 to 128

#### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## 14.61 log

### log

#### Syntax

**log**

#### Context

[\[Tree\]](#) (show log)

### Full Context

show log

### Description

Commands in this context display event and accounting policy log information.

### Platforms

All

log

### Syntax

log

### Context

[\[Tree\]](#) (show>service>id log)

### Full Context

show service id log

### Description

This command displays event and accounting policy log information.

### Platforms

All

log

### Syntax

log

### Context

[\[Tree\]](#) (show>li log)

### Full Context

show li log

### Description

This command displays LI event log information.

### Platforms

All

## log

### Syntax

**log** *log-id*

### Context

**[Tree]** (clear>li log)

### Full Context

clear li log

### Description

This command clears LI event log information.

### Parameters

***log-id***

Specifies the log ID.

**Values** 1 to 100

### Platforms

All

## log

### Syntax

**log** [*bindings*]

**log** *log-id* [*match string*]

### Context

**[Tree]** (show>filter log)

### Full Context

show filter log

### Description

This command shows the contents of a memory-based or a file-based filter log.

If the optional keyword **match** and *string* parameter are given, the command displays the given filter log from the first occurrence of the given string.

## Parameters

### bindings

Displays the number of filter logs currently instantiated.

### log-id

Specifies the filter log ID destination expressed as a decimal integer.

**Values** 101 to 199

### string

Specifies to start displaying the filter log entries from the first occurrence of *string*.

## Platforms

All

## Output

The following output is an example of filter log entry information, and [Table 267: Filter Log Output Fields](#) describes the fields. If log summary is active, the filter log mini-tables contain the information described in [Table 268: Filter Log Summary Mini-Table Fields](#).

### Output Example

```
2007/04/13 16:23:09 Filter: 100:100 Desc: Entry-100
Interface: to-ser1 Action: Forward
Src MAC: 04-5b-01-01-00-02 Dst MAC: 04-5d-01-01-00-02 EtherType: 0800
Src IP: 10.10.0.1:646 Dst IP: 10.10.0.4:49509 Flags: TOS: c0
Protocol: TCP Flags: ACK
```

```
2007/04/13 16:23:10 Filter: 100:100 Desc: Entry-100
Interface: to-ser1 Action: Forward
Src MAC: 04-5b-01-01-00-02 Dst MAC: 04-5d-01-01-00-02 EtherType: 0800
Src IP: 10.10.0.1:646 Dst IP: 10.10.0.3:646 Flags: TOS: c0
Protocol: UDP
```

```
2007/04/13 16:23:12 Filter: 100:100 Desc: Entry-100
Interface: to-ser1 Action: Forward
Src MAC: 04-5b-01-01-00-02 Dst MAC: 01-00-5e-00-00-05 EtherType: 0800
Src IP: 10.10.13.1 Dst IP: 224.0.0.5 Flags: TOS: c0
Protocol: 89
Hex: 02 01 00 30 0a 0a 00 01 00 00 00 00 00 ba 90 00 00
    00 00 00 00 00 00 00 00 ff ff ff 00 00 03 02 01
```

```
A:ALA-A>config# show filter log bindings
```

```
=====
Filter Log Bindings
=====
```

```
Total Log Instances (Allowed)      : 2046
Total Log Instances (In Use)       : 0
Total Log Bindings                  : 0
```

```
-----
Type FilterId EntryId Log Instantiated
-----
```

```
No Instances found
```

```
=====
A:ALA-A>config#
```

A summary log is printed only in case TotCnt is different from 0. Only the address types with at least 1 entry in the mini-table are printed.

```
A:ALA-A>config# show filter log 190
=====
Summary Log[190] Crit1: SrcAddr TotCnt:      723 ArpCnt:      83
Mac          8 06-06-06-06-06-06
Mac          8 06-06-06-06-06-05
Mac          8 06-06-06-06-06-04
Mac          8 06-06-06-06-06-03
Mac          8 06-06-06-06-06-02
Ip           16 10.6.6.1
Ip           16 10.6.6.2
Ip           16 10.6.6.3
Ip           16 10.6.6.4
Ip           8 10.6.6.5
Ipv6         8 3ffe:1616:1616:1616:1616:1616:
Ipv6         8 3ffe:1616:1616:1616:1616:1616:ffff:ffff
Ipv6         8 3ffe:1616:1616:1616:1616:1616:ffff:ffffe
Ipv6         8 3ffe:1616:1616:1616:1616:1616:ffff:ffffd
Ipv6         8 3ffe:1616:1616:1616:1616:1616:ffff:ffffc
=====
A:ALA-A
```

**Log Message Formatting** — Each filter log entry contains the following information in case summary log feature is not active (as appropriate).

Table 267: Filter Log Output Fields

Label	Description
yyyy/mm/dd hh:mm:ss	The date and timestamp for the log filter entry where <i>yyyy</i> is the year, <i>mm</i> is the month, <i>dd</i> is the day, <i>hh</i> is the hour, <i>mm</i> is the minute and <i>ss</i> is the second
Filter	The filter ID and the entry ID which generated the filter log entry in the form <i>Filter_ID:Entry_ID</i>
Desc	The description of the filter entry ID which generated the filter log entry
Interface	The IP interface on which the filter ID and entry ID was associated which generated the filter log entry
Action	The action of the filter entry on the logged packet
Src MAC	The source MAC address of the logged packet
Dst MAC	The destination MAC of the logged packet
EtherType	The Ethernet type of the logged Ethernet type II packet
Src IP	The source IP address of the logged packet; the source port is displayed after the IP address as appropriate separated with a colon



Label	Description
Dst IP	The destination IP address of the logged packet; the source port is displayed after the IP address as appropriate separated with a colon
Flags (IP flags)	M — the more fragments IP flag is set in the logged packet DF — the do not fragment IP flag is set in the logged packet
TOS	The ToS byte value in the logged packet
Protocol	The IP protocol of the logged packet (TCP, UDP, ICMP or a protocol number in hex)
Flags (TCP flags)	URG — Urgent bit set ACK — Acknowledgment bit set RST — Reset bit set SYN — Synchronize bit set FIN — Finish bit set
HEX	If an IP protocol does not have a supported decode, the first 32 bytes following the IP header are printed in a hex dump Log entries for non-IP packets include the Ethernet frame information and a hex dump of the first 40 bytes of the frame after the Ethernet header
Total Log Instances (Allowed)	Specifies the maximum allowed instances of filter logs allowed on the system
Total Log Instances (In Use)	Specifies the instances of filter logs presently existing on the system
Total Log Bindings	Specifies the count of the filter log bindings presently existing on the system
Type	The type of service of the service ID
Filter ID	Uniquely identifies an IP filter as configured on the system
Entry ID	The identifier which uniquely identifies an entry in a filter table
Log	Specifies an entry in the filter log table
Instantiated	Specifies if the filter log for this filter entry has or has not been instantiated

If the packet being logged does not have a source or destination MAC address (that is, POS) then the MAC information output line is omitted from the log entry.

If log summary is active, the filter log mini-tables contain the information described in [Table 268: Filter Log Summary Mini-Table Fields](#).

Table 268: Filter Log Summary Mini-Table Fields

Label	Description
<i>Summary Log LogID</i>	Displays the log ID
Crit1	Summary criterion that is used as index into the mini-tables of the log
TotCnt	The total count of logs
ArpCnt	Displays the total number of ARP messages logged for this log ID
Src... Dst...	The address type indication of the key in the mini-table
count	The number of messages logged with the specified source/destination address
address	The address for which count messages were received

## log

### Syntax

**log** *log-id*

### Context

[\[Tree\]](#) (clear>filter log)

### Full Context

clear filter log

### Description

Clears the contents of a memory or file based filter log.  
This command has no effect on a syslog based filter log.

### Parameters

***log-id***

Specifies the filter log ID as a decimal integer.

**Values** 101 to 199

### Platforms

All

## log

### Syntax

**log** *log-id*

### Context

[\[Tree\]](#) (clear log)

### Full Context

clear log

### Description

The **clear log** *log-id* command has been deprecated and replaced by the **clear log log-id** *log-id* command. The **clear log** *log-id* command continues to be supported, but it is recommended to use the **clear log log-id** *log-id* command instead.

### Parameters

***log-id***

Specifies the event log ID to be initialized or rolled over.

**Values** 1 to 100

### Platforms

All

## log

### Syntax

**log**

### Context

[\[Tree\]](#) (tools>dump log)

### Full Context

tools dump log

### Description

Commands in this context dump log information.

### Platforms

All

## log

### Syntax

log

### Context

[\[Tree\]](#) (tools>perform log)

### Full Context

tools perform log

### Description

This command enables tools for event logging.

### Platforms

All

## 14.62 log-collector

## log-collector

### Syntax

log-collector

### Context

[\[Tree\]](#) (show>log log-collector)

### Full Context

show log log-collector

### Description

This command shows log collector statistics for the main, security, change and debug log collectors.

### Platforms

All

### Output

The following output is an example of log collector information.

[Table 269: Show Log-Collector Output Fields](#) describes log-collector output fields.

### Output Example

```
A:ALA-1# show log log-collector
=====
Log Collectors
=====
Main          Logged   : 1224          Dropped   : 0
  Dest Log Id: 99   Filter Id: 0      Status: enabled  Dest Type: memory
  Dest Log Id: 100 Filter Id: 1001   Status: enabled  Dest Type: memory

Security      Logged   : 3          Dropped   : 0

Change        Logged   : 3896       Dropped   : 0

Debug         Logged   : 0          Dropped   : 0

=====
A:ALA-1#
```

Table 269: Show Log-Collector Output Fields

Label	Description
<Collector Name>	<p>Main — The main event stream contains the events that are not explicitly directed to any other event stream.</p> <p>Security — The security stream contains all events that affect attempts to breach system security such as failed login attempts, attempts to access MIB tables to which the user is not granted access or attempts to enter a branch of the CLI to which access has not been granted.</p> <p>Change — The change event stream contains all events that directly affect the configuration or operation of this node.</p> <p>Debug — The debug-trace stream contains all messages in the debug stream.</p>
Dest. Log ID	Specifies the event log stream destination.
Filter ID	The value is the index to the entry which defines the filter to be applied to this log's source event stream to limit the events output to this log's destination. If the value is 0, then all events in the source log are forwarded to the destination.
Status	<p>Enabled — Logging is enabled.</p> <p>Disabled — Logging is disabled.</p>
Dest. Type	<p>Console — A log created with the console type destination displays events to the physical console device.</p> <p>Events are displayed to the console screen whether a user is logged in to the console or not.</p> <p>Session — A user logged in to the console device or connected to the CLI via a remote telnet or SSH session can also create a log with a destination type of 'session'. Events are displayed to the session device until the user logs off.</p>

Label	Description
	Syslog — Log events are sent to a syslog receiver. SNMP traps — Events defined as SNMP traps are sent to the configured SNMP trap destinations and are logged in NOTIFICATION-LOG-MIB tables. File — All selected log events are directed to a file on one of the compact flash disks. Memory — All selected log events are directed to an in-memory storage area.

## 14.63 log-events

### log-events

#### Syntax

**log-events repeating-events**

#### Context

**[Tree]** (clear>log log-events)

#### Full Context

clear log log-events

#### Description

This command cancels all log events that are currently repeating. All repeating log events will stop repeating. See the **repeat** parameter of the **configure log event-control**.

#### Platforms

All

## 14.64 log-id

### log-id

#### Syntax

**log-id** [*log-id*] [**severity** *severity-level*] [**application** *application*] [**sequence** *from-seq* [*to-seq*]] [**count** *count*] [**subject** *subject* [**regexp**]] [**ascending** | **descending**] [**message** *format* [**msg-regexp**]]

## Context

[\[Tree\]](#) (show>service>id>log log-id)

## Full Context

```
show service id log log-id
```

## Description

This command displays an event log summary with settings and statistics or the contents of a specific log file, SNMP log, or memory log.

If the command is specified with no command line options, a summary of the defined system logs is displayed. The summary includes log settings and statistics.

If the log ID of a memory, SNMP, or file event log is specified, the command displays the contents of the log. Additional command line options control what and how the contents are displayed.

Contents of logs with console, session or syslog destinations cannot be displayed. The actual events can only be viewed on the receiving syslog or console device.

## Parameters

### *log-id*

Displays the contents of the specified file log or memory log ID. The log ID must have a destination of an SNMP or file log or a memory log for this parameter to be used.

**Values** 1 to 100

**Default** Displays the event log summary.

### *severity-level*

Displays only events with the specified and higher severity.

**Values** cleared, indeterminate, critical, major, minor, warning

**Default** All severity levels.

### *application*

Displays only events generated by the specified application.

**Values** anysec, application\_assurance, aps, atm, bfd, bgp, calltrace, ccag, cflowd, chassis, cpmhwfilter, cpmhwqueue, debug, dhcp, dhcps, diameter, dot1x, dynsvc, efm\_oam, elmi, ering, eth\_cfm, etun, filter, fpe, gsmp, gtungrp, igh, igmp, igmp\_snooping, ip, ipfix, ipsec, ipsec\_cpm, isis, l2tp, lag, ldap, ldp, li, lldp, logger, mcac, mcpath, mc\_redundancy, mirror, mld, mld\_snooping, mpls, mpls\_tp, mrrp, msdp, nat, ntp, oam, open\_flow, ospf, pcep, pim, pim\_snooping, port, ppp, pppoe, pppoe\_clnt, ptp, pxc, python, qos, radius, rip, rip\_ng, route\_next\_hop, route\_policy, rpki, rsvp, security, sflow, snmp, stp, subscr\_mgmt, sub\_host\_trk, svcmgr, system, tip, tls, user, user\_db, video, vrrp, vrtr, wlan\_gw, wpp

**Default** All applications.

***from-seq [to-seq]***

Displays the log entry numbers from a particular entry sequence number (*from-seq*) to another sequence number (*to-seq*). The *to-seq* value must be larger than the *from-seq* value.

If the *to-seq* number is not provided, the log contents to the end of the log is displayed unless the **count** parameter is present in which case the number of entries displayed is limited by the **count**.

**Values** 1 to 4294967295

**Default** All sequence numbers.

***count***

Limits the number of log entries displayed to the *number* specified.

**Values** 1 to 4294967295

**Default** All log entries.

***subject***

Displays only log entries matching the specified text *subject* string, up to 32 characters. The subject is the object affected by the event, for example the port-id would be the subject for a link-up or link-down event.

***regexp***

Specifies to use a regular expression as parameters with the specified **subject** string.

***ascending | descending***

Specifies sort direction. Logs are normally shown from the newest entry to the oldest in **descending** sequence number order on the screen. When using the **ascending** parameter, the log is shown from the oldest to the newest entry.

**Default** Descending.

***format***

Specifies a message string, up to 400 characters, to be used in the display criteria.

***msg-regexp***

Specifies to use a regular expression as parameters with the specified message string.

**Platforms**

All

**Output**

[Table 270: Show Log-ID Field Descriptions](#) describes the log ID field output.

*Table 270: Show Log-ID Field Descriptions*

Label	Description
Log Id	An event log destination.



Label	Description
Source	no — The event log filter is not currently in use by a log ID. yes — The event log filter is currently in use by a log ID.
Filter ID	The value is the index to the entry which defines the filter to be applied to this log's source event stream to limit the events output to this log's destination. If the value is 0, then all events in the source log are forwarded to the destination.
Admin State	Up — Indicates that the administrative state is up. Down — Indicates that the administrative state is down.
Oper State	Up — Indicates that the operational state is up. Down — Indicates that the operational state is down.
Logged	The number of events that have been sent to the log source(s) that were forwarded to the log destination.
Dropped	The number of events that have been sent to the log source(s) that were not forwarded to the log destination because they were filtered out by the log filter.
Dest. Type	Console — All selected log events are directed to the system console. If the console is not connected, then all entries are dropped. Syslog — All selected log events are sent to the syslog address. SNMP traps — Events defined as SNMP traps are sent to the configured SNMP trap destinations and are logged in NOTIFICATION-LOG-MIB tables. File — All selected log events are directed to a file on one of the CPM's compact flash disks. (7750 SR and 7450 ESS only). Memory — All selected log events are directed to an in-memory storage area.
Dest ID	The event log stream destination.
Size	The allocated memory size for the log.
Time format	The time format specifies the type of timestamp format for events sent to logs where log ID destination is either syslog or file. When the time format is UTC, timestamps are written using the Coordinated Universal Time value. When the time format is local, timestamps are written in the system's local time.

## log-id

### Syntax

```
log-id [log-id | log-name] [severity severity-level] [application application] [sequence from-seq [to-seq]] [count count] [router router-instance [expression]] [subject subject [regexp]] [{ ascending | descending}] [message message [msg-regexp]]
```

## Context

**[Tree]** (show>li>log log-id)

## Full Context

show li log log-id

## Description

This command displays information for specified log.

## Parameters

### ***log-id | log-name***

Specifies the log ID or name.

**Values** 1 to 100

### ***severity-level***

Specifies the severity level.

**Values** cleared, indeterminate, critical, major, minor, warning

### ***application***

Specifies the application name.

**Values** anysec, application\_assurance, aps, atm, auto\_prov, bfd, bgp, bier, bmp, calltrace, ccag, cflowd, chassis, cpmhwfilter, cpmhwqueue, debug, dhcp, dhcps, diameter, dot1x, dynsvc, efm\_oam, elmi, ering, eth\_cfm, etun, filter, fpe, gsmp, gtp, gtungrp, icl, igh, igmp, igmp\_snooping, ip, ipfix, ipsec, ipsec\_cpm, isis, l2tp, lag, ldap, ldp, li, lldp, logger, macsec, mcac, mcpath, mc\_redundancy, mgmt\_core, mirror, mld, mld\_snooping, mpls, mpls\_tp, mpls\_lmgr, mrp, msdp, nat, nge, ntp, oam, open\_flow, ospf, pcap, pcep, pfc, pim, pim\_snooping, port, ppp, pppoe, pppoe\_clnt, profile, ptp, pxc, python, qos, radius, rib\_api, rip, rip\_ng, route\_next\_hop, route\_policy, rpki, rsvp, security, sflow, snmp, sr\_policy, stp, subscr\_mgmt, sub\_host\_trk, svcmgr, system, tip, tls, user, user\_db, video, vrrp, vrtr, wlan\_gw, wpp

### ***from-seq [to-seq]***

Specifies the sequence value.

**Values** 1 to 4294967295

### ***count***

Specifies the count.

**Values** 1 to 4294967295

### ***router-instance***

Specifies the router instance.

### ***subject***

Specifies a subject string to match.

**regex**

Specifies to use a regular expression match.

**ascending | descending**

Specifies the sort direction.

**message**

Specifies the message, up to 400 characters.

**msg-regex**

Specifies to use a message regular expression match.

**Platforms**

All

## log-id

**Syntax**

**log-id** [*log-id* | *log-name*] [**severity** *severity-level*] [**application** *application*] [**sequence** *from-seq* [*to-seq*]] [**count** *count*] [**router** *router-instance* [**expression**]] [**subject** *subject* [**regex**]] [**ascending** | **descending**] [**message** *message* [**msg-regex**]]

**Context**

[\[Tree\]](#) (show>log log-id)

**Full Context**

show log log-id

**Description**

This command displays an event log summary with settings and statistics or the contents of a specific log file, SNMP log, or memory log.

If the command is specified with no command line options, a summary of the defined system logs is displayed. The summary includes log settings and statistics.

If the log ID of a memory, SNMP, or file event log is specified, the command displays the contents of the log. Additional command line options control what and how the contents are displayed.

Contents of logs with console, session or syslog destinations cannot be displayed. The actual events can only be viewed on the receiving syslog or console device.

**Parameters**

***log-id* | *log-name***

Displays the contents of the specified file log or memory log ID. The log ID, or optional log name (up to 64 characters), must have a destination of an SNMP or file log or a memory log for this parameter to be used.

**Default** Displays the event log summary

**Values** 1 to 101

**severity-level**

Displays only events with the specified and higher severity.

**Default** All severity levels

**Values** cleared, indeterminate, critical, major, minor, warning

**application**

Displays only events generated by the specified application.

**Default** All applications

The following values are examples of applications:

**Values** bgp, cflowd, chassis, dhcp, debug, filter, igmp, ip, isis, lag, ldp, lldp, logger, mirror, mpls, oam, ospf, pim, port, ppp, rip, route\_policy, rsvp, security, snmp, stp, svcmgr, system, user, vrrp, vrtr, ospf\_ng, ntp

**expression**

Specifies to use a regular expression as match criteria for the router instance string.

**from-seq [to-seq]**

Displays the log entry numbers from a particular entry sequence number (*from-seq*) to another sequence number (*to-seq*). The *to-seq* value must be larger than the *from-seq* value.

If the *to-seq* number is not provided, the log contents to the end of the log is displayed unless the **count** parameter is present in which case the number of entries displayed is limited by the **count**.

**Default** All sequence numbers

**Values** 1 to 4294967295

**count**

Limits the number of log entries displayed to the *number* specified.

**Default** All log entries

**Values** 1 to 4294967295

**router-instance**

Specifies a router name up to 32 characters in length to be used in the display criteria.

**message**

Specifies a message string up to 400 characters in length to be used in the display criteria.

**msg-regex**

Specifies to use a regular expression as parameters with the specified *message* string.

**subject**

Displays only log entries matching the specified text *subject* string. The subject is the object affected by the event, for example the port-id would be the subject for a link-up or link-down event.

**regexp**

Specifies to use a regular expression as parameters with the specified *subject* string.

**ascending | descending**

Specifies sort direction. Logs are normally shown from the newest entry to the oldest in **descending** sequence number order on the screen. When using the **ascending** parameter, the log is shown from the oldest to the newest entry.

**Default** Descending

**Platforms**

All

**Output**

The following output is an example of log ID information.

[Table 271: Log-Id Output Field Descriptions](#) describes the log ID field output.

**Output Example**

```
A:bkvm30# show log log-id
=====
Event Logs
=====
Log Source   Filter Admin Oper   Logged   Dropped Dest  Dest Size
Name/       Id     State State          Type     Id
Id
-----
1
1  none      none   up    down         0         0 none      N/A
5
5  D         none   up    up            0         0 cli       1024
15
15 M         none   up    up            24        0 cli       512
20
20 S         none   up    up            12        0 memory    256
21
21 C         none   up    up            258       0 memory    256
22
22 M S C     none   up    up            288       0 file      15  N/A
33
33 M S C     none   up    down         0         0 none      N/A
34
34 none      none   up    down         0         0 file      33  N/A
35
35 M S      none   up    up            36        0 memory    100
55
55 C         none   up    down         0         0 cli       500
77
77 S         none   up    up            0         0 cli       100
82
82 none      none   up    down         0         0 none      N/A
99
99 M         none   up    up            122       0 memory    500
```

```
100
100 M      1001  up   up           10       112 memory      500
=====
```

### Output Example: Memory or File Event Log Contents

```
A:admin@Dut-A# show log log-id log-id 10
=====
Event Log 10
=====
Description : (Not Specified)
Memory Log contents [size=100  next event=13  (not wrapped)]
12 2018/02/20 10:12:00.429 UTC MINOR: DEBUG #2001 Base GRPC
"GRPC: RPC-2: gnmi.Subscribe
  Client URI: ipv4:192.99.5.0:49648
  Username: admin
Received message of type gnmi.SubscribeRequest:
  .request = subscribe:
  .encoding: 0 = JSON
  .mode: 0 = STREAM
  .prefix: /
  .subscription (1):
  .path: /state/router[router-instance=*]/interface[interface-name=*]/ipv4/oper-state
  .mode: 1 = ON_CHANGE
  .sample_interval: 10000000000
"
11 2018/02/20 10:12:00.422 UTC MINOR: DEBUG #2001 Base GRPC
"GRPC: RPC-2: gnmi.Subscribe
  Client URI: ipv4:192.99.5.0:49648
  Username: admin
Client called RPC.
Now waiting till first message arrive.
"

A:gal171# show log log-id 99
=====
Event Log 99
=====
Description : Default System Log
Memory Log contents [size=500  next event=70  (not wrapped)]
69 2007/01/25 18:20:40.00 UTC CRITICAL: SYSTEM #2029 Base Redundancy
"The active CPM card A is operating in singleton mode.  There is no standby CPM card."
68 2007/01/25 17:48:38.16 UTC WARNING: SYSTEM #2006 Base LOGGER
"New event throttle interval 10, configuration modified"
67 2007/01/25 00:34:53.97 UTC CRITICAL: SYSTEM #2029 Base Redundancy
"The active CPM card A is operating in singleton mode.  There is no standby CPM card."
66 2007/01/24 22:59:22.00 UTC CRITICAL: SYSTEM #2029 Base Redundancy
"The active CPM card A is operating in singleton mode.  There is no standby CPM card."
65 2007/01/24 02:08:47.92 UTC CRITICAL: SYSTEM #2029 Base Redundancy
"The active CPM card A is operating in singleton mode.  There is no standby CPM card."
...
=====
A:gal171

A:NS061550532>config>log>snmp-trap-group# show log log-id 1
=====
Event Log 1
=====
```

```
SNMP Log contents [size=100 next event=3 (not wrapped)]
Cannot send to SNMP target address 10.1.1.1.
Waiting to replay starting from event #2

14 2000/01/05 00:54:09.11 UTC WARNING: MPLS #2007 Base VR 1:
"Instance is in administrative state: inService, operational state: inService"

13 2000/01/05 00:54:09.11 UTC WARNING: MPLS #2008 Base VR 1:
"Interface linkToIxia is in administrative state: inService, operational state:
inService"
....
=====
A:NS061550532>config>log>snmp-trap-group#
```

Table 271: Log-Id Output Field Descriptions

Label	Description
Log Name/Id	An event log destination.
Source	no — The event log filter is not currently in use by a log ID. yes — The event log filter is currently in use by a log ID.
Filter ID	The value is the index to the entry which defines the filter to be applied to this log's source event stream to limit the events output to this log's destination. If the value is 0, then all events in the source log are forwarded to the destination.
Admin State	Up — Indicates that the administrative state is up. Down — Indicates that the administrative state is down.
Oper State	Up — Indicates that the operational state is up. Down — Indicates that the operational state is down.
Logged	The number of events that have been sent to the log source(s) that were forwarded to the log destination.
Dropped	The number of events that have been sent to the log source(s) that were not forwarded to the log destination because they were filtered out by the log filter.
Dest. Type	Console — All selected log events are directed to the system console. If the console is not connected, then all entries are dropped. Syslog — All selected log events are sent to the syslog address. SNMP traps — Events defined as SNMP traps are sent to the configured SNMP trap destinations and are logged in NOTIFICATION-LOG-MIB tables. File — All selected log events are directed to a file on one of the CPM's compact flash disks. Memory — All selected log events are directed to an in-memory storage area.

Label	Description
Dest ID	The event log stream destination.
Size	The allocated memory size for the log.
Time format	The time format specifies the type of timestamp format for events sent to logs where log ID destination is either syslog or file. When the time format is UTC, timestamps are written using the Coordinated Universal Time value. When the time format is local, timestamps are written in the system's local time.

## log-id

### Syntax

**log-id** *log-id*

### Context

[\[Tree\]](#) (clear>log log-id)

### Full Context

clear log log-id

### Description

Reinitializes or rolls over the specified memory/file event log ID. Memory logs are reinitialized and cleared of contents. File logs are manually rolled over by this command.

This command is only applicable to event logs that are directed to file destinations and memory destinations.

SNMP, syslog, console, or session logs are not affected by this command.

### Parameters

***log-id***

Specifies the event log ID to be initialized or rolled over.

**Values** 1 to 100

### Platforms

All



## 14.65 logger-event-bundling

### logger-event-bundling

#### Syntax

logger-event-bundling

#### Context

[\[Tree\]](#) (tools>dump>router>mpls logger-event-bundling)

#### Full Context

tools dump router mpls logger-event-bundling

#### Description

This command dumps logger event bundling information for MPLS.

#### Platforms

All

## 14.66 longer

### longer

#### Syntax

longer

#### Context

[\[Tree\]](#) (show>router>bgp>routes longer)

#### Full Context

show router bgp routes longer

#### Description

This command displays the specified BGP route and subsets of the route.

#### Platforms

All

## 14.67 loopback

loopback

### Syntax

loopback

### Context

[\[Tree\]](#) (tools>perform>service>id loopback)

### Full Context

tools perform service id loopback

### Description

Tools for placing and removing SAPs and SDP bindings in data loopback. Overwrite occurs for any SAP or SDP binding when issuing a subsequent loopback command on the same SAP or SDP binding.

**Interactions:** Loopback functions are only applicable to Epipe, PBB Epipe, VPLS, I-VPLS and PBB core service contexts.

### Platforms

All

loopback

### Syntax

loopback

### Context

[\[Tree\]](#) (tools>dump>service loopback)

### Full Context

tools dump service loopback

### Description

This command displays all configured Ethernet loopbacks.

### Platforms

All

## loopback

### Syntax

**loopback sap** *sap-id*

**loopback sdp** *sdp-id:vc-id*

### Context

[\[Tree\]](#) (tools>dump>service>id loopback)

### Full Context

tools dump service id loopback

### Description

This command displays configured service-specific Ethernet loopbacks.

### Parameters

#### *sap-id*

Specifies the SAP ID.

#### Values

null	<i>port-id</i>   <i>lag-id</i>
dot1q	{ <i>port-id</i>   <i>lag-id</i> }:{ <i>qtag1</i>   <i>cp-conn-prof-id</i> }
qinq	{ <i>port-id</i>   <i>lag-id</i> }:{ <i>qtag1</i>   <i>cp-conn-prof-id</i> }.{ <i>qtag2</i>   <i>cp-conn-prof-id</i> }
	cp: keyword
	<i>conn-prof-id</i> : 1..8000
port-id	slot/mda/port [.channel]
	eth-sat-id: <i>esat-id</i> /slot/port
	esat: keyword
	id: 1 to 20
	pxc-id: <i>pxc-id.sub-port</i>
	pxc <i>pxc-id.sub-port</i>
	pxc: keyword
	id: 1 to 64
	sub-port: a, b
lag-id	<i>lag-id</i>
	lag: keyword

*id*: 1..800  
qtag1 0..4094  
qtag2 \* | null | 0..4094

### ***sdp-id:vc-id***

Specifies the SDP ID and VC-ID.

**Values** *sdp-id*: 1 to 17407  
*vc-id*: 1 to 4294967295

### **Platforms**

All

## 14.68 Isn

### Isn

#### **Syntax**

**Isn create router** *router-instance* [ **b4** *ipv6-address*] [**aftr** *ipv6-address*] **ip** *ip-address* **protocol** {**tcp** | **udp**}  
[**port** *port*] **lifetime** *lifetime* [**outside-ip** *ipv4-address*] [**outside-port** *port*] [**nat-policy** *nat-policy-name*]  
[*force*]

**Isn delete router** *router-instance* [**b4** *ipv6-address*] **ip** *ip-address* **protocol** {**tcp** | **udp**} **port** *port* [**nat-policy** *nat-policy-name*]

**Isn modify router** *router-instance* [ **b4** *ipv6-address*] **ip** *ip-address* **protocol** {**tcp** | **udp**} **port** *port* **lifetime** *lifetime* [**nat-policy** *nat-policy-name*]

#### **Context**

[\[Tree\]](#) (tools>perform>nat>port-forwarding-action Isn)

#### **Full Context**

tools perform nat port-forwarding-action Isn

#### **Description**

This command enables large-scale NAT port forwarding actions.

#### **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### **Output**

The following output is an example of this command.

## Output Example

```
*A:SR12_PPP0E# tools perform nat port-forwarding-action lsn create router 100
ip 10.2.3.4 protocol tcp lifetime infinite outside-port 666
*A:SR12_PPP0E# tools perform nat port-forwarding-action lsn create router 100
ip 10.2.3.4 protocol udp lifetime infinite outside-port 666
*A:SR12_PPP0E# configure system persistence nat-port-forwarding location cf3:
*A:SR12_PPP0E# tools dump persistence nat-port-forwarding
-----
Persistence Info
-----
Client          : nat-fwds
File Info :
  Filename      : cf3:\nat_fwds.002
  File State    : CLOSED (Not enough space on disk)
Subsystem Info :
  Nbr Of Registrations : 524288
  Registrations In Use : 2
  Subsystem State    : NOK
*A:SR12_PPP0E#

show+service+nat
| | | +---port-forwarding-entries
| | | +---classic-lsn-sub
| | | +---dslite-lsn-sub
| | | +---l2-aware-sub
| | | +---nat64-lsn-sub
```

## 14.69 Isn-blocks

### Isn-blocks

#### Syntax

```
Isn-blocks [inside-router router-instance] [inside-ip ip-address] [outside-ip-prefix ip-prefix/length]
[outside-port [0..65535]] [pool pool-name]
```

#### Context

[\[Tree\]](#) (show>router>nat Isn-blocks)

#### Full Context

```
show router nat Isn-blocks
```

#### Description

This command displays large scale NAT blocks.

#### Parameters

##### ***router-instance***

Specifies the router instance name and service ID.

**Values**

router-name:	Base , management
service-id:	1 to 2147483647
svc-name:	A string up to 64 characters.

***ip-address***

Specifies the IP address in a.b.c.d format.

***ip-prefix***

Specifies the IP prefix.

**Values** a.b.c.d (host bits must be 0)

***length***

Specifies the IP prefix length.

**Values** 1 to 32

***pool-name***

Specifies the pool name, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of this command.

**Output Example**

```
*A:SR12_PPP0E>show>router>nat# show router Base nat lsn-blocks
=====
Large-Scale NAT blocks for Base
=====
10.0.0.5 [1024..1527]
Pool                : privpool
Policy              : priv-nat-policy
Started             : 2012/01/28 19:10:17
Inside router       : vprn100
Inside IP address   : 2001:db8:470:1F00:FFFF:189
-----
Number of blocks: 1
=====
A:SR12_PPP0E#
```

## 14.70 lsp

### lsp

#### Syntax

**lsp** [*lsp-name*] [**status** {**up** | **down**}] [**from** ip-address | **to** ip-address] [**detail**] [**auto-lsp** {**all** | **mesh-p2p** | **one-hop-p2p**}]

**lsp** {**transit** | **terminate**} [**status** {**up** | **down**}] [**from** *ip-address* | **to** *ip-address* | **lsp-name** *name*] [**detail**]

#### lsp count

**lsp** [*lsp-name*] **activepath** [**auto-lsp** {**all** | **mesh-p2p** | **one-hop-p2p**}]

**lsp** [*lsp-name*] **path** [*path-name*] [**status** {**up** | **down**}] [**detail**] [**auto-lsp** {**all** | **mesh-p2p** | **one-hop-p2p**}]

**lsp** [*lsp-name*] **path** [*path-name*] **mbb** [**auto-lsp** {**all** | **mesh-p2p** | **one-hop-p2p**}]

**lsp** [*lsp-name*] **auto-bandwidth** [**auto-lsp** {**all** | **mesh-p2p** | **one-hop-p2p**}]

**lsp** [*lsp-name*] **path** [*path-name*] [**detail**] [**dns**]

#### Context

[\[Tree\]](#) (show>router>mpls lsp)

#### Full Context

show router mpls lsp

#### Description

This command displays LSP details.

#### Parameters

##### **lsp-name**

Specifies the name of the LSP used in the path, up to 64 characters.

##### **status up**

Keyword used to display an LSP that is operationally up.

##### **status down**

Keyword used to display an LSP that is operationally down.

##### **from ip-address**

Displays the IP address of the ingress router for the LSP.

##### **to ip-address**

Displays the IP address of the egress router for the LSP.

##### **detail**

Keyword used to display detailed information.

**auto-lsp all**

Keyword used to display all the auto LSP types.

**auto-lsp mesh-p2p**

Keyword used to display the mesh-p2p auto LSP types.

**auto-lsp one-hop-p2p**

Keyword used to display the one-hop-p2p auto LSP types.

**transit**

Keyword used to display the number of static LSPs that transit through the router.

**terminate**

Keyword used to display the number of static LSPs that terminate at the router.

**count**

Keyword used to display the total number of LSPs.

**path-name**

Specifies the LSP path name.

**activepath**

Keyword used to display the present path being used to forward traffic.

**mbb**

Keyword used to display make-before-break (MBB) information.

**dns**

Keyword used to display reverse DNS resolution of actual and explicit hop information.

**Platforms**

All

**Output**

The following output is an example of MPLS LSP and detail information, and [Table 272: MPLS LSP Output Fields](#) and [Table 273: LSP Detail Output Fields](#) describes the MPLS LSP output fields.

**Output Example**

```
# show router mpls lsp
=====
MPLS LSPs (Originating)
=====
LSP Name                               To                               Fastfail  Adm  Opr
                               Config
-----
to_10_30_1_1_cspf                     10.30.1.1                       No        Up   Up
to_10_30_1_2_cspf                     10.30.1.2                       No        Up   Dwn
to_10_30_1_3_cspf                     10.30.1.3                       No        Up   Up
to_10_30_1_4_cspf                     10.30.1.4                       No        Up   Dwn
to_10_30_1_5_cspf                     10.30.1.5                       No        Up   Up
to_10_30_1_6_cspf                     10.30.1.6                       No        Up   Dwn
to_10_30_1_110_cspf                   10.30.1.110                     No        Up   Up
to_10_8_100_15_cspf                   10.8.100.15                     No        Up   Dwn
to_10_20_1_20_cspf                     10.20.1.20                      No        Up   Up
to_10_20_1_22_cspf                     10.20.1.22                      No        Up   Up
to_10_100_1_1_cspf                    10.100.1.1                      No        Up   Dwn
```



```

to_10_30_1_1_cspf_2      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_3      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_4      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_5      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_6      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_7      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_8      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_9      10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_10     10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_11     10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_12     10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_13     10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_14     10.30.1.1      No      Up      Up
to_10_30_1_1_cspf_15     10.30.1.1      No      Up      Up
...
-----
LSPs : 201
=====

# show router mpls lsp detail
=====
MPLS LSPs (Originating) (Detail)
=====
Legend :
+ - Inherited
=====
-----
Type : Originating
-----
LSP Name   : C_F_1
LSP Type   : RegularLsp           LSP Tunnel ID       : 1
LSP Index  : 1                   TTM Tunnel Id       : 1
From       : 10.20.1.3
To         : 10.20.1.6
Adm State  : Up                  Oper State           : Up
LSP Up Time : 0d 00:07:27        LSP Down Time       : 0d 00:00:00
Transitions : 3                  Path Changes        : 3
Retry Limit : 0                  Retry Timer          : 20 sec
Signaling  : RSVP               Resv. Style         : SE
Hop Limit  : 255                 Negotiated MTU      : 1500
Adaptive   : Enabled            ClassType           : 0
FastReroute : Disabled          Oper FR              : Disabled
PathCompMethod : pce            ADSPEC              : Enabled
FallbkPathComp : local-cspf
Metric     : N/A                 Metric Type          : igp
Load Bal Wt : N/A                ClassForwarding     : Disabled
Include Grps :                   Exclude Grps        :
None
Least Fill : Disabled
BFDD Template : None             BFD Ping Intvl      : 60
BFDD Enable  : False            BFD Failure-action  : None
WaitForUpTimer : 4

Revert Timer : Disabled          Next Revert In      : N/A
Entropy Label : Enabled+         Oper Entropy Label  : Enabled
Negotiated EL : Disabled
Auto BW      : Disabled
LdpOverRsvp : Enabled
VprnAutoBind : Enabled
IGP Shortcut : Enabled          BGP Shortcut        : Enabled
IGP LFA      : Disabled          IGP Rel Metric      : Disabled
BGPTransTun : Enabled
Oper Metric  : 100
    
```

```

Prop Adm Grp   : Disabled
PCE Report    : Enabled
PCE Control   : Enabled
Path Profile   : None
Admin Tags    : None
Lsp Self Ping : Disabled+
SelfPingOAMFail* : 0
Binding SID    : 1234
Self Ping Timeouts : 0

Primary(a)    : C_F_1
Up Time       : 0d 00:07:28
Bandwidth     : 0 Mbps
=====
* indicates that the corresponding row element may have been truncated.
    
```

```

# show router mpls lsp "lspE" detail
=====
MPLS LSPs (Originating) (Detail)
=====
-----
Type : Originating
-----
LSP Name      : lspE
LSP Type      : RegularLsp
LSP Index     : 1005
From          : 10.20.1.3
Adm State     : Up
LSP Up Time   : 0d 00:19:23
Transitions   : 1
Retry Limit   : 0
Signaling     : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Disabled
CSPF          : Disabled
Metric        : N/A
Load Bal Wt   : N/A
Include Grps  : None
Least Fill    : Disabled
BFDDisable    : FALSE
BFDDisable    : FALSE

LSP Tunnel ID : 1005
TTM Tunnel Id : 1005
To            : 10.20.1.5
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 1
Retry Timer   : 20 sec
Resv. Style   : SE
Negotiated MTU : 1500
ClassType     : 0
Oper FR       : Disabled
ADSPEC        : Disabled

ClassForwarding : Disabled
Exclude Grps    : None

BFD Ping Intvl : 60
BFD failure-ac* : down

Revert Timer : Disabled
EntropyLbl   : Inherited
Auto BW      : Disabled
LdpOverRsvp  : Enabled
VprnAutoBind : Enabled
IGP Shortcut : Enabled
IGP LFA      : Disabled
BGPTransTun  : Enabled
Oper Metric  : 16777215
Prop Adm Grp : Disabled

Next Revert In : N/A
Oper EntropyLbl : Enabled

BGP Shortcut   : Enabled
IGP Rel Metric : Disabled

Primary(a) : E1
Up Time    : 0d 00:19:32
Bandwidth  : 0 Mbps
Standby    : E2
Down Time  : 0d 00:19:46
Bandwidth  : 0 Mbps
=====
    
```

```

# show router mpls lsp "to_10_30_1_1_cspf"
=====
MPLS LSPs (Originating)
    
```

```

=====
LSP Name                To                Fastfail    Adm   Opr
                        Config
-----
to_10_30_1_1_cspf      10.30.1.1        No          Up    Up
-----
LSPs : 1
=====
*A:SRU4>config>router>mpls#

# show router mpls lsp "to_10_30_1_1_cspf" detail
=====
MPLS LSPs (Originating) (Detail)
=====
Type : Originating
-----
LSP Name      : to_10_30_1_1_cspf
LSP Type      : RegularLsp                LSP Tunnel ID : 1
From          : 10.30.1.4
Adm State     : Up                      Oper State     : Up
LSP Up Time   : 0d 01:47:02             LSP Down Time : 0d 00:00:00
Transitions   : 11                      Path Changes   : 11
Retry Limit   : 0                       Retry Timer    : 30 sec
Signaling     : RSVP                    Resv. Style    : SE
Hop Limit     : 255                     Negotiated MTU : 1500
Adaptive      : Enabled                  ClassType      : 0
FastReroute   : Disabled                Oper FR        : Disabled
CSPF          : Enabled                  ADSPEC         : Disabled
Metric        : 0                       Use TE metric  : Disabled
Include Grps:
None                                                Exclude Grps   :
None                                                None
Least Fill    : Disabled
LdpOverRsvp  : Enabled                   VprnAutoBind  : Enabled
IGP Shortcut  : Enabled
Oper Metric   : 1001

Primary(a)    : to_10_30_1_1             Up Time       : 0d 01:47:02
Bandwidth     : 0 Mbps
=====
*A:SRU4>config>router>mpls#

# show router mpls lsp detail to 10.30.1.2
=====
MPLS LSPs (Originating) (Detail)
=====
Type : Originating
-----
LSP Name      : 1
LSP Type      : RegularLsp                LSP Tunnel ID : 1
From          : 0.0.0.0
Adm State     : Down                      Oper State     : Down
LSP Up Time   : 0d 00:00:00             LSP Down Time : 0d 00:00:07
Transitions   : 0                       Path Changes   : 0
Retry Limit   : 0                       Retry Timer    : 30 sec
Signaling     : RSVP                    Resv. Style    : SE
Hop Limit     : 255                     Negotiated MTU : 0
Adaptive      : Enabled                  ClassType      : 0
FastReroute   : Disabled                Oper FR        : Disabled
CSPF          : Disabled                ADSPEC         : Disabled
Metric        : 0
    
```

```

Include Grps:
None
Least Fill : Disabled

Auto BW      : Enabled
Auto BW Min  : 0 Mbps
AB Up Thresh: 5 percent
AB Up BW     : 0 Mbps
AB Curr BW   : 0 Mbps
AB Adj Mul   : 288+
AB Adj Time  : 0 Mins
AB Adj Cnt   : 0
AB Last Adj  : n/a
ABMaxAvgRt  : 0 Mbps
AB Ovfl Lmt  : 0
ABOvflThres : 0 percent
AB Adj Cause: none
LdpOverRsvp : Enabled
IGP Shortcut: Enabled
Oper Metric  : 65535

Exclude Grps :
None

AB OpState    : Down
Auto BW Max   : 100000 Mbps
AB Down Thresh : 5 percent
AB Down BW    : 0 Mbps
AB Samp Intv  : 0
AB Samp Mul   : 1+
AB Samp Time  : 0 Mins
AB Samp Cnt   : 0
AB Next Adj   : 0 Mins
AB Lst AvgRt  : 0 Mbps
AB Ovfl Cnt   : 0
AB Ovfl BW    : 0
AB Monitor BW : False
VprnAutoBind  : Enabled

+ indicates inherited values
=====
    
```

```
# show router mpls lsp lsp1 detail
```

```
=====
MPLS LSPs (Originating) (Detail)
=====
```

```
-----
Type : Originating
-----
```

```

LSP Name      : lsp1
LSP Type      : RegularLsp
LSP Index     : 1
From          : 10.20.1.2
Adm State     : Up
LSP Up Time   : 0d 00:00:38
Transitions   : 1
Retry Limit   : 0
Signaling     : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Disabled
CSPF          : Enabled
Metric        : N/A
Load Bal Wt   : N/A
Include Grps  :
None
Least Fill    : Disabled
BFD Template  : bfdTemp1
BFD Enable    : True
Revert Timer  : Disabled
Entropy Label : Inherited
Negotiated EL : Disabled
Auto BW       : Disabled
LdpOverRsvp  : Enabled
VprnAutoBind  : Enabled
IGP Shortcut  : Enabled
IGP LFA       : Disabled
BGPTransTun  : Enabled
Oper Metric   : 2000
Prop Adm Grp  : Disabled

LSP Tunnel ID : 1
TTM Tunnel Id : 1
To             : 10.20.1.5
Oper State     : Up
LSP Down Time : 0d 00:00:00
Path Changes   : 1
Retry Timer    : 20 sec
Resv. Style    : SE
Negotiated MTU : 1500
ClassType      : 0
Oper FR        : Disabled
ADSPEC         : Disabled
Use TE metric  : Disabled
ClassForwarding : Disabled
Exclude Grps   :
None

BFD Ping Intvl : 60
BFD Failure-action : Failover
Next Revert In : N/A
Oper Entropy Label : Enabled

BGP Shortcut    : Enabled
IGP Rel Metric  : Disabled
    
```

```
PCE Report      : Disabled+
PCE Compute     : Disabled
Path Profile    : None

Primary(a)     : path1
Bandwidth      : 0 Mbps

Binding SID    : 1234
PCE Control    : Disabled

Up Time       : 0d 00:00:40
```

```
# show router mpls lsp "N1.N2.3" detail
```

```
=====
MPLS LSPs (Originating) (Detail)
=====
```

```
-----
Type : Originating
-----
```

```
LSP Name      : N1.N2.3
LSP Type      : RegularLsp
From          : 192.168.0.1
Adm State     : Up
LSP Up Time   : 0d 00:01:07
Transitions   : 1
Retry Limit   : 0
Signaling     : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Disabled
CSPF          : Enabled
Metric        : 9
Load Balanc* : 100
Include Grps  :
None
Least Fill    : Disabled

LSP Tunnel ID : 132
To            : 192.168.0.2
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 2
Retry Timer   : 30 sec
Resv. Style   : SE
Negotiated MTU : 1500
ClassType     : 0
Oper FR       : Disabled
ADSPEC        : Disabled
Use TE metric : Disabled

Exclude Grps  :
None

Revert Timer  : Disabled
Auto BW       : Disabled
LdpOverRsvp  : Enabled
IGP Shortcut  : Enabled
IGP LFA       : Disabled
BGPTransTun  : Enabled
Oper Metric   : 9
Prop Adm Grp : Disabled

Next Revert In : N/A
VprnAutoBind  : Enabled
BGP Shortcut   : Enabled
IGP Rel Metric : Disabled

Primary(a)    : path.N1.N2.3
Bandwidth     : 0 Mbps
Up Time       : 0d 00:01:04

Secondary     : path.N1.N2.4
Bandwidth     : 0 Mbps
Down Time     : 0d 00:01:00
=====
```

```
# show router mpls lsp "LSP-PE-2-PE-4" detail
```

```
=====
MPLS LSPs (Originating) (Detail)
=====
```

```
-----
Type : Originating
-----
```

```
LSP Name      : LSP-PE-2-PE-4
LSP Type      : RegularLsp
LSP Index     : 4
From          : 192.0.2.104
Adm State     : Up
LSP Up Time   : 17d 02:16:53
Transitions   : 3
Retry Limit   : 0

LSP Tunnel ID : 4
TTM Tunnel Id : 4
To            : 192.0.2.102
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 3
Retry Timer   : 30 sec
```

```

Signaling      : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Disabled
CSPF         : Disabled
Metric        : N/A
Load Bal Wt   : N/A
Include Grps  :
None
Least Fill    : Disabled
BFD Template  : None
BFD Enable    : False

Resv. Style   : SE
Negotiated MTU : 8690
ClassType     : 0
Oper FR       : Disabled
ADSPEC        : Disabled

ClassForwarding: Disabled
Exclude Grps  :
None
BFD Ping Intvl : 60

Revert Timer: Disabled
EntropyLbl   : Inherited
Auto BW      : Enabled
Auto BW Min  : 0 Mbps
AB Up Thresh: 5 percent
AB Up BW     : 0 Mbps
AB Curr BW   : 0 Mbps
AB Adj Mul   : 288+
AB Adj Time  : 0 Mins
AB Adj Cnt   : 0
AB Last Adj  : n/a
ABMaxAvgRt   : 0 Mbps
AB Ovfl Lmt  : 0
ABOvflThres : 0 percent
AB UndflLmt  : 0
ABUndflThrs : 0 percent
ABMaxUndflBW: 0 Mbps
AB Adj Cause: none
Be Weight    : 100 percent
L1 Weight    : 100 percent
Nc Weight    : 100 percent
H1 Weight    : 100 percent
LdpOverRsvp : Enabled
VprnAutoBind: Enabled
IGP Shortcut : Enabled
IGP LFA      : Disabled
BGPTransTun : Enabled
Oper Metric  : 1
Prop Adm Grp: Disabled

Next Revert In : N/A
AB OpState     : Down
Auto BW Max    : 100000 Mbps
AB Down Thresh: 5 percent
AB Down BW     : 0 Mbps
AB Samp Intv   : 0 Mins
AB Samp Mul    : 1+
AB Samp Time   : 0 Mins
AB Samp Cnt    : 0
AB Next Adj    : 0 Mins
AB Lst AvgRt   : 0 Mbps
AB Ovfl Cnt    : 0
AB Ovfl BW     : 0 Mbps
AB Undrfl Cnt  : 0
AB Undrfl BW   : 0 Mbps

AB Monitor BW  : False
Af Weight      : 100 percent
L2 Weight      : 100 percent
Ef Weight      : 100 percent
H2 Weight      : 100 percent

BGP Shortcut   : Enabled
IGP Rel Metric : Disabled

Primary(a)    : completely-loose-path
Bandwidth     : 0 Mbps

Up Time       : 17d 02:16:53
    
```

The following output is an example of MPLS LSP count information.

### Output Example

```

# show router mpls lsp count

=====
MPLS LSP Count
=====
-----

```

	Originate	Transit	Terminate
Static LSPs	0	0	0
Dynamic LSPs	155	0	171
P2P LSPs	143	N/A	N/A
Detour LSPs	0	0	0
P2MP S2Ls	0	0	0
MPLS-TP LSPs	0	0	0

Mesh-P2P LSPs	0	N/A	N/A
One Hop-P2P LSPs	0	N/A	N/A
SR-TE LSPs	400	N/A	N/A
Mesh-P2P SR-TE LSPs	0	N/A	N/A
One Hop-P2P SR-TE LSPs	0	N/A	N/A
PCE Init SR-TE LSPs	0	N/A	N/A

The following output is an example of MPLS LSP transit information.

### Output Example

```
# show router mpls lsp transit
=====
MPLS LSPs (Transit)
=====
Legend : @ - Active Detour
=====
From          To           In I/F      Out I/F     State LSP Name
-----
10.30.1.5    10.20.1.22  3/2/1      3/2/7      Up    to_10_20_1_22_cspf::to*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_3:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_4:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_2:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_20:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_18:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_19:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_17:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_16:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_15:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_13:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_14:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_12:*
10.30.1.5    10.20.1.20  3/2/7      3/2/1      Up    to_10_20_1_20_cspf_10:*
...
10.30.1.3    10.20.1.22  aps-1      3/2/7      Up    to_10_20_1_22_cspf_6:*
10.30.1.3    10.20.1.22  aps-1      3/2/7      Up    to_10_20_1_22_cspf::to*
10.30.1.3    10.20.1.22  aps-1      3/2/7      Up    to_10_20_1_22_cspf_9:*
-----
LSPs : 520
=====
* indicates that the corresponding row element may have been truncated.
```

The following output is an example of MPLS LSP terminate information.

### Output Example

```
# show router mpls lsp terminate
=====
MPLS LSPs (Terminate)
=====
Legend : @ - Active Detour
=====
From          To           In I/F      Out I/F     State LSP Name
-----
10.30.1.5    10.30.1.4   3/2/1      n/a        Up    b4-1::b4-1
10.30.1.5    10.30.1.4   3/2/7      n/a        Up    gsr::gsr
10.20.1.22   10.30.1.4   3/2/7      n/a        Up    gsr2_t10
10.30.1.6    10.30.1.4   3/2/3:10  n/a        Up    1::2
10.30.1.6    10.30.1.4   3/2/3:3   n/a        Up    1::stby
10.30.1.6    10.30.1.4   3/2/3:10  n/a        Up    2::2
10.30.1.6    10.30.1.4   3/2/3:6   n/a        Up    2::stby
10.30.1.6    10.30.1.4   3/2/3:10  n/a        Up    3::2
```

```

10.30.1.6      10.30.1.4      3/2/3:6 n/a      Up      3::stby
...
10.30.1.3      10.30.1.4      aps-1   n/a      Up      to_10_30_1_4_cspf_20:*
10.30.1.3      10.30.1.4      aps-1   n/a      Up      to_10_30_1_4_cspf_4::*
-----
LSPs : 1603
=====
* indicates that the corresponding row element may have been truncated.
    
```

```

# show router mpls lsp terminate detail
=====
MPLS LSPs (Terminate) (Detail)
=====
-----
LSP b4-1::b4-1
-----
From           : 10.30.1.5           To           : 10.30.1.4
State          : Up
SetupPriority   : 7           Hold Priority : 0
Class Type     : 0
In Interface   : 3/2/1         In Label     : 131071
Previous Hop   : 10.100.30.20
-----
LSP gsr::gsr
-----
From           : 10.30.1.5           To           : 10.30.1.4
State          : Up
SetupPriority   : 7           Hold Priority : 0
Class Type     : 0
In Interface   : 3/2/7         In Label     : 128547
Previous Hop   : 192.168.60.2
-----
...
-----
From           : 10.30.1.3           To           : 10.30.1.4
State          : Up
SetupPriority   : 7           Hold Priority : 0
Class Type     : 0
In Interface   : aps-1         In Label     : 130409
Previous Hop   : 192.168.0.3
=====
    
```

**CBF Info** —To see CBF information of the LSP:

```

# show router mpls lsp "11-4" detail
=====
MPLS LSPs (Originating) (Detail)
=====
Legend :
+ - Inherited
-----
Type : Originating
-----
LSP Name       : 11-4
LSP Type       : RegularLsp           LSP Tunnel ID       : 83
LSP Index      : 83                   TTM Tunnel Id       : 83
From           : 10.20.1.2           To                   : 10.20.1.5
Adm State      : Up                   Oper State           : Up
LSP Up Time    : 0d 00:15:33         LSP Down Time       : 0d 00:00:00
Transitions    : 1                   Path Changes         : 1
Retry Limit    : 0                   Retry Timer          : 30 sec
    
```



```

Signaling      : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Disabled
Egress Stats  : Enabled
CSPF          : Enabled
Metric        : N/A
Load Bal Wt   : N/A
CBF FC        : None
CBF Fwding Plcy : policy1
CBF Fwding Set : 4
Include Grps  :
None
Least Fill    : Disabled
BFD Template  : None
BFD Enable    : False
Revert Timer  : Disabled
Entropy Label : Enabled+
Negotiated EL : Disabled
Auto BW       : Disabled
LdpOverRsvp  : Enabled
VprnAutoBind : Enabled
IGP Shortcut  : Enabled
IGP LFA       : Disabled
BGPTransTun  : Enabled
Oper Metric   : 2000
Prop Adm Grp  : Disabled
PCE Report    : Disabled+
PCE Compute   : Disabled
Path Profile  : None

Resv. Style   : SE
Negotiated MTU : 1500
ClassType     : 0
Oper FR       : Disabled
Egress Oper State : N/A
ADSPEC        : Disabled
Use TE metric : Disabled
ClassForwarding : Enabled
CBF Default LSP : No

Exclude Grps  :
None

BFD Ping Intvl : 60
BFD Failure-action : None
Next Revert In : N/A
Oper Entropy Label : Enabled

BGP Shortcut   : Enabled
IGP Rel Metric : Disabled

Binding SID    : 1234
PCE Control    : Disabled

Primary(a)     : 1
Bandwidth      : 0 Mbps

Up Time        : 0d 00:15:33
    
```

The following output is an example of MPLS LSP path and path detail information and [Table 274: MPLS LSP path output fields](#) describe the MPLS LSP path output fields.

### Output Example

```

# show router mpls lsp path
=====
MPLS LSP Path (Detail)
=====
Legend :
  @ - Detour Available          # - Detour In Use
  b - Bandwidth Protected      n - Node Protected
  s - Soft Preemption
  S - Strict                    L - loose
=====
ExplicitHops:
  10.20.1.3(L)      -> 10.20.1.4(S)
Actual Hops :
  10.10.1.1(10.20.1.1)      Record Label : N/A
  -> 10.10.1.2(10.20.1.2)   Record Label : 131071
  -> 10.10.5.3(10.20.1.3)   Record Label : 131071
  -> 10.10.7.4(10.20.1.4)   Record Label : 131071
  -> 10.10.8.5(10.20.1.5)   Record Label : 131071
ComputedHops:
  10.10.1.1(S)      -> 10.10.1.2(S)      -> 10.10.5.3(S)
  -> 10.20.1.4(S)      -> 10.20.1.5(L)
    
```

```

=====
# show router mpls lsp "lsp_1" path "500" detail
=====
MPLS LSP lsp_1 Path 500 (Detail)
=====
Legend :
  @ - Detour Available          # - Detour In Use
  b - Bandwidth Protected      n - Node Protected
  s - Soft Preemption
  S - Strict                    L - Loose
  A - ABR
=====
-----
LSP lsp_1 Path 500
-----
LSP Name       : lsp_1
Path LSP ID    : 38400
From           : 10.10.1.1          To           : 10.10.1.2
Admin State    : Up                Oper State   : Down
Path Name      : 500               Path Type    : Primary
Path Admin     : Up                Path Oper    : Down
Out Interface  : n/a               Out Label    : n/a
Path Up Time   : 0d 00:00:00       Path Down Time : 0d 00:00:43
Retry Limit    : 0                 Retry Timer   : 30 sec
Retry Attempt  : 2                 Next Retry In : 19 sec
BFDD Template  : None              BFDD Ping Interval : 60
BFDD Enable    : FALSE             BFDD failure-action : down

Adspec        : Disabled           Oper Adspec   : N/A
CSPF          : Disabled           Oper CSPF     : N/A
Least Fill    : Disabled           Oper LeastFill : N/A
FRR           : Disabled           Oper FRR      : N/A
Prop Adm Grp  : Disabled           Oper Prop AG  : N/A
Inter-area    : N/A

Neg MTU       : 0                  Oper MTU      : N/A
Bandwidth     : No Reservation     Oper Bw       : N/A
Hop Limit     : 255                Oper HopLimit : N/A
Record Route  : Record             Oper Rec Route : N/A
Record Label  : No Record          Oper Rec Label : N/A
Setup Priority : 7                  Oper Setup Priority : N/A
Hold Priority  : 7                  Oper Hold Priority : N/A
Class Type    : 7                  Oper CT       : N/A
Backup CT     : 5
MainCT Retry  : 500
  Rem        :
MainCT Retry  : 500
  Limit     :
Include Grps  :                    Oper InclGrps :
None         :                    N/A
Exclude Grps :                    Oper ExclGrps :
None         :                    N/A

Adaptive      : Enabled            Oper Metric    : N/A
Preference    : n/a
Path Trans    : 0                  CSPF Queries   : 0
Failure Code  : noResourcesAvailable
Failure Node  : 10.1.255.255
Explicit Hops :
  No Hops Specified
Actual Hops   :
  No Hops Specified
    
```

```

Resignal Eligible: False
Last Resignal      : n/a                CSPF Metric          : N/A
=====
# show router mpls lsp "1" path detail
=====
MPLS LSP 1 Path (Detail)
=====
Legend :
  @ - Detour Available          # - Detour In Use
  b - Bandwidth Protected      n - Node Protected
  s - Soft Preemption
  S - Strict                    L - Loose
  A - ABR
=====
-----
LSP 1 Path 1
-----
LSP Name      : 1                      Path LSP ID   : 30208
From          : 10.20.1.1              To           : 10.20.1.6
Adm State    : Up                      Oper State    : Up
Path Name    : 1                      Path Type     : Primary
Path Admin   : Up                      Path Oper     : Up
OutInterface: 1/1/1                    Out Label    : 131071
Path Up Time: 0d 00:00:05              Path Dn Time: 0d 00:00:00
Retry Limit  : 0                       Retry Timer   : 30 sec
RetryAttempt: 0                       NextRetryIn  : 0 sec

Adspec       : Disabled                Oper Adspec   : Disabled
CSPF         : Enabled                 Oper CSPF     : Enabled
Least Fill   : Disabled                Oper LeastF*  : Disabled
FRR          : Enabled                 Oper FRR      : Enabled
FRR NodePro* : Enabled                Oper FRR NP   : Enabled
FR Hop Limit: 16                      Oper FRHopL*  : 16
FR Prop Adm* : Disabled                Oper FRProp*  : Disabled
Prop Adm Grp: Disabled                Oper PropAG   : Disabled
Inter-area   : False

Neg MTU      : 1496                    Oper MTU      : 1496
Bandwidth    : No Reservation          Oper Bw       : 0 Mbps
Hop Limit    : 255                     Oper HopLim*  : 255
Record Route: Record                  Oper RecRou*  : Record
Record Label: Record                  Oper RecLab*  : Record
SetupPrio*  : 7                        Oper SetupP*  : 7
Hold Prio*  : 0                         Oper HoldPr*  : 0
Class Type   : 0                        Oper CT       : 0
Backup CT    : None
MainCT Retry: n/a
  Rem       :
MainCT Retry: 0
  Limit    :
Include Grps:
None      Oper InclGr*:
None      None
Exclude Grps:
None      Oper ExclGr*:
None      None

Adaptive     : Enabled                 Oper Metric   : 3000
Preference   : n/a
Path Trans   : 1                      CSPF Queries  : 1
Failure Code: noError                  Failure Node  : n/a
ExplicitHops:
  No Hops Specified
Actual Hops  :
    
```

```

    10.20.1.1, If Index : 2 @ n           Record Label      : N/A
-> 10.20.1.2, If Index : 2 @ n           Record Label      : 131071
-> 10.20.1.4, If Index : 2               Record Label      : 131071
-> 10.20.1.6, If Index : 2               Record Label      : 131071
ComputedHops:
    10.20.1.1, If Index : 2(S)
-> 10.20.1.2, If Index : 2(S)
-> 10.20.1.4, If Index : 2(S)
-> 10.20.1.6, If Index : 2(S)
ResigEligib*: False
LastResignal: n/a                               CSPF Metric : 3000
=====
* indicates that the corresponding row element may have been truncated.
    
```

```
# show router mpls lsp "lsp_1" path "500" detail
```

```
=====
MPLS LSP lsp_1 Path 500 (Detail)
=====
```

Legend :

```

@ - Detour Available           # - Detour In Use
b - Bandwidth Protected       n - Node Protected
s - Soft Preemption
S - Strict                     L - Loose
A - ABR
    
```

```
-----
LSP lsp_1 Path 500
-----
```

```

LSP Name       : lsp_1
Path LSP ID    : 38400
From           : 10.10.1.1           To           : 10.10.1.2
Admin State    : Up                 Oper State    : Down
Path Name      : 500                 Path Type     : Primary
Path Admin     : Up                 Path Oper     : Down
Out Interface  : n/a                 Out Label    : n/a
Path Up Time   : 0d 00:00:00         Path Down Time : 0d 00:00:43
Retry Limit    : 0                   Retry Timer   : 30 sec
Retry Attempt  : 2                   Next Retry In : 19 sec
BFD Template   : None                BFD Ping Interval : 60
BFD Enable     : FALSE

Adspec         : Disabled             Oper Adspec   : N/A
CSPF           : Disabled             Oper CSPF     : N/A
Least Fill     : Disabled             Oper LeastFill : N/A
FRR            : Disabled             Oper FRR      : N/A
Prop Adm Grp   : Disabled             Oper Prop AG  : N/A
Inter-area     : N/A

Neg MTU        : 0                   Oper MTU      : N/A
Bandwidth      : No Reservation       Oper Bw       : N/A
Hop Limit      : 255                 Oper HopLimit  : N/A
Record Route   : Record               Oper Rec Route : N/A
Record Label   : No Record            Oper Rec Label : N/A
Setup Priority  : 7                   Oper Setup Priority : N/A
Hold Priority   : 7                   Oper Hold Priority : N/A
Class Type     : 7                   Oper CT       : N/A
Backup CT      : 5
MainCT Retry   : 500
Rem            :
MainCT Retry   : 500
Limit         :
    
```

```

Include Grps      :                               Oper InclGrps      :
None              :                               N/A
Exclude Grps     :                               Oper ExclGrps     :
None              :                               N/A

Adaptive         : Enabled                       Oper Metric       : N/A
Preference       : n/a
Path Trans       : 0                           CSPF Queries      : 0
Failure Code     : noResourcesAvailable
Failure Node     : 10.1.255.255
Explicit Hops    :
    No Hops Specified
Actual Hops      :
    No Hops Specified
Resignal Eligible: False
Last Resignal    : n/a                         CSPF Metric       : N/A
=====
    
```

```
# show router mpls lsp path detail
```

```
=====
MPLS LSP Path (Detail)
=====
```

Legend :

```

@ - Detour Available           # - Detour In Use
b - Bandwidth Protected       n - Node Protected
s - Soft Preemption
S - Strict                     L - Loose
A - ABR                        + - Inherited
    
```

```
-----
LSP C_F_1
Path C_F_1
-----
```

```

LSP Name      : C_F_1
From          : 10.20.1.3
To            : 10.20.1.6
Admin State   : Up                Oper State     : Up
Path Name     : C_F_1
Path LSP ID   : 49666             Path Type     : Primary
Path Admin    : Up                Path Oper     : Up
Out Interface : 1/1/1              Out Label    : 524248
Path Up Time  : 0d 00:07:18       Path Down Time : 0d 00:00:00
Retry Limit   : 0                 Retry Timer   : 20 sec
Retry Attempt : 0                 Next Retry In : 0 sec
    
```

BFD Configuration and State

```

Template      : None                Ping Interval  : 60
Enable        : False               State          : notApplicable
WaitForUpTimer : 4 sec              OperWaitForUpTimer: N/A
WaitForUpTmLeft : 0 sec
    
```

```

Adspec        : Enabled              Oper Adspec    : Enabled
PathCompMethod : pce                 OperPathCompMethod: pce
MetricType    : igp                  Oper MetricType : igp
Least Fill    : Disabled              Oper LeastFill  : Disabled
FRR           : Disabled              Oper FRR        : Disabled
Propagate Adm Grp: Disabled           Oper Prop Adm Grp: Disabled
Inter-area    : N/A
    
```

```

PCE Report    : Enabled              Oper PCE Report : Enabled
PCE Control   : Enabled              Oper PCE Control : Enabled
PCE Update ID : 0
    
```

```

Neg MTU      : 1500          Oper MTU      : 1500
Bandwidth    : No Reservation Oper Bandwidth : 0 Mbps
Hop Limit    : 255          Oper HopLimit  : 255
Record Route : Record      Oper Record Route : Record
Record Label : Record      Oper Record Label : Record
Setup Priority : 7          Oper SetupPriority: 7
Hold Priority : 0           Oper HoldPriority : 0
Class Type   : 0           Oper CT         : 0
Backup CT    : None
MainCT Retry : n/a
  Rem        :
MainCT Retry : 0
  Limit      :
Include Groups :           Oper IncludeGroups:
None          :           None
Exclude Groups :           Oper ExcludeGroups:
None          :           None

Adaptive     : Enabled      Oper Metric     : 100
Preference   : n/a
Path Trans   : 3           CSPF Queries    : 0
Failure Code : noError
Failure Node : n/a
Explicit Hops :
  No Hops Specified
Actual Hops  :
  10.10.2.3(10.20.1.3)      Record Label    : N/A
  -> 10.10.2.1(10.20.1.1)   Record Label    : 524248
  -> 10.10.1.2(10.20.1.2)   Record Label    : 524246
  -> 10.10.4.4(10.20.1.4)   Record Label    : 524246
  -> 10.10.9.6(10.20.1.6)   Record Label    : 524248
Computed Hops :
  10.10.2.1(S)
  -> 10.10.1.2(S)
  -> 10.10.4.4(S)
  -> 10.10.9.6(S)
Resignal Eligible: False
Last Resignal : n/a          CSPF Metric     : 100
=====
    
```

```

# show router mpls lsp path mbb
=====
MPLS LSP Paths
=====
-----
LSP to_10_30_1_1_cspf Path to_10_30_1_1
-----
LastResignal: n/a          CSPF Metric : 1001
Last MBB      :
  MBB Type    : TimerBasedResignal      MBB State   : Fail
  Ended At    : 03/04/2010 09:23:58    Old Metric  : 0
-----
LSP to_10_30_1_2_cspf Path to_10_30_1_2
-----
LastResignal: 03/04/2010 09:23:58      CSPF Metric : 65535
-----
LSP to_10_30_1_3_cspf Path to_10_30_1_3
-----
LastResignal: n/a          CSPF Metric : 1001
Last MBB      :
  MBB Type    : TimerBasedResignal      MBB State   : Fail
  Ended At    : 03/04/2010 09:23:58    Old Metric  : 0
-----
    
```

```

LSP to_10_30_1_4_cspf Path to_10_30_1_4
-----
LastResignal: n/a                               CSPF Metric : 0
-----
LSP to_10_30_1_5_cspf Path to_10_30_1_5
...
-----
LastResignal: n/a                               CSPF Metric : 0
-----
LSP to_10_100_1_1_cspf_19 Path to_10_100_1_1
-----
LastResignal: n/a                               CSPF Metric : 0
-----
LSP to_10_100_1_1_cspf_20 Path to_10_100_1_1
-----
LastResignal: n/a                               CSPF Metric : 0
=====
    
```

```
# show router mpls lsp path detail tof1
```

```

=====
MPLS LSP tof1 Path (Detail)
=====
Legend :
  @ - Detour Available          # - Detour In Use
  b - Bandwidth Protected      n - Node Protected
  s - Soft Preemption
-----
LSP tof1 Path 1
-----
LSP Name      : tof1                               Path LSP ID : 4706
From          : 10.20.1.2                           To          : 10.20.1.4
Adm State    : Up                                  Oper State  : Up
Path Name    : 1                                    Path Type   : Primary
Path Admin   : Up                                  Path Oper   : Up
OutInterface: 1/1/2:5                               Out Label   : 124809
Path Up Time : 0d 00:01:16                          Path Dn Time: 0d 00:00:00
Retry Limit  : 0                                    Retry Timer : 20 sec
RetryAttempt: 0                                    NextRetryIn: 0 sec
SetupPriori*: 4                                    Hold Priori*: 4
Bandwidth    : 1 Mbps                               Oper Bw     : 1 Mbps
Hop Limit    : 255                                  Class Type  : 5
Record Route: Record                               Record Label: Record
Oper MTU     : 1492                                  Neg MTU     : 1492
Adaptive     : Enabled                              Oper Metric : 1000
Include Grps:                                     Exclude Grps:
None                                                None
Path Trans   : 2                                    CSPF Queries: 1
Failure Code: noError                              Failure Node: n/a
ExplicitHops:
  10.20.1.4
Actual Hops :
  10.10.105.2(10.20.1.2) @ s                       Record Label : N/A
  -> 10.10.105.4(10.20.1.4)                         Record Label : 124809
ComputedHops:
  10.10.105.2   -> 10.10.105.4
ResigEligib*: False
LastResignal: n/a                                  CSPF Metric : 1000
In Prog MBB :
  MBB Type    : SoftPreemption                       NextRetryIn : 19 sec
  Started At  : 12/08/2008 22:21:11                  RetryAttempt: 0
  FailureCode: noError                               Failure Node: n/a
=====
    
```

\*A:Dut-B#

```
# show router mpls lsp "From Reno to Atlanta RSVP-TE" path detail
```

```
=====
MPLS LSP From Reno to Atlanta RSVP-TE Path (Detail)
=====
```

Legend :

```
@ - Detour Available          # - Detour In Use
b - Bandwidth Protected      n - Node Protected
s - Soft Preemption
S - Strict                    L - Loose
A - ABR
```

```
-----
LSP From Reno to Atlanta RSVP-TE Path primary_empty
-----
```

```
LSP Name       : From Reno to Atlanta RSVP-TE
Path LSP ID    : 14382
From           : 192.168.48.194      To           : 192.168.48.224
Admin State    : Up                  Oper State   : Up
Path Name      : primary_empty      Path Type    : Primary
Path Admin     : Up                  Path Oper    : Up
Out Interface  : 1/1/1              Out Label    : 262094
Path Up Time   : 0d 00:00:22        Path Down Time : 0d 00:00:00
Retry Limit    : 0                   Retry Timer   : 30 sec
Retry Attempt  : 0                   Next Retry In : 0 sec
BFDD Template  : None               BFDD Ping Interval : 60
BFDD Enable    : False
Adspec         : Disabled            Oper Adspec   : Disabled
CSPF           : Enabled             Oper CSPF     : Enabled
Least Fill     : Disabled            Oper LeastFill : Disabled
FRR            : Enabled             Oper FRR      : Enabled
FRR NodeProtect : Disabled           Oper FRR NP   : Disabled
FR Hop Limit   : 16                  Oper FRHopLimit : 16
FR Prop Admin Gr* : Disabled          Oper FRPropAdmGrp : Disabled
Propagate Adm Grp : Disabled          Oper Prop Adm Grp : Disabled
Inter-area     : False
PCE Updt ID    : 0
PCE Report     : Enabled             Oper PCE Report : Enabled
PCE Control    : Enabled             Oper PCE Control : Enabled
PCE Compute    : Enabled
Neg MTU        : 1496                Oper MTU      : 1496
Bandwidth      : 10 Mbps             Oper Bandwidth : 10 Mbps
Hop Limit      : 255                  Oper HopLimit  : 255
Record Route   : Record              Oper Record Route : Record
Record Label   : Record              Oper Record Label : Record
Setup Priority  : 7                   Oper Setup Priority : 7
Hold Priority   : 0                   Oper Hold Priority : 0
Class Type     : 0                   Oper CT        : 0
Backup CT      : None
MainCT Retry   : n/a
Rem            :
MainCT Retry   : 0
Limit         :
Include Groups :                      Oper Include Groups :
None          :                      None
Exclude Groups :                      Oper Exclude Groups :
top           :                      top
Adaptive      : Enabled              Oper Metric      : 40
Preference    : n/a
Path Trans    : 7                   CSPF Queries    : 7172
Failure Code   : noError
Failure Node   : n/a
```



```

Explicit Hops      :
  No Hops Specified
Actual Hops       :
  10.202.5.194 (192.168.48.194) @           Record Label      : N/A
-> 10.202.5.199 (192.168.48.199) @           Record Label      : 262094
-> 192.168.48.185 (192.168.48.185)           Record Label      : 262111
-> 10.0.5.185                                     Record Label      : 262111
-> 192.168.48.223 (192.168.48.223)          Record Label      : 262121
-> 10.0.7.223                                     Record Label      : 262121
-> 192.168.48.224 (192.168.48.224)          Record Label      : 262116
-> 10.101.4.224                                   Record Label      : 262116
Computed Hops     :
  10.202.5.199(S)
-> 10.0.5.185(S)
-> 10.0.7.223(S)
-> 10.101.4.224(S)
Resignal Eligible: False
Last Resignal    : n/a                      CSPF Metric       : 40
-----
LSP From Reno to Atlanta RSVP-TE Path secondary_empty
-----
LSP Name          : From Reno to Atlanta RSVP-TE
Path LSP ID       : 14384
From              : 192.168.48.194          To                : 192.168.48.224
Admin State       : Up                    Oper State        : Up
Path Name         : secondary_empty        Path Type         : Standby
Path Admin        : Up                    Path Oper         : Up
Out Interface     : 1/
    
```

The following output is an example of MPLS LSP path detailed DNS information, and [Table 274: MPLS LSP path output fields](#) describes the MPLS LSP path DNS output fields.

### Output Example

```

*A:Dut-C# show router mpls lsp "C_F_1" path detail dns
=====
MPLS LSP C_F_1 Path (Detail)
=====
Legend :
  @ - Detour Available          # - Detour In Use
  b - Bandwidth Protected      n - Node Protected
  s - Soft Preemption
  S - Strict                    L - Loose
  A - ABR                      + - Inherited
=====
-----
LSP C_F_1
Path C_F_1
-----
LSP Name      : C_F_1
From          : 10.20.1.3
To            : 10.20.1.6
Admin State   : Up                    Oper State    : Up
Path Name     : C_F_1
Path LSP ID   : 1536                  Path Type     : Primary
Path Admin    : Up                    Path Oper     : Up
Out Interface : 1/1/1                 Out Label    : 524281
Path Up Time  : 0d 00:01:39           Path Down Time : 0d 00:00:00
Retry Limit   : 0                     Retry Timer   : 600 sec
Retry Attempt : 0                     Next Retry In : 0 sec
-----
BFD Configuration and State
    
```

```

Template      : None
Enable       : False
WaitForUpTimer : 4 sec
WaitForUpTmLeft : 0 sec

Adspec       : Enabled
PathCompMethod : local-cspf
MetricType   : te
Least Fill   : Disabled
FRR          : Enabled
FRR NodeProtect : Enabled
FR Hop Limit : 16
FR Prop Admin Gr* : Disabled
Propagate Adm Grp : Disabled
Inter-area   : False

PCE Report   : Disabled+
PCE Control  : Disabled
PCE Update ID : 0

Neg MTU      : 1496
Bandwidth    : No Reservation
Hop Limit    : 255
Record Route : Record
Record Label : Record
Setup Priority : 7
Hold Priority : 0
Class Type   : 0
Backup CT    : None
MainCT Retry : n/a
  Rem       :
MainCT Retry : 0
  Limit     :
Include Groups :
None
Exclude Groups :
None

Adaptive     : Enabled
Preference   : n/a
Path Trans   : 1
Degraded     : False
Failure Code : noError
Failure Node : n/a
Explicit Hops :
  10.20.1.1(L)
    Dut-A.nokia.com
  -> 10.20.1.2(L)
    Dut-B.nokia.com
  -> 10.20.1.4(L)
    Dut-D.nokia.com
  -> 10.20.1.5(L)
    Dut-E.nokia.com
  -> 10.20.1.6(L)
    Dut-F.nokia.com

Actual Hops   :
  10.10.2.3(10.20.1.3) @ n
  toA.Dut-C.nokia.com
  (toC.system.nokia.com)
  -> 10.10.2.1(10.20.1.1) @ n
  10.10.2.1
  (Dut-A.nokia.com)
  -> 10.10.1.2(10.20.1.2) @ n
  toA.Dut-B.nokia.com

Ping Interval : 60
State         : notApplicable
OperWaitForUpTimer: N/A

Oper Adspec   : Enabled
OperPathCompMethod: local-cspf
Oper MetricType : te
Oper LeastFill : Disabled
Oper FRR       : Enabled
Oper FRR NP    : Enabled
Oper FRHopLimit : 16
Oper FRPropAdmGrp : Disabled
Oper Prop Adm Grp : Disabled

Oper PCE Report : Disabled
Oper PCE Control : Disabled

Oper MTU       : 1496
Oper Bandwidth : 0 Mbps
Oper HopLimit  : 255
Oper Record Route : Record
Oper Record Label : Record
Oper SetupPriority: 7
Oper HoldPriority : 0
Oper CT        : 0

Oper IncludeGroups:
  None
Oper ExcludeGroups:
  None

Oper Metric     : 16777215
CSPF Queries    : 1

Record Label    : N/A
Record Label    : 524281
Record Label    : 524281
  
```

```

(Dut-B.nokia.com)
-> 10.10.4.4(10.20.1.4) @ n          Record Label      : 524281
toB.Dut-D.nokia.com
(Dut-D.nokia.com)
-> 10.10.6.5(10.20.1.5) @          Record Label      : 524281
toD.Dut-E.nokia.com
(Dut-E.nokia.com)
-> 10.10.10.6(10.20.1.6)          Record Label      : 524281
toE.Dut-F.nokia.com
(Dut-F.nokia.com)
Computed Hops      :
  10.10.2.3(S)
-> 10.10.2.1(S)
-> 10.10.1.2(S)
-> 10.10.4.4(S)
-> 10.10.6.5(S)
-> 10.10.10.6(S)
Resignal Eligible: False
Last Resignal    : n/a                CSPF Metric       : 2003
=====
* indicates that the corresponding row element may have been truncated.
    
```

Table 272: MPLS LSP Output Fields

Label	Description
LSP Name	The name of the LSP used in the path.
To	The IP address of the egress router for the LSP.
Adm State	Down — The path is administratively disabled. Up — The path is administratively enabled.
Oper State	Down — The path is operationally down. Up — The path is operationally up.
LSPs	The total number of LSPs configured.
From	The IP address of the ingress router for the LSP.
LSP Up Time	The length of time the LSP has been operational.
Transitions	The number of transitions that have occurred for the LSP.
Retry Limit	The number of attempts that the software should make to re-establish the LSP after it has failed.
Signaling	Specifies the signaling style.
Hop Limit	The maximum number of hops that an LSP can traverse, including the ingress and egress routers.
Fast Reroute/Fast Fail Config	enabled — Fast reroute is enabled. In the event of a failure, traffic is immediately rerouted on the pre-computed detour LSP, thus minimizing packet loss. disabled — There is no detour LSP from each node on the primary path.

Label	Description
PathCompMethod	pce — PCE path computation method is configured. local-cspf — Local CSPF path computation method is configured.
Adspec/ ADSPEC	enabled — The LSP includes advertising data (ADSPEC) objects in RSVP messages. disabled — The LSP does not include advertising data (ADSPEC) objects in RSVP messages.
FallbkPathComp	none — No fallback method is configured. local-cspf — Local CSPF fallback is configured.
Primary	The preferred path for the LSP.
Secondary	The alternate path that the LSP uses if the primary path is not available.
Bandwidth	The amount of bandwidth in Mb/s reserved for the LSP path.
LSP Up Time	The total time in increments that the LSP path has been operational.
LSP Tunnel ID	The value which identifies the label switched path that is signaled for this entry.
To	The IP address of the egress router for the LSP.
LSP Down Time	The total time in increments that the LSP path has not been operational.
Path Changes	The number of path changes this LSP has had. For every path change (path down, path up, path change), a corresponding syslog/trap (if enabled) is generated.
Retry Timer	The time in s, for LSP re-establishment attempts after an LSP failure.
Resv Style	se — Specifies a shared reservation environment with a limited reservation scope. This reservation style creates a single reservation over a link that is shared by an explicit list of senders. ff — Specifies a shared reservation environment with an explicit reservation scope. Specifies an explicit list of senders and a distinct reservation for each of them.
Negotiated MTU	The size of the maximum transmission unit (MTU) that is negotiated during establishment of the LSP.
FR Hop Limit	The total number of hops a detour LSP can take before merging back onto the main LSP path.
LastResignal Attempt	Displays the system up time when the last attempt to resignal this LSP was made.
MBB Type	Displays an enumerated integer that specifies the type of make-before-break (MBB). If none displays then there is no MBB in progress or no last MBB.
MBB State	Displays the state of the most recent invocation of the make-before-break functionality.
End at	Displays the system up time when the last MBB ended.

Label	Description
Old Metric	Displays the cost of the traffic engineered path for the LSP path prior to MBB.
NextRetryIn	Displays the amount of time (in s) remaining, before the next attempt is made to retry the in-progress MBB.
RetryAttempt	Displays the number attempts for the MBB is in progress.
Failure Code	Displays the reason code for in-progress MBB failure. A value of <b>none</b> indicates that no failure has occurred. See "LSP Failure Codes" in the <i>7450 ESS, 7750 SR, 7950 XRS, and VSR MPLS Guide</i> for more information.
Failure Node	Displays the IP address of the node in the LSP path at which the in-progress MBB failed. When no failure has occurred, this value is <b>none</b> .
Static LSPs	Displays the number of static LSPs.
Dynamic LSPs	Displays the number of dynamic RSVP LSPs.
P2P LSPs	Displays the number of P2P RSVP LSPs.
Detour LSPs	Displays the number of detour RSVP LSPs.
P2MP S2Ls	Displays the number of P2MP RSVP S2Ls.
MPLS-TP LSPs	Displays the number of MPLS-TP LSPs.
Mesh-P2P LSPs	Displays the number of Mesh-P2P RSVP LSPs.
One Hop-P2P LSPs	Displays the number of one hop P2P RSVP LSPs.
SR-TE LSPs	Displays the number of SR-TE LSPs.
Mesh-P2P SR-TE LSPs	Displays the number of Mesh-P2P SR-TE LSPs.
One Hop-P2P SR-TE LSPs	Displays the number of one hop SR-TE LSPs.
PCE Init SR-TE LSPs	Displays the number of PCE initiated SR-TE LSPs.

Table 273: LSP Detail Output Fields

Label	Description
Auto BW	Enabled — Auto-bandwidth adjustment is configured on this LSP.
AB OpState	Up – Auto-bandwidth is operationally enabled on this LSP Down – Auto-bandwidth is operationally disabled on this LSP

Label	Description
Auto BW Min	The minimum bandwidth of the LSP that auto-bandwidth can request (in Mb/s).
Auto BW Max	The maximum bandwidth of the LSP that auto-bandwidth can request (in Mb/s).
AB Up Thresh	The percent threshold for increasing LSP bandwidth.
AB Down Thresh	The percent threshold for decreasing LSP bandwidth.
AB Up BW	The absolute bandwidth threshold for increasing LSP bandwidth (in Mb/s).
AB Down BW	The absolute bandwidth threshold for decreasing LSP bandwidth (in Mb/s).
AB Coll Intv	The auto-bandwidth collection interval.
AB Adj Mul	The adjust-multiplier for this LSP (may be configured or inherited).
AB Samp Mul	The sample-multiplier for this LSP (may be configured or inherited).
AB Adj Time	The adjust-multiplier times the collection-interval (in minutes).
AB Sample Time	The sample-multiplier times the collection-interval (in minutes).
AB Adj Cnt	The adjust count (number of whole collection intervals since the start of the current adjust interval).
AB Samp Cnt	The sample count (number of whole collection intervals since the start of the current sample interval).
AB Last Adj	The system time of the last auto-bandwidth adjustment.
AB Next Adj	The approximate remaining time in the current adjust interval (adjust-multiplier – adjust count) times the collection interval (in min). This overstates the actual remaining time because the elapsed time in the current collection interval is not accounted for.
AB Adj Cause	The cause of the last auto-bandwidth adjustment: <ul style="list-style-type: none"> <li>• none – no adjustment has occurred</li> <li>• manual</li> <li>• adj-count</li> <li>• overflow</li> </ul>
AB Max AvgR*	The maximum average data rate in any sample interval of the current adjust interval.
AB Lst AvgR*	The average data rate measured in the sample interval that ended most recently.

Label	Description
AB Ovfl Lmt	The configured value of the auto-bandwidth overflow-limit.
AB Ovfl Cnt	The number of overflow samples since the last reset.
ABOvflThres	The percent threshold for declaring an overflow sample.
AB Ovfl BW	The absolute bandwidth threshold for declaring an overflow sample (in Mb/s).
AB Monitor BW	True – monitor bandwidth is enabled on the LSP. False – monitor bandwidth is not enabled on the LSP.
BFD Enable	The operational state of BFD on the LSP.
BFD failure-action	The failure action that is configured for the BFD LSP.
Lsp Self Ping	Enabled – LSP Self-ping on this RSVP LSP or RSVP LSPs (one-hop-p2p or mesh-p2p) using this LSP template is enabled. Disabled – LSP Self-ping on this RSVP LSP or RSVP LSPs (one-hop-p2p or mesh-p2p) using this LSP template is disabled. Inherited – inherits the value configured under <b>config&gt;router&gt;mpls&gt;lsp-self-ping&gt;rsvp-te</b>
OperPathComp Method	Displays the path computation method in use (pce, local, or none).
Self ping timeouts	Specifies the count of the number of LSP Self-ping timeouts.

Table 274: MPLS LSP path output fields

Label	Description
LSP Name	Specifies the name of the LSP used in the path
From	Specifies the IP address of the ingress router for the LSP
To	Specifies the IP address of the egress router for the LSP
Admin State	Down — The path is administratively disabled Up — The path is administratively enabled
Oper State	Down — The path is operationally down Up — The path is operationally up
Path Name	Specifies the path name
Path LSP ID	Specifies the path LSP ID
Path Type	Specifies the path type

Label	Description
Path Admin	Specifies the path administrative state
Path Oper	Specifies the operational path state
Out Interface	Specifies the port of the out interface
Out Label	Specifies the out label value
Path Up Time	Specifies the duration of path up
Path Down Time	Specifies the duration of path down
Retry Limit	Specifies the retry limit value
Retry Timer	Specifies the retry timer value
Retry Attempt	Specifies the number of retries attempted
Next Retry In	Specifies the next retry in value
BFD Configuration and State	
Template	Specifies the BFD template
Ping Interval	Specifies the ping interval value
Enable	Specifies the BFD enable status
State	Specifies the BFD state
WaitForUpTimer	Specifies the wait for up timer value
OperWaitForUpTimer	Specifies the operational wait for up timer value
WaitForUpTmLeft	Specifies the wait for up time left value
Adspec	Specifies the Adspec status
Oper Adspec	Specifies the operational Adspec status
PathCompMethod	Specifies the path computation method
OperPathCompMethod	Specifies the operational path computation method
MetricType	Specifies the metric type value
Oper MetricType	Specifies the operational metric type value
Least Fill	Specifies the least fill status
Oper LeastFill	Specifies the operational least fill status



Label	Description
FRR	Specifies the FRR status
Oper FRR	Specifies the operational FRR status
FRR NodeProtect	Specifies the FRR node protect status
Oper FRR NP	Specifies the operational FRR node protect status
FR Hop Limit	Specifies the FR hop limit value
Oper FRHopLimit	Specifies the operational FR hop limit value
FR Prop Admin Gr*	Specifies the FR prop administrative group status
Oper FRPropAdm Grp	Specifies the operational FR prop administrative group status
Propagate Adm Grp	Specifies the prop administrative group status
Oper PropAdmGrp	Specifies the operational prop administrative group status
Inter-area	Specifies the inter area status
PCE Report	Specifies the operational PCE report status
Oper PCE Report	Specifies the
PCE Control	Specifies the PCE control status
Oper PCE Control	Specifies the operational PCE control status
PCE Update ID	Specifies the PCE update ID
Neg MTU	Specifies the negotiated MTU value
Oper MTU	Specifies the operational MTU value
Bandwidth	Specifies the bandwidth type
Oper Bandwidth	Specifies the operational bandwidth
Hop Limit	Specifies the hop limit
Oper HopLimit	Specifies the operational hop limit
Record Route	Specifies the record route value
Oper Record Route	Specifies the operational record route value
Setup Priority	Specifies the setup priority value

Label	Description
Oper SetupPriority	Specifies the operational setup priority value
Hold Priority	Specifies the hold priority value
Oper HoldPriority	Specifies the operational hold priority value
Class Type	Specifies the class type
Oper CT	Specifies the operational class type
Backup CT	Specifies the backup class type
MainCT Retry Rem	Specifies the main class type rem value
MainCT Retry Limit	Specifies the main class type retry limit
Include Groups	Specifies the include groups
Oper Include Groups	Specifies the operational include groups
Exclude Groups	Specifies the exclude groups
Oper Exclude Groups	Specifies the operational exclude groups
Adaptive	Specifies the adaptive status
Oper Metric	Specifies the operational metric
Preference	Specifies the preference
Path Trans	Specifies the path trans value
CSPF Queries	Specifies the number of CSPF queries
Degraded	Specifies the degraded status
Failure Code	Specifies the failure code
Failure Node	Specifies the failure node
Explicit Hops	Specifies the explicit hops
Actual Hops	Specifies the actual hops
Record Label	Specifies the record label
Computed Hops	Specifies the computed hops
Resignal Eligible	Specifies the resignal eligibility status
Last Resignal	Specifies the last resignal

Label	Description
CSPF Metric	Specifies the CSPF metric value

## lsp

### Syntax

**lsp** *lsp-name*

### Context

[\[Tree\]](#) (clear>router>mpls lsp)

### Full Context

clear router mpls lsp

### Description

This command resets and restarts an LSP.

### Parameters

*lsp-name*

Specifies the LSP to clear, up to 64 characters in length.

### Platforms

All

## lsp

### Syntax

**lsp** [*plsp-id plsp-id*]

**lsp** *lsp-type lsp-type* [**tunnel-id** *tunnel-id*]

### Context

[\[Tree\]](#) (tools>dump>router>pcep>pcc lsp)

### Full Context

tools dump router pcep pcc lsp

### Description

This command displays LSP information.

## Parameters

### *plsp-id*

Specifies the PLSP ID.

**Values** 1 to 1048575

### *lsp-type*

Specifies the LSP type.

**Values** rsvp-p2p, rsvp-p2mp, seg-rt

### *tunnel-id*

Specifies the tunnel ID.

**Values** 1 to 1048575

## Platforms

All

## 14.71 lsp-autobandwidth

### lsp-autobandwidth

#### Syntax

**lsp-autobandwidth** [*lsp-name*]

#### Context

[\[Tree\]](#) (clear>router>mpls lsp-autobandwidth)

#### Full Context

clear router mpls lsp-autobandwidth

#### Description

This command clears the following counters/timers, as follows:

- The sample count is reset to zero, and the average data rate of the current sample interval is discarded.
- The adjust count is reset to zero.
- The maximum average data rate is zeroed.
- The overflow count is zeroed.

#### Parameters

##### *lsp-name*

Specifies the LSP to clear, up to 64 characters.

## Platforms

All

## 14.72 lsp-bfd

### lsp-bfd

#### Syntax

**lsp-bfd** [*prefix-list-name* [**prefixes**]]

#### Context

[\[Tree\]](#) (show>router>ldp lsp-bfd)

#### Full Context

show router ldp lsp-bfd

#### Description

This command displays information about prefixes that have LSP BFD configured.

#### Parameters

##### **prefixes**

Shows all FECs that the system has received a label mapping message for and which are also eligible for LSP BFD.

##### **prefix-list-name**

Specifies a prefix list for which to display prefix information, and whether BFD is active for each prefix.

## Platforms

All

## Output

The following output is an example of LSP BFD information for prefixes.

### Output Example

```
A:b1# show router ldp lsp-bfd "prefixListName_12345678901234567"
=====
BFD on LDP LSP Configuration Detail
=====
Prefix List       : prefixListName_12345678901234567
Prefix Count     : 6
BFD Template     : bfdTemplateName
Source Address   : 2001:db8:f4f5:f6f7:f8f9:fafb:fcfd:feff
BFD Enable       : Yes                Failure Action   : none
LSP Ping Interval : 60 seconds          Priority         : 1
=====
```

```
A:b1# show router ldp lsp-bfd "prefixListName_12345678901234567" prefixes
=====
BFD on LDP LSP Prefix List "prefixListName_12345678901234567" (Enabled)
=====
Prefix                               Operational State
-----
10.2.3.4/32                           BFD Disabled
10.2.3.5/32                           Src Address Missing
10.2.3.6/32                           Src Address Mismatch
10::2:0/128                            Up
1::2:1/128                             Down
2001:db8:1415:1617:1819:1a1b:1c1d:1e1f/128 Down (Trap Only)
-----
No. of prefixes: 6
=====
```

## Isp-bfd

### Syntax

**Isp-bfd**

### Context

[\[Tree\]](#) (tools>dump>router>ldp lsp-bfd)

[\[Tree\]](#) (tools>dump>router lsp-bfd)

### Full Context

tools dump router ldp lsp-bfd

tools dump router lsp-bfd

### Description

Commands in this context dump LSP BFD template information.

### Platforms

All

## Isp-bfd

### Syntax

**Isp-bfd**

**Isp-bfd ldp prefix** *ip-prefix/prefix-length*

**Isp-bfd local-bfd-discrim** *bfd-discriminator*

**Isp-bfd lsp-name** *lsp-name*

## Context

[Tree] (show>test-oam lsp-bfd)

## Full Context

show test-oam lsp-bfd

## Description

This command displays information about Bidirectional Forwarding Detection (BFD) sessions on LSPs.

## Parameters

### *ip-prefix/prefix-length*

Specifies an IP prefix for which to display BFD session information, and the length of the prefix.

**Values**    *ipv4-prefix* — a.b.c.d  
              *ipv4-prefix-length* — 0 to 32  
              *ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)  
                  x:x:x:x:x:d.d.d.d  
              x — 0 to FFFF (hexadecimal)  
              d — 0 to 255 (decimal)  
              *ipv6-prefix-length* — 0 to 128

### *bfd-discriminator*

Displays information about the unique local discriminator for this session.

### *lsp-name*

Specifies information about the specified LSP name up to 64 characters in length.

## Platforms

All

## Output

The following output is an example of BFD LSP information.

### Output Example

```
A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1
-----
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-----
LSP Name : Z
LSP Path Status      : unknown
Replying Node       : (None)
Latest Return Code  : NoRtnCode (0)
Latest Return Subcode : 3
Local BFD Discriminator : 1           Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests : 2123456789   Rx LSP Ping Requests   : 3123456789
-----
A:bkvm1#
```

```
A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1
-----
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-----
LSP Name : Z
LSP Path Status      : active
Replying Node       : 192.168.242.243
Latest Return Code  : DSRtrMatchLabel (8)
Latest Return Subcode : 4
Local BFD Discriminator : 1           Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests : 2123456789    Rx LSP Ping Requests   : 3123456789
-----
A:bkvm1#

A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1
-----
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-----
LSP Name : Z
LSP Path Status      : inactive
Replying Node       : 2001:db8:f4f5:f6f7:f8f9:fafb:fcfd:feff
Latest Return Code  : DSRtrUnmatchLabel (10)
Latest Return Subcode : 5
Local BFD Discriminator : 1           Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests : 2123456789    Rx LSP Ping Requests   : 3123456789
-----
A:bkvm1#

A:bkvm1# show test-oam lsp-bfd local-bfd-discrim 1
-----
LSP Ping Bootstrap and Periodic Verification Information for BFD on an LSP
-----
LSP Name : Z
LSP Path Status      : unknown
Replying Node       : (None)
Latest Return Code  : DSNoMac (16)
Latest Return Subcode : 6
Local BFD Discriminator : 1           Remote BFD Discriminator : 4111222333
Tx LSP Ping Requests : 2123456789    Rx LSP Ping Requests   : 3123456789
-----
A:bkvm1#

*B:Dut-B# show test-oam lsp-bfd ldp prefix 10.20.1.3/32
-----
LSP Ping Bootstrap and Periodic Verification Information for BFD on LSPs
-----
FEC Type           : LDP
Prefix             : 10.20.1.3/32
Source Address     : 10.20.1.2
Replying Node      : 10.20.1.3
Latest Return Code : EgressRtr (3)
Latest Return Subcode : 1
Local BFD Discriminator : 1           Remote BFD Discriminator : 43
LSP Ping Tx Interval (s) : 60       Bootstrap Retry Count   : 0
Tx LSP Ping Requests : 2           Rx LSP Ping Replies    : 2
-----
No. of matching BFD on LSP sessions: 1
-----
```



## lsp-bfd

### Syntax

**lsp-bfd**

### Context

[\[Tree\]](#) (tools>dump>test-oam lsp-bfd)

### Full Context

tools dump test-oam lsp-bfd

### Description

Commands in this context dump information about Bidirectional Forwarding Detection (BFD) sessions on LSPs.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 14.73 lsp-db

## lsp-db

### Syntax

**lsp-db** [**lsp-type** *lsp-type*] [**delegated-pce** *ip-address*]  
**lsp-db** [**lsp-type** *lsp-type*] **from** *ip-address* [**delegated-pce** *ip-address*]  
**lsp-db** [**lsp-type** *lsp-type*] **lsp** *lsp-name* [**delegated-pce** *ip-address*]  
**lsp-db** [**lsp-type** *lsp-type*] **to** *ip-address* [**delegated-pce** *ip-address*]  
**lsp-db** [**lsp-type** *lsp-type*] **tunnel-id** *tunnel-id*

### Context

[\[Tree\]](#) (show>router>pcep>pcc lsp-db)

### Full Context

show router pcep pcc lsp-db

### Description

This command displays the PCEP LSP-DB information.

## Parameters

### *lsp-type*

Specifies the LSP type.

**Values** rsvp-p2p, rsvp-p2mp, seg-rt



**Note:**

The LSP type, **rsvp-p2mp**, is not supported for PCE controlled or PCE initiated LSPs.

### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

### *lsp-name*

Specifies the LSP name, up to 80 characters.

### *tunnel-id*

Specifies the tunnel ID.

**Values** 1 to 65535

## Platforms

All

## Output

LSP-DB Output

[Table 275: LSP-DB Output Fields](#) describes LSP-DB output fields.

### Output Example

```
*A:Dut-C>config>router>mpls# show router pcep pcc lsp-db
=====
PCEP Path Computation Client (PCC) LSP Update Info
=====
PCEP-specific LSP ID: 1
LSP ID           : 11264           LSP Type           : pce-init-seg-rt
Tunnel ID        : 16386           Extended Tunnel Id  : 10.20.1.3
LSP Name         : intra_area__no_constraints
Source Address   : 10.20.1.3       Destination Address : 10.20.1.6
LSP Delegated    : True           Delegate PCE Address: 10.20.1.24
Oper Status      : active
-----
PCEP-specific LSP ID: 2
LSP ID           : 3072           LSP Type           : pce-init-seg-rt
Tunnel ID        : 16387           Extended Tunnel Id  : 10.20.1.3
LSP Name         : intra_area_nonDefault
Source Address   : 10.20.1.3       Destination Address : 10.20.1.6
LSP Delegated    : True           Delegate PCE Address: 10.20.1.24
Oper Status      : active
=====
```

Table 275: LSP-DB Output Fields

Label	Description
PCEP-specific LSP ID	Specifies the PCEP specific LSP ID.
LSP ID	Specifies the LSP ID.
LSP Type	rsvp-p2p — Indicates the LSP type is rsvp-p2p. rsvp-p2mp — Indicates the LSP type is rsvp-p2mp. seg-rt — Indicates the LSP type is seg-rt. pce-init-seg-rt — Indicates the LSP type is pce-init-seg-rt.
Tunnel ID	Specifies the tunnel ID.
Extended Tunnel Id	Specifies the extended tunnel ID.
LSP Name	Specifies the LSP name
Source Address	Specifies the source IP address.
Destination Address	Specifies the destination IP address.
LSP Delegated	True — Specifies that LSP Delegation is true. False— Specifies that LSP Delegation is false.
Delegate PCE Address	Specifies the delegate PCE IP address.
Oper Status	active — Specifies that the operational status is active. down — Specifies that the operational status is down.

## 14.74 lsp-egress-stats

### lsp-egress-stats

#### Syntax

**lsp-egress-stats**

**lsp-egress-stats** *lsp-name*

#### Context

**[Tree]** (show>router>mpls lsp-egress-stats)

## Full Context

```
show router mpls lsp-egress-stats
```

## Description

This command displays MPLS LSP egress statistics information.

## Parameters

### *lsp-name*

Specifies the LSP name, up to 64 characters.

## Platforms

All

## Output

The following output is an example of MPLS LSP egress statistics information.

### Output Example

```
*A:Dut-C>config>router>mpls>lsp$ show router mpls lsp-egress-stats lsp "1"
=====
MPLS LSP Egress Statistics
=====
-----
LSP Name      : 1
-----
Collect Stats : Enabled          Accting Plcy. : Default
Adm State     : Up              PSB Match     : True
FC BE
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
FC L2
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
FC AF
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
FC L1
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
FC H2
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
FC EF
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
FC H1
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
FC NC
InProf Pkts   : 0              OutProf Pkts  : 0
InProf Octets : 0              OutProf Octets: 0
=====

*A:Dut-C# show router mpls lsp-egress-stats lsp "ipmsi-1-73728"
=====
```

```
MPLS LSP Egress Statistics
=====
-----
LSP Name      : ipmsi-1-73728
-----
Collect Stats : Enabled           Accting Plcy. : Default
Adm State     : Up                PSB Match     : True
FC BE
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
FC L2
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
FC AF
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
FC L1
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
FC H2
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
FC EF
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
FC H1
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
FC NC
InProf Pkts  : 0                  OutProf Pkts  : 0
InProf Octets : 0                  OutProf Octets : 0
=====
```

## lsp-egress-stats

### Syntax

**lsp-egress-stats** [active]

**lsp-egress-stats** **lsp** *lsp-name*

### Context

[\[Tree\]](#) (show>router>mpls>mpls-tp lsp-egress-stats)

### Full Context

show router mpls mpls-tp lsp-egress-stats

### Description

This command displays MPLS-TP LSP egress statistics information.

### Parameters

**active**

Displays statistics for all active LSPs.

***lsp-name***

Displays statistics for the specified LSP name, up to 64 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## lsp-egress-stats

**Syntax**

**lsp-egress-stats**

**lsp-egress-stats** *lsp-name*

**Context**

[\[Tree\]](#) (clear>router>mpls lsp-egress-stats)

**Full Context**

clear router mpls lsp-egress-stats

**Description**

This command clears MPLS LSP egress statistics information.

**Parameters**

***lsp-name***

Specifies the LSP to clear, up to 64 characters.

**Platforms**

All

## lsp-egress-stats

**Syntax**

**lsp-egress-stats** **lsp** *lsp-name* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**] [**bits**]

**Context**

[\[Tree\]](#) (monitor>router>mpls lsp-egress-stats)

**Full Context**

monitor router mpls lsp-egress-stats

**Description**

This command displays egress statistics for LSP interfaces at the configured interval until the configured count is reached.

## Default

no lsp-egress-stats

## Parameters

### ***lsp-name***

Specifies the LSP name, up to 64 characters.

### ***repeat***

Specifies how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### ***seconds***

Specifies the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

### ***absolute***

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### ***rate***

Displays rate-per-second for each statistic instead of the delta.

### ***bits***

Displays the output values in bits rather than in octets.

## Platforms

All

## Output

The following output is an example of LSP egress statistics information.

### Output Example

```
B:Dut-C-cpm2# monitor router mpls lsp-egress-stats lsp sample repeat 3 interval 10
absolute
=====
Monitor egress statistics for MPLS LSP "sample"
-----
At time t = 0 sec (Base Statistics)
-----
LSP Name      : sample
-----
Collect Stats : Enabled           Accting Plcy. : 5
Adm State     : Up                PSB Match    : True
FC BE
InProf Pkts  : 0                  OutProf Pkts : 551
InProf Octets : 0                OutProf Octets: 560918
FC L2
```

```

InProf Pkts : 0          OutProf Pkts : 551
InProf Octets : 0       OutProf Octets: 560918
FC AF
InProf Pkts : 551       OutProf Pkts : 0
InProf Octets : 560918 OutProf Octets: 0
FC L1
InProf Pkts : 551       OutProf Pkts : 0
InProf Octets : 560918 OutProf Octets: 0
FC H2
InProf Pkts : 0         OutProf Pkts : 551
InProf Octets : 0       OutProf Octets: 560918
FC EF
InProf Pkts : 0         OutProf Pkts : 551
InProf Octets : 0       OutProf Octets: 560918
FC H1
InProf Pkts : 0         OutProf Pkts : 551
InProf Octets : 0       OutProf Octets: 560918
FC NC
InProf Pkts : 551       OutProf Pkts : 0
InProf Octets : 560918 OutProf Octets: 0
    
```

-----  
 At time t = 10 sec (Mode: Absolute)  
 -----

LSP Name : sample  
 -----

```

Collect Stats : Enabled      Accting Plcy. : 5
Adm State : Up              PSB Match : True
FC BE
InProf Pkts : 0             OutProf Pkts : 580
InProf Octets : 0           OutProf Octets: 590440
FC L2
InProf Pkts : 0             OutProf Pkts : 580
InProf Octets : 0           OutProf Octets: 590440
FC AF
InProf Pkts : 580           OutProf Pkts : 0
InProf Octets : 590440      OutProf Octets: 0
FC L1
InProf Pkts : 580           OutProf Pkts : 0
InProf Octets : 590440      OutProf Octets: 0
FC H2
InProf Pkts : 0             OutProf Pkts : 580
InProf Octets : 0           OutProf Octets: 590440
FC EF
InProf Pkts : 0             OutProf Pkts : 580
InProf Octets : 0           OutProf Octets: 590440
FC H1
InProf Pkts : 0             OutProf Pkts : 580
InProf Octets : 0           OutProf Octets: 590440
FC NC
InProf Pkts : 580           OutProf Pkts : 0
InProf Octets : 590440      OutProf Octets: 0
    
```

-----  
 At time t = 20 sec (Mode: Absolute)  
 -----

LSP Name : sample  
 -----

```

Collect Stats : Enabled      Accting Plcy. : 5
Adm State : Up              PSB Match : True
FC BE
InProf Pkts : 0             OutProf Pkts : 609
InProf Octets : 0           OutProf Octets: 619962
FC L2
InProf Pkts : 0             OutProf Pkts : 609
InProf Octets : 0           OutProf Octets: 619962
    
```



```
FC AF
InProf Pkts : 609          OutProf Pkts : 0
InProf Octets : 619962    OutProf Octets: 0
FC L1
InProf Pkts : 609          OutProf Pkts : 0
InProf Octets : 619962    OutProf Octets: 0
FC H2
InProf Pkts : 0           OutProf Pkts : 609
InProf Octets : 0         OutProf Octets: 619962
FC EF
InProf Pkts : 0           OutProf Pkts : 609
InProf Octets : 0         OutProf Octets: 619962
FC H1
InProf Pkts : 0           OutProf Pkts : 609
InProf Octets : 0         OutProf Octets: 619962
FC NC
InProf Pkts : 609          OutProf Pkts : 0
InProf Octets : 619962    OutProf Octets: 0
```

-----  
At time t = 30 sec (Mode: Absolute)  
-----

LSP Name : sample  
-----

```
Collect Stats : Enabled      Accting Plcy. : 5
Adm State : Up              PSB Match : True
FC BE
InProf Pkts : 0           OutProf Pkts : 638
InProf Octets : 0         OutProf Octets: 649484
FC L2
InProf Pkts : 0           OutProf Pkts : 638
InProf Octets : 0         OutProf Octets: 649484
FC AF
InProf Pkts : 638          OutProf Pkts : 0
InProf Octets : 649484    OutProf Octets: 0
FC L1
InProf Pkts : 638          OutProf Pkts : 0
InProf Octets : 649484    OutProf Octets: 0
FC H2
InProf Pkts : 0           OutProf Pkts : 638
InProf Octets : 0         OutProf Octets: 649484
FC EF
InProf Pkts : 0           OutProf Pkts : 638
InProf Octets : 0         OutProf Octets: 649484
FC H1
InProf Pkts : 0           OutProf Pkts : 638
InProf Octets : 0         OutProf Octets: 649484
FC NC
InProf Pkts : 638          OutProf Pkts : 0
InProf Octets : 649484    OutProf Octets: 0
```

=====  
B:Dut-C-cpm2#

## 14.75 lsp-history

### lsp-history

#### Syntax

**lsp-history** [*lsp-name*]

#### Context

[\[Tree\]](#) (tools>dump>router>mpls lsp-history)

#### Full Context

tools dump router mpls lsp-history

#### Description

This command displays the recorded history of LSP events for all RSVP-TE and SR-TE LSPs if no LSP name is provided, or only the named LSP if an LSP name is provided.

#### Parameters

*lsp-name*

Specifies the LSP name, up to 64 characters.

#### Platforms

All

#### Output

The following example shows the LSP history output, and [Table 276: Output fields: tools dump router mpls lsp-history command](#) describes the output fields.

```
tools dump router mpls lsp-history "C_F_5"
```

#### Output Example

```
Info: lsp history recording is Enabled
=====
LSP: C_F_5
Hist Log [size=100] Last Entry = 17
=====
 17 2022/09/20 06:43:52.15 UTC LSP Up
 16 2022/09/20 06:43:52.15 UTC Active path selected: C_F_sec
 15 2022/09/20 06:43:52.15 UTC Path Up: C_F_sec:47618
 14 2022/09/20 06:43:52.13 UTC CSPF Computation result Success: C_F_sec
 13 2022/09/20 06:43:52.13 UTC ER0: IPv4Prefix 10.10.5.3/32, Strict
 12 2022/09/20 06:43:52.13 UTC Active path removed: C_F_5
 11 2022/09/20 06:43:52.13 UTC LSP Down Reason: Admin Down
 10 2022/09/20 06:43:52.13 UTC Path Down: C_F_5:pathAdminDown
  9 2022/09/20 06:42:58.57 UTC LSP-ID Created: 47618
```

```

8 2022/09/20 06:39:49.53 UTC LSP Up
7 2022/09/20 06:39:49.53 UTC Active path selected: C_F_5
6 2022/09/20 06:39:49.53 UTC Path Up: C_F_5:47616
5 2022/09/20 06:39:49.53 UTC CSPF Computation result Success: C_F_5
4 2022/09/20 06:39:49.53 UTC ER0: IPv4Prefix 10.10.11.3/32, Strict
3 2022/09/20 06:39:32.18 UTC CSPF result Failure: No CspfRouteOwner
2 2022/09/20 06:39:32.18 UTC LSP-ID Created: 47616
1 2022/09/20 06:39:32.15 UTC Created: C_F_5
    
```

Table 276: Output fields: tools dump router mpls lsp-history command

Label	Description
Info	Specifies whether the LSP history event recording is enabled or disabled
LSP	Specifies the name of the LSP
Hist Log	Specifies the size of the history log
Last Entry	Specifies the number of entries

## Isp-history

### Syntax

**isp-history** [*isp-name*]

### Context

**[Tree]** (clear>router>mpls lsp-history)

### Full Context

clear router mpls lsp-history

### Description

This command clears the recorded history of LSP events for all RSVP-TE and SR-TE LSPs if no LSP name is provided, or only the named LSP if the LSP name is provided.

### Parameters

*isp-name*

Specifies the LSP name, up to 64 characters.

### Platforms

All

## 14.76 lsp-ingress-stats

### lsp-ingress-stats

#### Syntax

**lsp-ingress-stats**

**lsp-ingress-stats** *ip-address* **lsp** *lsp-name*

#### Context

**[Tree]** (show>router>mpls lsp-ingress-stats)

#### Full Context

show router mpls lsp-ingress-stats

#### Description

This command displays MPLS LSP ingress statistics information.

#### Parameters

***lsp-name***

Specifies the LSP name, up to 64 characters.

#### Platforms

All

#### Output

The following output is an example of MPLS LSP ingress statistics information.

#### Output Example

```
*A:Dut-A# show router mpls lsp-ingress-stats lsp "1" sender 10.20.1.3
=====
MPLS LSP Ingress Statistics
=====
-----
LSP Name       : 1
Sender         : 10.20.1.3
-----
Collect Stats : Disabled          Accting Plcy. : None
Adm State     : Up                PSB Match     : True
FC BE
InProf Pkts   : 0                 OutProf Pkts  : 0
InProf Octets : 0                 OutProf Octets: 0
FC L2
InProf Pkts   : 0                 OutProf Pkts  : 0
InProf Octets : 0                 OutProf Octets: 0
FC AF
InProf Pkts   : 0                 OutProf Pkts  : 0
InProf Octets : 0                 OutProf Octets: 0
```

```
FC L1
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC H2
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC EF
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC H1
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC NC
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
=====

*A:Dut-A# show router mpls lsp-ingress-stats lsp "ipmsi-1-73728" sender 10.20.1.3
=====
MPLS LSP Ingress Statistics
=====
-----
LSP Name      : ipmsi-1-73728
Sender       : 10.20.1.3
-----
Collect Stats : Disabled          Accting Plcy. : None
Adm State    : Up                PSB Match    : True
FC BE
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC L2
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC AF
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC L1
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC H2
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC EF
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC H1
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
FC NC
InProf Pkts : 0
InProf Octets : 0
OutProf Pkts : 0
OutProf Octets : 0
=====

*A:Dut-A>config>router>mpls>ingr-stats# show router mpls lsp-ingress-stats
type p2mp active template-match
=====
MPLS LSP Ingress Statistics
=====
-----
LSP Name      : ipmsi-1-73728
Sender       : 10.20.1.3
-----
Collect Stats : Disabled          Accting Plcy. : None
```

```
Adm State      : Up                PSB Match      : True
FC BE
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
FC L2
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
FC AF
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
FC L1
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
FC H2
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
FC EF
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
FC H1
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
FC NC
InProf Pkts    : 0                OutProf Pkts   : 0
InProf Octets  : 0                OutProf Octets : 0
-----
LSP Statistics : 1
```

## lsp-ingress-stats

### Syntax

**lsp-ingress-stats** [*active*]

**lsp-ingress-stats** *lsp lsp-name*

### Context

[\[Tree\]](#) (show>router>mpls>mpls-tp lsp-ingress-stats)

### Full Context

show router mpls mpls-tp lsp-ingress-stats

### Description

This command displays MPLS-TP LSP ingress statistics information.

### Parameters

***active***

Displays statistics for all active LSPs.

***lsp-name***

Displays statistics for the specified LSP name, up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## lsp-ingress-stats

### Syntax

**lsp-ingress-stats**

**lsp-ingress-stats** *ip-address* **lsp** *lsp-name*

**lsp-ingress-stats** *sender-address:lsp-name*

### Context

[\[Tree\]](#) (clear>router>mpls lsp-ingress-stats)

### Full Context

clear router mpls lsp-ingress-stats

### Description

This command clears MPLS LSP ingress statistics information.

## Platforms

All

## lsp-ingress-stats

### Syntax

**lsp-ingress-stats** **lsp** *lsp-name* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**] *ip-address* [**bits**]

### Context

[\[Tree\]](#) (monitor>router>mpls lsp-ingress-stats)

### Full Context

monitor router mpls lsp-ingress-stats

### Description

This command displays ingress statistics for LSP interfaces at the configured interval until the configured count is reached.

### Parameters

***lsp-name***

Specifies the LSP name up to 64 characters.

**repeat**

Specifies how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**seconds**

Specifies the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**ip-address**

Specifies the IP address.

**Values** a.b.c.d

**bits**

Displays the output values in bits rather than in octets.

**Platforms**

All

**Output**

The following output is an example of LSP ingress statistics information.

**Output Example**

```
B:Dut-C-cpm2# monitor router mpls lsp-ingress-stats lsp sample 192.0.2.1 repeat 3
interval 10 absolute
=====
Monitor ingress statistics for MPLS LSP "sample"
-----
At time t = 0 sec (Base Statistics)
-----
LSP Name       : sample
Sender         : 192.0.2.1
-----
Collect Stats : Enabled           Accting Plcy. : None
Adm State     : Up                PSB Match    : True
FC BE
InProf Pkts   : 539              OutProf Pkts : 0
InProf Octets : 548702          OutProf Octets: 0
FC L2
InProf Pkts   : 0                OutProf Pkts : 539
InProf Octets : 0                OutProf Octets: 548702
FC AF
```



```
InProf Pkts : 0          OutProf Pkts : 0
InProf Octets : 0       OutProf Octets: 0
FC L1
InProf Pkts : 1078      OutProf Pkts : 0
InProf Octets : 1097404 OutProf Octets: 0
FC H2
InProf Pkts : 0          OutProf Pkts : 539
InProf Octets : 0       OutProf Octets: 548702
FC EF
InProf Pkts : 539       OutProf Pkts : 0
InProf Octets : 548702  OutProf Octets: 0
FC H1
InProf Pkts : 539       OutProf Pkts : 0
InProf Octets : 548702  OutProf Octets: 0
FC NC
InProf Pkts : 0          OutProf Pkts : 539
InProf Octets : 0       OutProf Octets: 548702
```

-----  
At time t = 10 sec (Mode: Absolute)

-----  
LSP Name : sample  
Sender : 192.0.2.1  
-----

```
Collect Stats : Enabled      Accting Plcy. : None
Adm State : Up              PSB Match : True
FC BE
InProf Pkts : 568          OutProf Pkts : 0
InProf Octets : 578224    OutProf Octets: 0
FC L2
InProf Pkts : 0           OutProf Pkts : 568
InProf Octets : 0         OutProf Octets: 578224
FC AF
InProf Pkts : 0           OutProf Pkts : 0
InProf Octets : 0         OutProf Octets: 0
FC L1
InProf Pkts : 1136        OutProf Pkts : 0
InProf Octets : 1156448   OutProf Octets: 0
FC H2
InProf Pkts : 0           OutProf Pkts : 568
InProf Octets : 0         OutProf Octets: 578224
FC EF
InProf Pkts : 568         OutProf Pkts : 0
InProf Octets : 578224    OutProf Octets: 0
FC H1
InProf Pkts : 568         OutProf Pkts : 0
InProf Octets : 578224    OutProf Octets: 0
FC NC
InProf Pkts : 0           OutProf Pkts : 568
InProf Octets : 0         OutProf Octets: 578224
```

-----  
At time t = 20 sec (Mode: Absolute)

-----  
LSP Name : sample  
Sender : 192.0.2.1  
-----

```
Collect Stats : Enabled      Accting Plcy. : None
Adm State : Up              PSB Match : True
FC BE
InProf Pkts : 597          OutProf Pkts : 0
InProf Octets : 607746    OutProf Octets: 0
FC L2
InProf Pkts : 0           OutProf Pkts : 597
InProf Octets : 0         OutProf Octets: 607746
FC AF
```

```
InProf Pkts : 0          OutProf Pkts : 0
InProf Octets : 0       OutProf Octets: 0
FC L1
InProf Pkts : 1194      OutProf Pkts : 0
InProf Octets : 1215492 OutProf Octets: 0
FC H2
InProf Pkts : 0         OutProf Pkts : 597
InProf Octets : 0       OutProf Octets: 607746
FC EF
InProf Pkts : 597      OutProf Pkts : 0
InProf Octets : 607746 OutProf Octets: 0
FC H1
InProf Pkts : 597      OutProf Pkts : 0
InProf Octets : 607746 OutProf Octets: 0
FC NC
InProf Pkts : 0         OutProf Pkts : 597
InProf Octets : 0       OutProf Octets: 607746
```

-----  
At time t = 30 sec (Mode: Absolute)

-----  
LSP Name : sample  
Sender : 192.0.2.1  
-----

```
Collect Stats : Enabled      Accting Plcy. : None
Adm State : Up              PSB Match : True
FC BE
InProf Pkts : 627          OutProf Pkts : 0
InProf Octets : 638286    OutProf Octets: 0
FC L2
InProf Pkts : 0           OutProf Pkts : 627
InProf Octets : 0         OutProf Octets: 638286
FC AF
InProf Pkts : 0           OutProf Pkts : 0
InProf Octets : 0         OutProf Octets: 0
FC L1
InProf Pkts : 1254        OutProf Pkts : 0
InProf Octets : 1276572   OutProf Octets: 0
FC H2
InProf Pkts : 0           OutProf Pkts : 627
InProf Octets : 0         OutProf Octets: 638286
FC EF
InProf Pkts : 627        OutProf Pkts : 0
InProf Octets : 638286   OutProf Octets: 0
FC H1
InProf Pkts : 627        OutProf Pkts : 0
InProf Octets : 638286   OutProf Octets: 0
FC NC
InProf Pkts : 0           OutProf Pkts : 627
InProf Octets : 0         OutProf Octets: 638286
```

=====  
B:Dut-C-cpm2#

## 14.77 Isp-ldp

### Isp-ldp

#### Syntax

**Isp-ldp prefix** *ip-prefix/ip-prefix-length*

#### Context

[\[Tree\]](#) (tools>dump>router>bfd Isp-ldp)

#### Full Context

tools dump router bfd Isp-ldp

#### Description

This command displays the local and remote discriminator values for LSP BFD sessions for a given prefix, as well as the BFD session state.

#### Parameters

**prefix** *ip-prefix/ip-prefix-length*

Specifies information for the specified IP prefix and mask length.

#### Values

ipv4-address	- a.b.c.d
ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x - [0 to FFFF]H
	d - [0 to 255]D

#### Platforms

All

## 14.78 Isp-rsvp

### Isp-rsvp

#### Syntax

**Isp-rsvp {head | tail}** [**tunnel-id** *tunnel-id*]

## Context

[\[Tree\]](#) (tools>dump>router>bfd lsp-rsvp)

## Full Context

```
tools dump router bfd lsp-rsvp
```

## Description

This command displays the local and remote discriminator values for LSP RSVP sessions.

## Parameters

### head

Specifies information for the head of the LSP LDP link.

### tail

Specifies information for the tail of the LSP LDP link.

### tunnel-id *tunnel-id*

Displays information about the specified tunnel.

**Values** 0 to 4294967295

## Platforms

All

## 14.79 lsp-self-ping

### lsp-self-ping

## Syntax

```
lsp-self-ping
```

## Context

[\[Tree\]](#) (show>router>mpls lsp-self-ping)

## Full Context

```
show router mpls lsp-self-ping
```

## Description

This command displays LSP Self-ping timeout statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of MPLS LSP Self-ping information.

[Table 277: MPLS LSP Self-ping Output Fields](#) describes the MPLS LSP Self-ping output fields.

*Table 277: MPLS LSP Self-ping Output Fields*

Label	Description
RSVP-TE LSP Self Ping	Specifies the status of LSP Self-ping
LSP Self Ping Timeout	Specifies the value of the LSP timeout in seconds
LSP Self Ping Interval	Specifies the LSP Self-ping interval in seconds
Number of LSP Self Ping Timeouts	Specifies the total number of LSP Self-ping timeouts

## Output Example

```
*A:Dut-C>config>router>mpls# show router mpls lsp-self-ping
=====
MPLS LSP Self Ping Timeout Statistics
=====
RSVP-TE LSP Self Ping           : Enabled
LSP Self Ping Timeout           : 60 seconds
LSP Self Ping Interval          : 1 seconds
LSP Self Ping Timeout Action    : switch
Number of LSP Self Ping Timeouts : 0
OAM Resource Failures           : 0
=====
*A:Dut-C>config>router>mpls#
```

## lsp-self-ping

### Syntax

**lsp-self-ping**

### Context

[\[Tree\]](#) (clear>router>mpls>lsp lsp-self-ping)

### Full Context

clear router mpls lsp lsp-self-ping

### Description

This command resets or clears counters and timers for MPLS LSP self ping at the LSP level.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Isp-self-ping

### Syntax

**Isp-self-ping**

### Context

[\[Tree\]](#) (clear>router>mpls Isp-self-ping)

### Full Context

clear router mpls Isp-self-ping

### Description

This command resets or clears counters and timers for MPLS LSP self ping at the LSP level.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 14.80 Isp-template

## Isp-template

### Syntax

**Isp-template** [*Isp-template-name*] [**detail**]

**Isp-template** [*Isp-template-name*] **bindings**

### Context

[\[Tree\]](#) (show>router>mpls Isp-template)

### Full Context

show router mpls Isp-template

### Description

This command displays MPLS LSP template information.

### Parameters

#### *Isp-template-name*

Specifies the LSP template name, up to 32 characters.

#### **detail**

Displays detailed information.

## bindings

Displays any bindings associated with the LSP template.

## Platforms

All

## Output

The following outputs are examples of LSP template information, and [Table 278: LSP Template Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-C>config>router>mpls# show router mpls lsp-template
=====
MPLS LSP Templates
=====
Name                               Type           Admin State    No Of LSPs
-----
pce_init_sr_te_template             PceInitP2PSrTe Up              1
pce_init_sr_te_template_nonDef      PceInitP2PSrTe Up              1
-----
LSP Templates : 2
```

```
*A:Dut-C>config>router>mpls# show router mpls lsp-template detail
=====
MPLS LSP Templates (Detail)
=====
Legend :
+ - Inherited
-----
LSP Template : pce_init_sr_te_template
-----
Type           : PceInitP2PSrTe      Admin State      : Up
From           : 10.20.1.3+
Template ID    : Default
Default Path   : fully_loose
Bandwidth      : 0 Mbps
CSPF           : Enabled
Include Groups :
None
Record Route   : Record
Record Label   : Record
Retry Limit    : 0
Retry Timer    : 30 sec
LSP Count      : 1
Ref Count      : 0
Load Bal Wt    : N/A
ClassForwarding : Disabled
VprnAutoBind   : Enabled
IGP Shortcut   : Enabled
BGP Shortcut   : Enabled
IGP LFA        : Disabled
IGP Rel Metric : Disabled
Metric         : 0
BGP Transport Tunn : Enabled
Entropy Label  : Enabled+
PCE Report     : Enabled

Admin Tags     : None
-----
LSP Template : pce_init_sr_te_template_nonDef
-----
Type           : PceInitP2PSrTe      Admin State      : Up
From           : 10.20.1.3+
```

```

Template ID      : 4294967295
Default Path    : fully_loose
Bandwidth       : 0 Mbps
CSPF            : Enabled
Include Groups  :
None
Record Route    : Record
Retry Limit     : 0
LSP Count       : 1
Load Bal Wt     : N/A
VprnAutoBind   : Enabled
IGP Shortcut    : Enabled
IGP LFA         : Disabled
Metric          : 0
BGP Transport Tunn : Enabled
Entropy Label   : Enabled+
PCE Report      : Enabled

Hop Limit       : 255
Use TE metric   : Disabled
Exclude Groups  :
None
Record Label    : Record
Retry Timer     : 30 sec
Ref Count       : 0
ClassForwarding : Disabled

BGP Shortcut    : Enabled
IGP Rel Metric  : Disabled
    
```

Admin Tags : None

=====

+ indicates inherited values

\*A:Dut-C# show router mpls lsp-template detail

=====

MPLS LSP Templates (Detail)

=====

-----

LSP Template : ipmsi

-----

```

Type           : P2MP
Default Path    : path_ipmsi
Bandwidth       : 0 Mbps
CSPF            : Enabled
Include Groups  :
None
FastReroute    : Enabled
FR Method       : Facility
Record Route    : Record
Retry Limit     : 0
LSP Count       : 3

Admin State     : Up
Adaptive        : Enabled
Hop Limit       : 255
Use TE metric   : Disabled
Exclude Groups  :
None
FR Hop Limit    : 16
Record Label    : Record
Retry Timer     : 30 sec
Ref Count       : 3
    
```

## Output Example

\*A:Dut-A# show router mpls lsp-template "toC" detail

=====

MPLS LSP Templates (Detail)

=====

Legend :

+ - Inherited

=====

-----

LSP Template : toC

-----

```

Type           : OnDemandP2PSrTe
From           : 10.20.1.1+
Default Path    : toC
Bandwidth       : 0 Mbps
PathCompMethod : pce
Local Sr Protection: preferred
Include Groups  :
None
Record Route    : Record

Admin State     : Up
Hop Limit       : 255
Metric Type     : igp
Label Stack Reduct*: Disabled
Exclude Groups  :
None
Record Label    : Record
    
```



```

Retry Limit      : 0                Retry Timer      : 30 sec
LSP Count       : 1                Ref Count       : 0
Load Bal Wt     : N/A              ClassForwarding : Disabled
VprnAutoBind   : Enabled
IGP Shortcut    : Enabled          BGP Shortcut     : Enabled
IGP LFA        : Disabled          IGP Rel Metric  : Disabled
Metric         : 0
BGP Transport Tunn : Enabled
Egress Stats    : Disabled
Stat Mode      : aggregate
BFD Template Name : sbfdTemplate   BFD LSP Ping Intvl : N/A
BFD Enable     : True              BFD Failure-action : None
WaitForUpTimer : 30
Entropy Label  : Enabled+
PCE Report     : Enabled
Override Tunnel ELC: Disabled

Admin Tags     :
               : green
Lsp Self Ping  : Inherited
PCE Control    : Enabled          FallbkPathComp  : not-applicable
Path Profile   :
Profile        : 1                Group           : 1
=====
* indicates that the corresponding row element may have been truncated.
+ indicates inherited values
*A:Dut-A#
    
```

Table 278: LSP Template Output Fields

Label	Description
Name	Specifies the name.
Type	Specifies the type.
Admin State	Specifies the up or down administrative state.
No of LSPs	Specifies the number of LSPs.
LSP Templates	Specifies the number of LSP templates.
LSP Template	Specifies the name of the LSP template.
From	Specifies the from IP address.
Template ID	Specifies the template ID.
Default Path	Specifies the default path value.
Bandwidth	Specifies the bandwidth value in Mbps.
Hop Limit	Specifies the maximum number of hops.
CSPF	Specifies the enabled or disabled status for CSPF.
Use TE metric	Specifies the enabled or disabled status for use TE metric.
Include Groups	Specifies the included groups or none for no included groups.

Label	Description
Exclude Groups	Specifies the excluded groups or none for no excluded groups.
Record Route	Specifies the record route value.
Record Label	Specifies the record label value.
Retry Limit	Specifies the retry limit value.
Retry Timer	Specifies the retry timer value.
LSP Count	Specifies the LSP count.
Ref Count	Specifies the reference count number.
Load Bal Wt	Specifies the load balance weight value.
ClassForwarding	Specifies the enabled or disabled status for class forwarding.
VprnAutoBind	Specifies the enabled or disabled status for VPRN autobind.
IGP Shortcut	Specifies the enabled or disabled status for IGP shortcut.
IGP LFA	Specifies the enabled or disabled status for IGP LFA.
IGP Rel Metric	Specifies the enabled or disabled status for IGP Rel metric.
Metric	Specifies the metric value.
BGP Transport Tunn	Specifies the enabled or disabled status for BGP transport tunnels.
Entropy Label	Specifies the enabled or disabled status for entropy label.
PCE Report	Specifies the enabled or disabled status for PCE reports.
Admin Tags	Specifies the administrative tag names or none.
PCE Control	Specifies the enabled or disabled status for the PCE control.
FallbkPathComp	none — No fallback method is configured. local-cspf— Local CSPF fallback is configured.

## 14.81 Ispinfo

### Ispinfo

#### Syntax

**Ispinfo** [*isp-name*] [**detail**]

## Context

[\[Tree\]](#) (tools>dump>router>mpls lspinfo)

## Full Context

tools dump router mpls lspinfo

## Description

This command dumps MPLS LSP information.

## Parameters

### *lsp-name*

Specifies the LSP name, up to 64 characters.

### *detail*

Specifies detailed LSP information.

## Platforms

All

## Output

The following output is an example of a BFD session that is up (LSPS UP).

### Output Example

```
*A:Dut-B# tools dump router mpls lspinfo
LSP "lsp1" LspIdx 1 LspType Dynamic State LSPS_UP Flags 0x2000
NumPaths 3 NumSdps 0 NumCBFSdps 0 NumFltrEntries 0
HoldTimeRemaining 0secs ClasType 0 Metric 0 OperMetric 2000
LDPoSvp Include VprnAutoBind Include IgpShortCut Include BgpShortCut Include
BgpTransTunnel Include IpShCutTtlPropLocal TRUE IpShCutTtlPropTans TRUE
RelativeMetricOffset 2147483647 EntropyLbl inherit MTU 1500 LspAdminState :2
LspOperState : 2 lspRowStatus : 1
ClassForwarding: Disabled
BFD Enabled Template bfdTemp1 PingInterval 60 Failure-Action Failover
```

The following output is an example of a BFD session that is degraded (LSPS DEGRADED).

```
*A:Dut-B# /tools dump router mpls lspinfo "lsp1"
LSP "lsp1" LspIdx 1 LspType Dynamic State LSPS_DEGRADED Flags 0x2000
NumPaths 3 NumSdps 0 NumCBFSdps 0 NumFltrEntries 0
HoldTimeRemaining 0secs ClasType 0 Metric 0 OperMetric 2000
LDPoSvp Include VprnAutoBind Include IgpShortCut Include BgpShortCut Include
BgpTransTunnel Include IpShCutTtlPropLocal TRUE IpShCutTtlPropTans TRUE
RelativeMetricOffset 2147483647 EntropyLbl inherit MTU 1500 LspAdminState :2
LspOperState : 2 lspRowStatus : 1
ClassForwarding: Disabled
BFD Enabled Template bfdTemp1 PingInterval 60 Failure-Action Failover

Total Ingress LSP Count      : 1
```

The following output is an example of LSP Self-ping InProgress.

```
*A:Dut-C>config>router>mpls# /tools dump router mpls lspinfo "1" detail
LSP "1" LspIdx 1 LspType Dynamic State LSPS_UP Flags 0x2000
```

```

From :: To 10.20.1.6 AdminState Up OperState Up RowStatus Active
NumPaths 1 NumSdps 0 NumCBFSdps 0 NumFltrEntries 0
ActivePath 1::p(LspId 34306)
HoldTimeRemaining 0secs ClassType 0 Metric 0 OperMetric 20
LDPoSvP Include VprnAutoBind Include IgpShortCut Include BgpShortCut Include
BgpTransTunnel Include IpShCutTtlPropLocal TRUE IpShCutTtlPropTans TRUE
RelativeMetricOffset 2147483647 MTU 1500 InUseByLdp FALSE
EntropyLabel inherit OperEntropyLabel enable
ClassForwarding: Disabled
BFD Disabled UpdLspBfd No Template n/a PingInterval 60 FailureAction None
PCE Report: Disabled PCE Control: Disabled
Path Profile:
None
Admin Tags:
None
Lsp-self-ping: Config: inherit, Oper: Enabled, TimedOutCnt: 0
Path "p" Flags 0x0 LspId 34306 LspPathIndex 1 PathType Primary ActivePath Yes
RowStatus Active LastChange 000 00:00:09.730
AdminState Up OperState Up OperStateChange 000 00:00:17.760
TE Computed Hop List:
Hop[1] IngIp 10.20.1.3 IngLnkId 0 EgrIp 10.10.5.3 EgrLnkId 0 RtrId 10.20.1.3 Flag 0x0
Hop[2] IngIp 10.10.5.5 IngLnkId 0 EgrIp 10.10.10.5 EgrLnkId 0 RtrId 10.20.1.5 Flag 0x0
Hop[3] IngIp 10.10.10.6 IngLnkId 0 EgrIp 10.20.1.6 EgrLnkId 0 RtrId 10.20.1.6 Flag 0x0
LspPath FsmState LSP_PATH_S_UP Flags 0x0
RetryAttempts 0 RetryInterval 30 NextRetryIn 0secs
Class Type 0 SetupPri 7 HoldPri 0 Pref 0 HopLimit 255 BW 1Mbps
TotIgpCost 20 OperMetric 20 MTU 1500
BFD Disabled Template n/a PingInterval 60
Degraded No
Oper Values:
Class Type 0 SetupPri 7 HoldPri 0 HopLimit 255 BW 0Mbps
RecordRoute RecordLabel No Adspec
No PropagateAdminGroup Exclude 0x00000000 Include 0x00000000
No FRR
Metric 20 CSPF No Least Fill Intra-area
NegotiatedEntropyLabel Disabled
PCE-Computed No PCE-Reported No PCE-Controlled No
BFD State N/A
MBB is in progress -
Type Config Change LspId 34308 FsmState LSP_PATH_S_UP Flags 0x20
RetryAttempts 1 NextRetryIn 0secs CspfFailures 0
Started 2020/05/23 01:09:56.84 UTC HoldTimeRemaining 21secs
MBB Self-Ping: State InProgress OamSessId 1007 Started 2020/05/23 01:09:57.61 UTC
Remaining 22 secs

Total Ingress LSP Count : 1
    
```

The following output is an example of LSP Self-ping OK.

```

*A:Dut-C>config>router>mpls# /tools dump router mpls lspinfo "1" detail
LSP "1" LspIdx 1 LspType Dynamic State LSPS_UP Flags 0x2000
From :: To 10.20.1.6 AdminState Up OperState Up RowStatus Active
NumPaths 1 NumSdps 0 NumCBFSdps 0 NumFltrEntries 0
ActivePath 1::p(LspId 34308)
HoldTimeRemaining 0secs ClassType 0 Metric 0 OperMetric 20
LDPoSvP Include VprnAutoBind Include IgpShortCut Include BgpShortCut Include
BgpTransTunnel Include IpShCutTtlPropLocal TRUE IpShCutTtlPropTans TRUE
RelativeMetricOffset 2147483647 MTU 1500 InUseByLdp FALSE
EntropyLabel inherit OperEntropyLabel enable
ClassForwarding: Disabled
BFD Disabled UpdLspBfd No Template n/a PingInterval 60 FailureAction None
PCE Report: Disabled PCE Control: Disabled
Path Profile:
    
```

```

None
Admin Tags:
None
Lsp-self-ping: Config: inherit, Oper: Enabled, TimedOutCnt: 0
Path "p" Flags 0x0 LspId 34308 LspPathIndex 1 PathType Primary ActivePath Yes
RowStatus Active LastChange 000 00:00:42.760
AdminState Up OperState Up OperStateChange 000 00:00:50.790
TE Computed Hop List:
Hop[1] IngIp 10.20.1.3 IngLnkId 0 EgrIp 10.10.5.3 EgrLnkId 0 RtrId 10.20.1.3 Flag 0x0
Hop[2] IngIp 10.10.5.5 IngLnkId 0 EgrIp 10.10.10.5 EgrLnkId 0 RtrId 10.20.1.5 Flag 0x0
Hop[3] IngIp 10.10.10.6 IngLnkId 0 EgrIp 10.20.1.6 EgrLnkId 0 RtrId 10.20.1.6 Flag 0x0
LspPath FsmState LSP_PATH_S_UP Flags 0x0
RetryAttempts 0 RetryInterval 30 NextRetryIn 0secs
Class Type 0 SetupPri 7 HoldPri 0 Pref 0 HopLimit 255 BW 1Mbps
TotIgpCost 20 OperMetric 20 MTU 1500
BFD Disabled Template n/a PingInterval 60
Degraded No
Oper Values:
Class Type 0 SetupPri 7 HoldPri 0 HopLimit 255 BW 1Mbps
RecordRoute RecordLabel No Adspec
No PropagateAdminGroup Exclude 0x00000000 Include 0x00000000
No FRR
Metric 20 CSPF No Least Fill Intra-area
NegotiatedEntropyLabel Disabled
PCE-Computed No PCE-Reported No PCE-Controlled No
BFD State N/A
Self-Ping: State OK Ended 2020/05/23 01:10:16.63 UTC
Last MBB -
Type Config Change State Successful CspfFailures 0 FailCode noError
Started 2020/05/23 01:09:56.84 UTC
Ended 2020/05/23 01:10:16.63 UTC
Self-ping Started 2020/05/23 01:09:57.61 UTC
Self-ping Ended 2020/05/23 01:10:16.63 UTC
Pre-MBB IGP Cost 20
Pre-MBB Explicit Route -
[1] 10.10.5.5 Flags 0x0
[2] 10.10.10.6 Flags 0x0

Total Ingress LSP Count : 1
    
```

The following output is an example of LSP Self-Ping TimedOut.

```

*A:Dut-C>config>router>mpls# /tools dump router mpls lspinfo "1" detail
LSP "1" LspIdx 1 LspType Dynamic State LSPS_UP Flags 0x2000
From :: To 10.20.1.6 AdminState Up OperState Up RowStatus Active
NumPaths 1 NumSdps 0 NumCBFSdps 0 NumFltrEntries 0
ActivePath 1::p(LspId 34310)
HoldTimeRemaining 0secs ClassType 0 Metric 0 OperMetric 20
LDPoRsvp Include VprnAutoBind Include IgpShortCut Include BgpShortCut Include
BgpTransTunnel Include IpShCutTtlPropLocal TRUE IpShCutTtlPropTans TRUE
RelativeMetricOffset 2147483647 MTU 1500 InUseByLdp FALSE
EntropyLabel inherit OperEntropyLabel enable
ClassForwarding: Disabled
BFD Disabled UpdLspBfd No Template n/a PingInterval 60 FailureAction None
PCE Report: Disabled PCE Control: Disabled
Path Profile:
None
Admin Tags:
None
Lsp-self-ping: Config: inherit, Oper: Enabled, TimedOutCnt: 1
Path "p" Flags 0x0 LspId 34310 LspPathIndex 1 PathType Primary ActivePath Yes
RowStatus Active LastChange 000 00:00:37.200
AdminState Up OperState Up OperStateChange 000 00:06:25.530
    
```

```

TE Computed Hop List:
  Hop[1] IngIp 10.20.1.3 IngLnkId 0 EgrIp 10.10.5.3 EgrLnkId 0 RtrId 10.20.1.3 Flag 0x0
  Hop[2] IngIp 10.10.5.5 IngLnkId 0 EgrIp 10.10.10.5 EgrLnkId 0 RtrId 10.20.1.5 Flag 0x0
  Hop[3] IngIp 10.10.10.6 IngLnkId 0 EgrIp 10.20.1.6 EgrLnkId 0 RtrId 10.20.1.6 Flag 0x0
LspPath FsmState LSP_PATH_S_UP Flags 0x0
RetryAttempts 0 RetryInterval 30 NextRetryIn 0secs
Class Type 0 SetupPri 7 HoldPri 0 Pref 0 HopLimit 255 BW 2Mbps
TotIgpCost 20 OperMetric 20 MTU 1500
BFD Disabled Template n/a PingInterval 60
Degraded No
Oper Values:
  Class Type 0 SetupPri 7 HoldPri 0 HopLimit 255 BW 2Mbps
  RecordRoute RecordLabel No Adspec
  No PropagateAdminGroup Exclude 0x00000000 Include 0x00000000
  No FRR
  Metric 20 CSPP No Least Fill Intra-area
  NegotiatedEntropyLabel Disabled
  PCE-Computed No PCE-Reported No PCE-Controlled No
  BFD State N/A
Self-Ping: State TimedOut Ended 2020/05/23 01:16:07.61 UTC
Last MBB -
  Type Config Change State Successful CspfFailures 0 FailCode noError
  Started 2020/05/23 01:15:37.14 UTC
  Ended 2020/05/23 01:16:07.61 UTC
  Self-ping Started 2020/05/23 01:15:37.61 UTC
  Self-ping Ended 2020/05/23 01:16:07.61 UTC
  Pre-MBB IGP Cost 20
  Pre-MBB Explicit Route -
  [1] 10.10.5.5 Flags 0x0
  [2] 10.10.10.6 Flags 0x0

Total Ingress LSP Count      : 1
  
```

The following output is an example of LSP Self-Ping StartFailed.

```

*A:Dut-C>config>router>mpls# /tools dump router mpls lspinfo "3000" detail
LSP "3000" LspIdx 3000 LspType Dynamic State LSPS_UP Flags 0x2000
From :: To 10.20.1.6 AdminState Up OperState Up RowStatus Active
NumPaths 1 NumSdps 0 NumCBFSdps 0 NumFltrEntries 0
ActivePath 3000::p(LspId 32256)
HoldTimeRemaining 0secs ClassType 0 Metric 0 OperMetric 2000
LDPoRsvp Include VprnAutoBind Include IgpShortCut Include BgpShortCut Include
BgpTransTunnel Include IpShCutTtlPropLocal TRUE IpShCutTtlPropTans TRUE
RelativeMetricOffset 2147483647 MTU 1500 InUseByLdp FALSE
EntropyLabel inherit OperEntropyLabel enable
ClassForwarding: Disabled
BFD Disabled UpdLspBfd No Template n/a PingInterval 60 FailureAction None
PCE Report: Disabled PCE Control: Disabled
Path Profile:
  None
Admin Tags:
  None
Lsp-self-ping: Config: inherit, Oper: Enabled, TimedOutCnt: 0
Path "p" Flags 0x0 LspId 32256 LspPathIndex 3000 PathType Primary ActivePath Yes
RowStatus Active LastChange 000 00:00:15.940
AdminState Up OperState Up OperStateChange 000 00:01:19.970
TE Computed Hop List:
  Hop[1] IngIp 10.20.1.3 IngLnkId 0 EgrIp 10.10.5.3 EgrLnkId 0 RtrId 10.20.1.3 Flag 0x0
  Hop[2] IngIp 10.10.5.5 IngLnkId 0 EgrIp 10.10.10.5 EgrLnkId 0 RtrId 10.20.1.5 Flag 0x0
  Hop[3] IngIp 10.10.10.6 IngLnkId 0 EgrIp 10.20.1.6 EgrLnkId 0 RtrId 10.20.1.6 Flag 0x0
LspPath FsmState LSP_PATH_S_UP Flags 0x0
RetryAttempts 0 RetryInterval 30 NextRetryIn 0secs
Class Type 0 SetupPri 7 HoldPri 0 Pref 0 HopLimit 255 BW 2Mbps
  
```

```
TotIgpCost 2000 OperMetric 2000 MTU 1500
BFD Disabled Template n/a PingInterval 60
Degraded No
Oper Values:
  Class Type 0 SetupPri 7 HoldPri 0 HopLimit 255 BW 1Mbps
  RecordRoute RecordLabel No Adspec
  No PropagateAdminGroup Exclude 0x00000000 Include 0x00000000
  No FRR
  Metric 2000 CSPF No Least Fill Intra-area
  NegotiatedEntropyLabel Disabled
  PCE-Computed No PCE-Reported No PCE-Controlled No
  BFD State N/A
MBB is in progress -
  Type Config Change LspId 32258 FsmState LSP_PATH_S_UP Flags 0x20
  RetryAttempts 1 NextRetryIn 0secs CspfFailures 0
  Started 2020/05/23 01:27:20.41 UTC HoldTimeRemaining 1secs
  MBB Self-Ping: State StartFailed OamSessId 0 Started 2020/05/23 01:27:32.88 UTC
  Remaining 27 secs

Total Ingress LSP Count      : 1
```

The following output is an example of LSP Self-Ping OamNoRsrc.

```
*A:Dut-C>config>router>mpls# /tools dump router mpls lspinfo "5000" detail
LSP "5000" LspIdx 5000 LspType Dynamic State LSPS_UP Flags 0x2000
From :: To 10.20.1.6 AdminState Up OperState Up RowStatus Active
NumPaths 1 NumSdps 0 NumCBFSdps 0 NumFltrEntries 0
ActivePath 5000::p(LspId 61954)
HoldTimeRemaining 0secs ClassType 0 Metric 0 OperMetric 2000
LDPoSvp Include VprnAutoBind Include IgpShortCut Include BgpShortCut Include
BgpTransTunnel Include IpShCutTtlPropLocal TRUE IpShCutTtlPropTans TRUE
RelativeMetricOffset 2147483647 MTU 1500 InUseByLdp FALSE
EntropyLabel inherit OperEntropyLabel enable
ClassForwarding: Disabled
BFD Disabled UpdLspBfd No Template n/a PingInterval 60 FailureAction None
PCE Report: Disabled PCE Control: Disabled
Path Profile:
  None
Admin Tags:
  None
Lsp-self-ping: Config: inherit, Oper: Enabled, TimedOutCnt: 1
Path "p" Flags 0x0 LspId 61954 LspPathIndex 5000 PathType Primary ActivePath Yes
RowStatus Active LastChange 000 00:02:05.740
AdminState Up OperState Up OperStateChange 000 00:03:18.790
TE Computed Hop List:
  Hop[1] IngIp 10.20.1.3 IngLnkId 0 EgrIp 10.10.5.3 EgrLnkId 0 RtrId 10.20.1.3 Flag 0x0
  Hop[2] IngIp 10.10.5.5 IngLnkId 0 EgrIp 10.10.10.5 EgrLnkId 0 RtrId 10.20.1.5 Flag 0x0
  Hop[3] IngIp 10.10.10.6 IngLnkId 0 EgrIp 10.20.1.6 EgrLnkId 0 RtrId 10.20.1.6 Flag 0x0
LspPath FsmState LSP_PATH_S_UP Flags 0x0
RetryAttempts 0 RetryInterval 30 NextRetryIn 0secs
Class Type 0 SetupPri 7 HoldPri 0 Pref 0 HopLimit 255 BW 2Mbps
TotIgpCost 2000 OperMetric 2000 MTU 1500
BFD Disabled Template n/a PingInterval 60
Degraded No
Oper Values:
  Class Type 0 SetupPri 7 HoldPri 0 HopLimit 255 BW 2Mbps
  RecordRoute RecordLabel No Adspec
  No PropagateAdminGroup Exclude 0x00000000 Include 0x00000000
  No FRR
  Metric 2000 CSPF No Least Fill Intra-area
  NegotiatedEntropyLabel Disabled
  PCE-Computed No PCE-Reported No PCE-Controlled No
  BFD State N/A
```

```
Self-Ping: State OamNoRsrc Ended 2020/05/23 01:28:17.87 UTC
Last MBB -
  Type Config Change State Successful CspfFailures 0 FailCode noError
  Started 2020/05/23 01:27:22.57 UTC
  Ended 2020/05/23 01:28:17.87 UTC
  Self-ping Started 2020/05/23 01:27:45.86 UTC
  Self-ping Ended 2020/05/23 01:28:17.87 UTC
  Pre-MBB IGP Cost 2000
  Pre-MBB Explicit Route -
  [1] 10.10.5.5 Flags 0x0
  [2] 10.10.10.6 Flags 0x0

Total Ingress LSP Count : 1
```



# 15 m Commands

## 15.1 mac

mac

### Syntax

mac all | *ieee-address* | unknown

### Context

[\[Tree\]](#) (show>subscr-mgmt>errors mac)

### Full Context

show subscriber-mgmt errors mac

### Description

This command sorts all the subscriber errors by MAC address.

### Parameters

**all**

Shows all errors starting with the lowest MAC address.

***ieee-address***

Shows only the error of a specific MAC address.

**unknown**

Shows errors with unknown MAC addresses.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of subscriber management listed by MAC addresses.

### Output Example

```
*A:eng-BNG-2# show subscriber-mgmt errors mac all
=====
Subscriber management errors
=====
-----
MAC          : 00:00:10:10:12:13
-----
```

```

Time      : 2016/06/23 17:35:46.0
Service   : 1000
SAP       : 1/1/20:841
Error     : No Offer from DHCP server after Discover from DHCP client
Extra     : DHCPv4
Time      : 2016/06/23 17:35:16.0
Service   : 1000
SAP       : 1/1/20:841
Error     : No Offer from DHCP server after Discover from DHCP client
Extra     : DHCPv4
=====
    
```

[Table 279: Subscriber Management MAC Error Field Descriptions](#) describes subscriber management MAC error output fields.

*Table 279: Subscriber Management MAC Error Field Descriptions*

Field	Description
MAC	The MAC address associated with the error
Time	The time the error was reported
Service	The service ID
SAP	The SAP on which the error occurred
Error	The error that occurred on the MAC address
Extra	Extra information about the error that occurred

## mac

### Syntax

**mac** *mac-filter-id*

**mac** *mac-filter-id* **associations**

**mac** *mac-filter-id* [**type** *entry-type*] **counters** [**detail**]

**mac** *mac-filter-id* [**entry** *entry-id*] **effective-action** [{**ingress** | **egress**}]

**mac** *mac-filter-id* [**entry** *entry-id*] **effective-action** **router** [{**ingress** | **egress**}]

**mac** *mac-filter-id* [**entry** *entry-id*] **effective-action** **service** *service-id* [{**ingress** | **egress**}]

**mac** [*mac-filter-id*] **embedded** [**inactive**]

**mac** *mac-filter-id* **entry** *entry-id* [**counters**] [**detail**]

**mac** [**filter-type** *filter-type*]

**mac** *mac-filter-id* **type** *entry-type*

### Context

[\[Tree\]](#) (show>filter mac)

## Full Context

show filter mac

## Description

This command displays MAC filter information.

When **effective-action** is specified, this command displays what effectively happens to a packet that matches the criteria associated with the MAC filter policy.

## Parameters

### ***mac-filter-id***

Displays detailed information for the specified filter ID and its filter entries.

**Values** 1 to 65535

### **associations**

Appends information as to where the filter policy ID is applied to the detailed filter policy ID output.

### ***entry-type***

Specifies the type of filter entries as "fixed" or "embedded".

### **counters**

Displays counter information for the specified filter ID.

### **detail**

Displays detailed information.

### ***entry-id***

Displays information on the specified filter entry ID for the specified filter ID only.

**Values** 1 to 2097151

### **effective-action**

Displays the action that the system will effectively apply to the packet.

### **ingress**

Filters the output and only displays the information for filter policies applied on ingress.

### **egress**

Filters the output and only displays the information for filter policies applied on egress.

### **router**

Filters the output and only displays the information for that specific service ("Base" instance).

### ***service-id***

Filters the output and only displays the information for the specified service. The specified value must correspond to an existing service in which the filter has been applied.

### ***filter-type***

Specifies the type of filter entries as "config".

## Platforms

All

## Output

**No Parameters Specified** — A brief listing of MAC filters is produced when no parameters are specified; [Table 280: Filter MAC Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-C# show filter mac
=====
Configured Mac Filters                               Total:    1
=====
Filter-Id  Scope    Applied Description                                Type
-----
10         Template No                                           normal
=====
Num Mac filters: 1
=====
*A:Dut-C#
```

Table 280: Filter MAC Output Fields

Label	Description
Filter Id	The MAC filter ID
Scope	Template — the filter policy is of type Template
	Exclusive — the filter policy is of type Exclusive
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Description	The MAC filter policy description

**Filter ID Specified** — The following output is an example of MAC filter information when the filter ID is specified, and [Table 281: Filter MAC with Filter-ID Specified Output Fields](#) describes the fields. Detailed filter information for the filter ID and its entries is produced when the filter ID is specified.

### Output Example

```
=====
Mac Filter : 200
=====
Filter Id      : 200                Applied      : No
Scope         : Exclusive           D. Action    : Drop
Description    : Forward SERVER sourced packets
-----
Filter Match Criteria : Mac
-----
Entry         : 200                FrameType    : 802.2SNAP
Description    : Not Available
Src Mac       : 00:00:5a:00:00:00 ff:ff:ff:00:00:00
Dest Mac      : 00:00:00:00:00:00 00:00:00:00:00:00
Dot1p        : Undefined           Ethertype    : 802.2SNAP
```

```

DSAP      : Undefined          SSAP      : Undefined
Snap-pid  : Undefined          ESnap-oui-zero : Undefined
Match action : Forward
Ing. Matches : 0
Entry      : 300 (Inactive)    Egr. Matches : 0
Description : Not Available    FrameType   : Ethernet
Src Mac    : 00:00:00:00:00:00 00:00:00:00:00:00
Dest Mac   : 00:00:00:00:00:00 00:00:00:00:00:00
Dot1p     : Undefined          Ethertype   : Ethernet
DSAP      : Undefined          SSAP      : Undefined
Snap-pid  : Undefined          ESnap-oui-zero : Undefined
Match action : Default
Ing. Matches : 0
Egr. Matches : 0
=====
    
```

Table 281: Filter MAC with Filter-ID Specified Output Fields

Label	Description
MAC Filter Filter Id	The MAC filter policy ID
Scope	Template — the filter policy is of type Template
	Exclusive — the filter policy is of type Exclusive
Description	The MAC filter policy description
Applied	No — the filter policy ID has not been applied
	Yes — the filter policy ID is applied
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward
	Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Filter Match Criteria	MAC — indicates the filter is an MAC filter policy
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
Description	The filter entry description
FrameType	Ethernet — the entry ID match frame type is Ethernet IEEE 802.3
	Ethernet II — the entry ID match frame type is Ethernet Type II
Src MAC	The source MAC address and mask match criterion; when both the MAC address and mask are all zeros, no criterion specified for the filter entry

Label	Description
Dest MAC	The destination MAC address and mask match criterion; when both the MAC address and mask are all zeros, no criterion specified for the filter entry
Dot1p	The IEEE 802.1p value for the match criteria; undefined indicates no value is specified
Ethertype	The Ethertype value match criterion
DSAP	The DSAP value match criterion; undefined indicates no value specified
SSAP	SSAP value match criterion; undefined indicates no value specified
Snap-pid	The Ethernet SNAP PID value match criterion; undefined indicates no value specified
Esnap-oui-zero	Non-Zero — filter entry matches a non-zero value for the Ethernet SNAP OUI
	Zero — filter entry matches a zero value for the Ethernet SNAP OUI
	Undefined — no Ethernet SNAP OUI value specified
Match action	Default — the filter does not have an explicit forward or drop match action specified; if the filter entry ID indicates the entry is Inactive, the filter entry is incomplete, no action was specified
	Drop — packets matching the filter entry criteria will be dropped
	Forward — packets matching the filter entry criteria is forwarded
Ing. Matches	The number of ingress filter matches/hits for the filter entry
Egr. Matches	The number of egress filter matches/hits for the filter entry

**Filter Associations** — The associations for a filter ID will be displayed if the **associations** keyword is specified. The association information is appended to the filter information.

The following output is an example of MAC filter information when the associations keyword is specified, and [Table 282: Filter MAC Associations Output Fields](#) describes the fields.

**Output Example**

```
A:ALA-49# show filter mac 3 associations
=====
Mac Filter
=====
Filter ID      : 3                Applied       : Yes
Scope         : Template        Def. Action   : Drop
Entries       : 1
-----
Filter Association : Mac
-----
Service Id    : 1001            Type          : VPLS
```

```
- SAP          1/1/1:1001          (Egress)
=====
```

Table 282: Filter MAC Associations Output Fields

Label	Description
Filter Association	Mac — the filter associations displayed are for a MAC filter policy ID
Service Id	The service ID on which the filter policy ID is applied; the output also provides a list of service points where the filter has been applied
SAP	The Service Access Point or spoke/mesh SDP on which the filter policy ID is applied
Type	The type of service of the Service ID
(Ingress)	The filter policy ID is applied as an ingress filter policy on the interface
(Egress)	The filter policy ID is applied as an egress filter policy on the interface

**Filter Entry Counters Output** — When the **counters** keyword is specified, the filter entry output displays the filter matches/hit information. The following table describes the command output for the command.

```
A:ALA-49# show filter mac 8 counters
=====
Mac Filter
=====
Filter Id      : 8                               Applied       : Yes
Scope         : Template                         Def. Action   : Forward
Entries       : 2
Description   : Description for Mac Filter Policy id # 8
-----
Filter Match Criteria : Mac
-----
Entry         : 8                               FrameType     : Ethernet
Ing. Matches  : 80 pkts (5440 bytes)
Egr. Matches  : 62 pkts (3968 bytes)

Entry         : 10                              FrameType     : Ethernet
Ing. Matches  : 80 pkts (5440 bytes)
Egr. Matches  : 80 pkts (5120 bytes)
=====
```

Table 283: Filter MAC Counters Output Field Descriptions

Label	Description
Mac Filter Filter Id	The MAC filter policy ID

Label	Description
Scope	Template — the filter policy is of type Template Exclusive — the filter policy is of type Exclusive
Description	The MAC filter policy description
Applied	No — the filter policy ID has not been applied Yes — the filter policy ID is applied
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Filter Match Criteria	Mac — indicates the filter is an MAC filter policy
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified
FrameType	Ethernet — the entry ID match frame type is Ethernet IEEE 802.3 802.2LLC — the entry ID match frame type is Ethernet IEEE 802.2 LLC 802.2SNAP — the entry ID match frame type is Ethernet IEEE 802.2 SNAP Ethernet II — the entry ID match frame type is Ethernet Type II
Ing. Matches	The number of ingress filter matches/hits for the filter entry
Egr. Matches	The number of egress filter matches/hits for the filter entry

**Show Filter MAC Output (with effective-action specified)** — The following output is an example of MAC filter information when the **effective-action** keyword is specified. [Table 284: Filter MAC effective-action Output Fields](#) describes the command output fields.

If the main action (either primary or secondary) cannot be performed, a reason will be given. This will be displayed on the same line as the Effective Action. The reason codes as currently defined are:

- entry-default
- filter-default-action
- pbr-down-action-override
- action not supported on egress
- target does not exist

**Output Example**

```
show filter mac 1 effective-action
=====
Mac Filter
```



```

=====
Filter Id      : 1                               Applied      : Yes
Scope         : Template                       Def. Action  : Drop
Entries       : 1                               Type         : normal
Description   : (Not Specified)
-----
Entry         : 2
-----
Stickiness    : No
PBR Dwn Act Override: None
PBR Down Action : Drop (entry-default)

Configuration
Primary Action : Forward (SAP)
  Next Hop     : 1/1/3
  Service Id   : Not configured
Secondary Action : None

Status
Target status based on extended checks
  Primary Action : Target does not exist
  Secondary Action : None
Downloaded Action : Forward
Stickiness Timer : Not Running

Effective Action based on application context
Service Id     : 10                               Type         : VPLS
  Ingress
  Effective Action: Forward (target does not exist)
=====
    
```

Table 284: Filter MAC effective-action Output Fields

Label	Description
Filter Id	The MAC filter policy ID
Applied	No — the filter policy ID has not been applied Yes — the filter policy ID is applied
Scope	Template — the filter policy is of type Template Exclusive — the filter policy is of type Exclusive
Def. Action	Forward — the default action for the filter ID for packets that do not match the filter entries is to forward Drop — the default action for the filter ID for packets that do not match the filter entries is to drop
Entries	The number of entries configured in this filter ID
Type	The type of entries configures in this filter
Description	The MAC filter policy description
Entry	The filter entry ID; if the filter entry ID indicates the entry is (Inactive), then the filter entry is incomplete as no action has been specified

Label	Description
Stickiness	No — stickiness is not configured Yes — stickiness is configured
PBR Dwn Act Override	Indicates whether or not the action to take when the PBR target is down has been overridden
PBR Down Action	The action to take in case the target is down
Configuration	Section of the output providing information on the configured parameters
Primary Action	The configured action, if any; indented sub-labels in the show output provide configured parameters for this action
Secondary Action	The configured secondary action, if any; indented sub-labels in the show output provide configured parameters for this action
Status/Target status based on extended checks	Section of the output providing information on the operational status of certain parameters
Primary Action	The status of the target of the primary action, if configured, based on extended checks
Secondary Action	The status of the target of the secondary action, if configured, based on extended checks
Downloaded Action	The action downloaded by the CPM to the IOM
Stickiness Timer	The status of the stickiness timer, if any
Effective Action based on application context	Section of the output providing the effective action, in the context of services, that a packet matching the criteria will be subject to
Service Id	The service ID on which the filter policy ID is applied; the output also provides a list of service points where the filter has been applied
Type	The service type in which the service has been applied
Ingress/Egress	The direction in which the service has been applied
Effective Action	Indicates the effective action the packet will be subject to

## mac

### Syntax

**mac** *mac-filter-id* [**entry** *entry-id*] [{**ingress** | **egress**}]

## Context

[\[Tree\]](#) (clear>filter mac)

## Full Context

clear filter mac

## Description

Clears the counters associated with the entries of the specified MAC filter policy.

By default, the counters associated with each entry of the specified filter policy are all cleared. The scope of which counters are cleared can be narrowed using the command line parameters.

## Default

Clears all counters associated with each entry of the specified MAC filter policy.

## Parameters

### *mac-filter-id*

The MAC filter policy ID for which to clear the entry counters. Values can either be expressed as a decimal integer or as an ASCII string of up to 64 characters. The following values only shows decimal integer.

**Values** 1 to 65535

### *entry-id*

Specifies that only the counters associated with the specified filter policy entry will be cleared. The values are expressed as a decimal integer.

**Values** 1 to 2097151

### *ingress*

Specifies to only clear the ingress counters.

### *egress*

Specifies to only clear the egress counters.

## Platforms

All

mac

## Syntax

**mac** *mac-filter-id*

## Context

[\[Tree\]](#) (tools>dump>filter>resources mac)

## Full Context

```
tools dump filter resources mac
```

## Description

This command displays information about the specified MAC filter including resource utilization on CPM and IOM, the IOMs on which the filter is used, and the entries using the most resources.

## Parameters

### *mac-filter-id*

Specifies that only the filter resource utilization associated with this IPv6 filter will be displayed.

**Values** 1 to 65535

## Platforms

All

## Output

The following output is an example of MAC filter resource utilization information.

### Output Example

```
*A:Dut-C>tools>dump>filter>resources># mac 1
=====
Resource utilization details for Mac filter 1
=====
CPM entries used           : 1
CPM subentries used       : 1
TCAM entries used (per FlexPath) : 1
Associated with IOMs      : 1

-----
Largest 5 entries
-----
Entry ID                    Active          TCAM entries
                           (per FlexPath)
-----
1                            Yes             1
No more entries defined
-----
=====
```

## mac

## Syntax

```
mac mac-filter-id entry entry-id [interval seconds] [repeat repeat] [absolute | rate]
```

## Context

[\[Tree\]](#) (monitor>filter mac)

## Full Context

monitor filter mac

## Description

This command enables MAC filter monitoring. The statistical information for the specified MAC filter entry displays at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified MAC filter. The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *mac-filter-id*

Specifies the MAC filter policy ID.

**Values** *filter-id* | *filter-name*  
filter-id: 1 to 65535  
filter-name: 64 chars max

### *entry-id*

Displays information on the specified filter entry ID for the specified filter ID only.

**Values** 1 to 65535

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## Output

The following output is an example of filter mac information.

### Output Example

```
A:ALA-1>monitor>filter# mac 50 entry 10 interval 3 repeat 3 absolute
=====
Monitor statistics for Mac filter 50 entry 10
=====
At time t = 0 sec (Base Statistics)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 3 sec (Mode: Absolute)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 6 sec (Mode: Absolute)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 9 sec (Mode: Absolute)
-----
Ing. Matches: 0                               Egr. Matches   : 0
=====

A:ALA-1>monitor>filter# mac 50 entry 10 interval 3 repeat 3 rate
=====
Monitor statistics for Mac filter 50 entry 10
=====
At time t = 0 sec (Base Statistics)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 3 sec (Mode: Rate)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 6 sec (Mode: Rate)
-----
Ing. Matches: 0                               Egr. Matches   : 0
-----
At time t = 9 sec (Mode: Rate)
-----
Ing. Matches: 0                               Egr. Matches   : 0
=====
A:ALA-1>monitor>filter#
```

## mac

### Syntax

**mac** entry *entry-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>cpm-filter mac)

## Full Context

monitor cpm-filter mac

## Description

This command displays monitor command statistics for MAC filter entries.

## Parameters

### *entry-id*

Displays information on the specified filter entry ID for the specified filter ID only.

**Values** 1 to 2048

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

mac

## Syntax

**mac** *entry-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | *rate*]

## Context

[\[Tree\]](#) (monitor>management-access-filter mac)

## Full Context

monitor management-access-filter mac

## Description

This command monitors statistics for the MAF MAC filter entry.

## Parameters

### *entry-id*

Specifies an existing IP MAF entry ID.

**Values** 1 to 9999

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

mac

## Syntax

```
mac [hunt | detail] [rd rd] [next-hop next-hop] [mac-address mac-address] [community comm-id] [tag  
tag] [aspath-regex reg-exp]
```

## Context

[\[Tree\]](#) (show>router>bgp>routes>evpn mac)

## Full Context

```
show router bgp routes evpn mac
```

## Description

This command displays BGP-EVPN MAC routes.



## Parameters

### hunt

Displays entries for the specified route.

### detail

Displays detailed information.

### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### next-hop

Specifies the IPv4 or IPv6 BGP next-hop address.

**Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

### mac-address

Specifies the MAC address in xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx format.

### comm-id

Specifies the community ID, up to 72 characters.

**Values** *[as-num:comm-val | ext-comm | well-known-comm]*

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type:{ip-address:comm-val1 | as-number1:comm-val2 | as-number2:comm-val1}*

where:

- *as-number1* — 0 to 65535
- *comm-val1* — 0 to 65535
- **type** — target, origin
- *ip-address* — a.b.c.d
- *comm-val2* — 0 to 4294967295
- *as-number2* — 0 to 4294967295

- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** |

**tag**

Specifies the MAC route tag.

**Values** 0to 4294967295 | MAX-ET

**reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

**Platforms**

All

## 15.2 mac-filter

### mac-filter

**Syntax**

**mac-filter** [**entry** *entry-id*]

**Context**

[\[Tree\]](#) (show>system>security>cpm-filter mac-filter)

**Full Context**

show system security cpm-filter mac-filter

**Description**

This command displays CPM MAC filters.

**Parameters**

***entry-id***

Displays information about the specified entry.

**Values** 1 to 131072

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output is an example of CPU MAC filter information.

## Output Example

```
*B:bksim67# show system security cpm-filter mac-filter
=====
CPM Mac Filter (applied)
=====
Entry-Id  Dropped   Forwarded Description
-----
1          23002     47094
-----
Num CPM Mac filter entries: 1
=====
*B:bksim67#
```

## mac-filter

### Syntax

```
mac-filter [entry entry-id]
```

### Context

[\[Tree\]](#) (show>system>security>mgmt-access-filter mac-filter)

### Full Context

```
show system security management-access-filter mac-filter
```

### Description

This command displays management access MAC filters.

### Parameters

*entry-id*

Displays information about the specified entry.

**Values** 1 to 9999

### Platforms

All

### Output

The following output is an example of management access filter MAC filter information.

### Output Example

```
*B:bksim67# show system security management-access-filter mac-filter
=====
Mac Management Access Filter
=====
filter type   : mac
Def. Action   : permit
Admin Status  : enabled (no shutdown)
-----
```

```
Entry          : 1          Action          : deny
FrameType     : ethernet_II Svc-Id           : Undefined
Src Mac       : Undefined
Dest Mac      : Undefined
Dot1p         : Undefined   Ethertype       : Disabled
DSAP          : Undefined   SSAP           : Undefined
Snap-pid      : Undefined   ESnap-oui-zero : Undefined
cfm-opcode    : Undefined
Log           : disabled    Matches         : 0
=====
*B:bksim67#
```

## mac-filter

### Syntax

**mac-filter** [**entry** *entry-id*]

### Context

[\[Tree\]](#) (clear>cpm-filter mac-filter)

### Full Context

clear cpm-filter mac-filter

### Description

This command clears MAC filter statistics.

### Parameters

***entry-id***

Specifies a particular CPM MAC filter entry.

**Values** 1 to 2048

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## mac-filter

### Syntax

**mac-filter** *mac-filter-id*

### Context

[\[Tree\]](#) (tools>perform>filter mac-filter)

### Full Context

tools perform filter mac-filter

## Description

Commands in this context perform MAC filter operations.

## Parameters

### ***mac-filter-id***

Specifies a particular MAC filter ID or filter name.

**Values** *filter-id* | *filter-name*

### ***filter-id***

Specifies the MAC filter ID.

**Values** 1 to 65535

### ***filter-name***

Specifies name of the MAC filter, up to 64 characters.

## Platforms

All

## 15.3 mac-list

### mac-list

## Syntax

**mac-list** [*name*]

**mac-list** *name* **associations**

## Context

[\[Tree\]](#) (show>service mac-list)

## Full Context

show service mac-list

## Description

This command displays the configured MAC lists in the router and its associations to service objects.

## Parameters

### ***name***

Displays the MAC list name, up to 32 characters.

### **associations**

Displays the associated service objects.

## Platforms

All

## Output

The following output is an example of services associated so particular SAPs.

### Output Example

The following output is an example of MAC list.

```
A:admin@PE-2# show service mac-list
=====
MAC List Information
=====
MAC List Name                Num Macs      Last Change
-----
moving-macs-1                10           04/22/2020 09:45:34
-----
Number of Entries: 1
=====
```

The following output is an example of MAC list name.

```
A:admin@PE-2# show service mac-list "moving-macs-1"
=====
MAC List Mac Address Information
Description: List of macs allowed to move
=====
MAC Address                  MAC Mask      Last Change
-----
00:00:5e:00:00:00          ff:ff:ff:00:00:00  04/22/2020 09:46:14
00:01:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:57:33
00:02:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:57:37
00:03:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:57:40
00:04:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:57:45
00:05:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:57:50
00:06:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:57:54
00:07:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:58:02
00:08:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:58:09
00:09:5e:00:00:00          ff:ff:ff:ff:ff:ff  04/22/2020 09:58:12
-----
Number of Entries: 10
=====
```

The following output is an example of MAC list associations.

```
A:admin@PE-2# show service mac-list "moving-macs-1" associations
=====
Associated VPLS SAPs
-----
Service Id                  SAP
-----
3                            pxc-1.a:3
-----
Number of Entries: 1
-----
Associated VPLS spoke-sdp
-----
```

```

Service Id                sdpID
-----
Number of Entries: 0
-----

Associated VPLS mesh-sdp
-----
Service Id                sdpID
-----
Number of Entries: 0
-----

Associated VPLS split-horizon-group
-----
Service Id                Split Horizon Group
-----
Number of Entries: 0
-----

Associated PW-template
-----
PW-template Id
-----
Number of Entries: 0
-----
=====
    
```

**Table 285: Show Service MAC List Fields** describes show service MAC list output fields.

*Table 285: Show Service MAC List Fields*

Label	Description
MAC List Name	Displays the MAC list name.
Num Macs	Displays the number of MACs.
Last Change	Displays the date and time of the change.
Number of Entries	Displays the number of matching entries.
MAC Address	Displays the MAC address.
MAC Mask	Displays the MAC mask.
Service Id	Displays the service ID.
SAP	Displays the SAP name.

## 15.4 mac-move

### mac-move

#### Syntax

**mac-move**

#### Context

[\[Tree\]](#) (show>service>id mac-move)

#### Full Context

show service id mac-move

#### Description

This command displays MAC move related information about the service.

#### Platforms

All

#### Output

The following output is an example of service MAC move information.

#### Output Example

```
*A:ALA-2009>config>service>vpls>mac-move# show service id 500 mac-move
=====
Service Mac Move Information
=====
Service Id       : 500                Mac Move       : Enabled
Primary Factor   : 4                  Secondary Factor : 2
Mac Move Rate    : 2                  Mac Move Timeout : 10
Mac Move Retries : 3
-----
SAP Mac Move Information: 2/1/3:501
-----
Admin State      : Up                  Oper State     : Down
Flags            : RelearnLimitExceeded
Time to come up  : 1 seconds           Retries Left   : 1
Mac Move         : Blockable           Blockable Level : Tertiary
-----
SAP Mac Move Information: 2/1/3:502
-----
Admin State      : Up                  Oper State     : Up
Flags            : None
Time to RetryReset: 267 seconds        Retries Left   : none
Mac Move         : Blockable           Blockable Level : Tertiary
-----
SDP Mac Move Information: 21:501
-----
Admin State      : Up                  Oper State     : Up
Flags            : None
```



```

Time to RetryReset: never           Retries Left      : 3
Mac Move           : Blockable      Blockable Level   : Secondary
-----
SDP Mac Move Information: 21:502
-----
Admin State        : Up              Oper State        : Down
Flags              : RelearnLimitExceeded
Time to come up    : never           Retries Left      : none
Mac Move           : Blockable      Blockable Level   : Tertiary
=====
*A:ALA-2009>config>service>vpls>mac-move#
    
```

## 15.5 mac-protect

### mac-protect

#### Syntax

**mac-protect** [**implicit**]

#### Context

[\[Tree\]](#) (show>service>id mac-protect)

#### Full Context

show service id mac-protect

#### Description

This command displays MAC protect-related information about the service.

#### Parameters

**implicit**

Displays only the MAC addresses implicitly protected by the system.

#### Platforms

All

#### Output

The following output is an example of service MAC protect information.

#### Output Example

```

*A:ALA-48>show>service>id# mac-protect
=====
Protected MACs, Service 700
=====
ServId  MAC                Source-Identifier  Type/Age  Last Change
-----
700     ff:ff:ff:ff:ff:ff  not learned       n/a      n/a
-----
    
```

```
No. of MAC Entries: 1
=====
*A:ALA-48>show>service>id# mac-protect
```

## 15.6 mac-status

### mac-status

#### Syntax

**mac-status** [*mac ieee-address*] [*card slot-id*] [*pending*]

#### Context

[\[Tree\]](#) (tools>dump>service>id>fdb mac-status)

#### Full Context

tools dump service id fdb mac-status

#### Description

This command displays the status of MAC addresses within the service, displaying the line cards on which FDB entries are allocated for the MAC addresses (if a MAC address has been allocated an entry on all cards provisioned in the system, it is displayed as "All") and those for which there are pending FDB entry updates (allocate, displayed as "PendAlloc", or free, displayed as "PendFree") for each MAC address. The MAC address status is displayed per service or line card and for a single MAC address. In addition, only MAC addresses with pending updates can be displayed.

#### Parameters

##### *ieee-address*

The 48-bit MAC address for which the FDB entry will be displayed in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee and ff are hexadecimal numbers.

##### *slot-id*

The slot ID of the card in the chassis. The maximum slot ID is platform-dependent. See the hardware installation guides for more information.

##### *pending*

Displays only those MAC address with pending FDB entry line card updates (allocate or free).

#### Platforms

All

#### Output

## Output Example

```
*A:PE1# tools dump service id 1 fdb mac-status
=====
VPLS FDB MAC status at 01/31/2017 08:44:39
=====
MAC Address          Type                Status : Card list
-----
00:00:00:00:01:01   Select              Allocated : 5
00:00:00:00:01:02   Select              Allocated : 5
00:00:00:00:01:03   Global              Allocated : All
00:00:00:00:01:04   Global              Allocated : All
=====
*A:PE1#
```

## 15.7 mac-table

### mac-table

#### Syntax

```
mac-table [mac ieee-address] [class class] [next-index index] [detail]
```

#### Context

[\[Tree\]](#) (tools>dump>wlan-gw>lanext>bd mac-table)

#### Full Context

```
tools dump wlan-gw lanext bd mac-table
```

#### Description

This command dumps the specified MAC table entries for the specified HLE BD.

#### Parameters

##### *ieee-address*

Specifies the MAC address of the MAC table entry.

##### *class*

Specifies the source on which to filter the MAC table entries.

**Values** access, network, remote

##### *index*

Specify the **next-index** *index* parameter to display the next set of results. If there are more results than the current output, the additional results are indicated at the bottom of the current output.

**Values** 0 to 4294967295

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of MAC table information.

### Output Example

```
tools>dump>wlan-gw>lanext>bd# mac-table
=====
MATCHED 2 MAC ENTRIES ON SLOT #2 MDA #1
=====
UE-MAC          VLAN  BRIDGE-ID  DESCRIPTION          L2-SVC  L2-VLAN
TUNNEL  CLASS  TYPE      ROUTER      SRC-IP              DST-IP
ANCHOR
-----
AA:2B:9E:11:D1:6F 100   100        ESM-USER            N/A      N/A
2/1     ACCESS GRE      500              11.3.3.100
2/1/NAT-OUT-IP:2145.1 4.4.4.4
-----
02:DE:01:00:01:11 N/A    100        ESM-USER            N/A      N/A
2/1     NETWORK VXLAN 500              2.2.2.2
2/1/NAT-OUT-IP:2145.1 44.44.44.1
-----
=====
```

## 15.8 macsec

### macsec

#### Syntax

macsec

#### Context

[\[Tree\]](#) (clear macsec)

#### Full Context

clear macsec

#### Description

Commands in this context clear MACsec information.

#### Platforms

All

## macsec

### Syntax

macsec

### Context

[\[Tree\]](#) (show macsec)

### Full Context

show macsec

### Description

Commands in this context display MACsec information.

### Platforms

All

## macsec

### Syntax

macsec

### Context

[\[Tree\]](#) (show>router macsec)

### Full Context

show router macsec

### Description

This command displays router MACsec information.

### Platforms

All

### Output

The following output is an example of router MACsec information.

### Output Example

```
*A:Dut-C>config>router# show router macsec
=====
MACSec (Summary), Base
=====
Interface Name PortId/Sap  MACsec    Sub-port Encap- CA tags  CA-name
```

```

                                     port          match  In-clear
-----
MACsec_Dut_B_* 1/1/10:50  1/1/10   50      :50    0      dut_B_C_xpn_128_*
                                     1/1/10  1002   :*. *   2      dut_B_C_xpn_256_*
MACsec_Dut_B_* 1/1/10:51  1/1/10   51      :51    1      dut_B_C_xpn_128_*
                                     1/1/10  1002   :*. *   2      dut_B_C_xpn_256_*
=====
* indicates that the corresponding row element may have been truncated.

*A:Dut-C>config>router# show router "Base" interface "MACsec_Dut_B_C_Link_11_tag_50" macsec
=====
Interface MACsec_Dut_B_C_Link_11_tag_50 port/SapId 1/1/10:50 macsec
=====
MACsec port    Sub-port    Admin state Encap-match CA-name
-----
1/1/10         50          enabled    :50        dut_B_C_xpn_128_null_03
1/1/10         1002       enabled    :*. *      dut_B_C_xpn_256_2tags_1tag_01
=====

*A:Dut-C>config>router# show router "Base" interface "MACsec_Dut_B_C_Link_11_tag_51" macsec
=====
Interface MACsec_Dut_B_C_Link_11_tag_51 port/SapId 1/1/10:51 macsec
=====
MACsec port    Sub-port    Admin state Encap-match CA-name
-----
1/1/10         51          enabled    :51        dut_B_C_xpn_128_1tag_03
1/1/10         1002       enabled    :*. *      dut_B_C_xpn_256_2tags_1tag_01
=====
    
```

## 15.9 managed-hosts

### managed-hosts

#### Syntax

**managed-hosts type** {aaa | bonding | data-triggered | gtp} [ip *ip-address*] [mac *ieee-address*]

#### Context

[\[Tree\]](#) (show>service>id managed-hosts)

#### Full Context

show service id managed-hosts

#### Description

This command displays information about hosts that are not yet linked to an in-band control plane protocol, such as DHCP or DHCPv6. Examples include hosts installed by data-triggers and hosts installed by RADIUS.

## Parameters

### aaa

Displays information about managed hosts installed and removed only by RADIUS.

### bonding

Displays information about managed hosts installed in a connection bonding subscriber context.

### data-triggered

Displays information about managed hosts installed by data-triggers.

### gtp

Displays information about managed hosts installed via GTP access.

### ip-address

Displays information about a managed host with the specified IPv4 or IPv6 address.

### ieee-address

Displays information about a managed host with the specified MAC address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of managed host information.

### Output Example

```
# show service id 100 managed-hosts type data-triggered
=====
Managed data-triggered hosts
=====
IP address                               MAC address
-----
10.0.0.9/32                               fa:ac:a6:02:11:01
2001:a:b:5::1/128                         fa:ac:a6:02:11:01
-----
No. of Managed hosts: 2
=====
```

## managed-hosts

### Syntax

**managed-hosts type {data-triggered} [sap sap-id] [mac ieee-address] [ip ip-prefix[/prefix-length]] [port port-id]**

**managed-hosts type {data-triggered} all**

### Context

**[Tree]** (clear>service>id managed-hosts)

### Full Context

clear service id managed-hosts

### Description

This command deletes managed hosts.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 15.10 management

### management

#### Syntax

**management**

**management ftp**

**management grpc**

**management netconf**

**management ssh**

**management telnet**

**management telnet6**

#### Context

[\[Tree\]](#) (show>system>security management)

#### Full Context

show system security management

#### Description

This command displays the management server status.

#### Parameters

**ftp**

Displays the FTP server status.

**grpc**

Displays the gRPC server status.

**netconf**

Displays the NETCONF server status.



**ssh**

Displays the SSH server status.

**telnet**

Displays the Telnet server status.

**telnet6**

Displays the Telnetv6 server status.

**Platforms**

All

## 15.11 management-access-filter

### management-access-filter

**Syntax**

**management-access-filter**

**Context**

[\[Tree\]](#) (show>system>security management-access-filter)

**Full Context**

show system security management-access-filter

**Description**

Commands in this context display management access filter information for IP and MAC filters.

**Platforms**

All

### management-access-filter

**Syntax**

**management-access-filter**

**Context**

[\[Tree\]](#) (monitor management-access-filter)

**Full Context**

monitor management-access-filter

### Description

Commands in this context monitor management-access filters. These filters are configured in the **config>system>security>mgmt-access-filter** context.

### Platforms

All

## 15.12 management-interface

### management-interface

#### Syntax

**management-interface**

#### Context

[\[Tree\]](#) (clear>system management-interface)

#### Full Context

clear system management-interface

#### Description

This command clears the management interface information.

#### Platforms

All

### management-interface

#### Syntax

**management-interface**

#### Context

[\[Tree\]](#) (show>system management-interface)

#### Full Context

show system management-interface

#### Description

Commands in this context display management interface information.

## Platforms

All

## management-interface

## Syntax

**management-interface**

## Context

**[Tree]** (tools>perform>system management-interface)

## Full Context

tools perform system management-interface

## Description

This command enables tools for management interface.

## Platforms

All

## 15.13 manager

## manager

## Syntax

**manager all**

**manager** *manager-name*

## Context

**[Tree]** (clear>system>management-interface>remote-management manager)

## Full Context

clear system management-interface remote-management manager

## Description

This command clears and restarts the remote management manager connection process.

## Parameters

**all**

Clears the connection process for all managers.

***manager-name***

Specifies the configured name of the manager, up to 64 characters.

**Platforms**

All

## 15.14 manual

### manual

**Syntax**

**manual** *ring-index* **path** {**a** | **b**}

**Context**

[\[Tree\]](#) (tools>perform>eth-ring manual)

**Full Context**

tools perform eth-ring manual

**Description**

In the absence of a failure or FS, this command forces a block on the ring port where the command is issued.

**Parameters**

***ring-index***

Specifies the ring index.

**Values** 1 to 128

**path**

Displays information for a specific path.

**Values** a, b

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### manual

**Syntax**

**manual id** *tunnel-id*

**manual** *isp-name*

### Context

[\[Tree\]](#) (tools>perform>router>mpls>tp-tunnel manual)

### Full Context

tools perform router mpls tp-tunnel manual

### Description

This command performs a manual switchover of the MPLS-TP LSP from the active path to the protect path.

### Parameters

#### *tunnel-id*

Specifies the tunnel number of the MPLS-TP LSP.

**Values** 1 to 61440

#### *isp-name*

Specifies name of the MPLS-TP LSP, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 15.15 manual-export

**manual-export**

### Syntax

**manual-export**

### Context

[\[Tree\]](#) (tools>perform>cflowd manual-export)

### Full Context

tools perform cflowd manual-export

### Description

This command triggers the manual export operation. This command is only applicable if **export-mode** is configured as **manual**.

### Platforms

All

## 15.16 manual-switch-path

### manual-switch-path

#### Syntax

**manual-switch-path lsp** *lsp-name*

**no manual-switch-path lsp** *lsp-name*

**manual-switch-path sr-te-lsp** *sr-te-lsp-name*

**no manual-switch-path sr-te-lsp** *sr-te-lsp-name*

#### Context

[\[Tree\]](#) (tools>perform>router>mpls manual-switch-path)

#### Full Context

tools perform router mpls manual-switch-path

#### Description

This command forces a manual degraded state on the active primary path, which triggers a switchover to another best-preference non-degraded secondary path that is already up. Non-degraded standby paths are preferred over secondary paths. If non-degraded standby paths do not exist, a setup is triggered for secondary paths.

For LSPs, the **revert-timer** and **hold-timer** apply to any switchover triggered by the **manual-switch-path** command. For SR-TE LSPs, only the revert-timer applies to any switchover triggered by the **manual-switch-path sr-te-lsp** command. The revert timer is started in the case where both the primary and standby paths are initially degraded and the system is using a second secondary path, and the primary path then comes back up.

The revert timer is started only when switching from a non-degraded secondary or standby path to the primary path. If the active secondary or standby path is degraded and then the primary path comes up, the system does not start the revert timer because the intention is to move the LSP away from the degraded active path as quickly as possible.

The manually degraded state remains in effect if the path goes down or is resigned, either by make-before-break (MBB) or break-before-make (BBM). BBM applies regardless of whether the resignalling is due to a locally initiated change or through PCEP. To reset the manually degraded state, use the **no manual-switch-path** CLI command or the **delete manual-switch-path** MD-CLI command.

To revert to the primary path when the revert timer is configured prior to the expiry of the revert timer, use the following commands:

- **no manual-switch-path lsp** or **no manual-switch-path sr-te-lsp** to reset the manual degraded state on the primary path
- **tools perform router mpls revert lsp** to revert the LSP to the primary path
- **tools perform router mpls revert sr-te-lsp** to revert the SR-TE LSP to the primary path

## Parameters

### *lsp-name*

Specifies the LSP name, up to 64 characters.

### *sr-te-lsp-name*

Specifies the SR-TE LSP name, up to 64 characters.

## Platforms

All

## 15.17 map

map

### Syntax

map

map statistics

### Context

[\[Tree\]](#) (clear>nat map)

### Full Context

clear nat map

### Description

This command enables the clears mapping of address and port data.

### Platforms

VSR

map

### Syntax

map

### Context

[\[Tree\]](#) (show>service>nat map)

### Full Context

show service nat map

## Description

Commands in this context display MAP information.

## Platforms

VSR

## 15.18 map-domain

### map-domain

## Syntax

**map-domain**

**map-domain** *domain-name*

**map-domain** *domain-name* **mapping-rule** *map-rule-name*

**map-domain** *domain-name* **statistics**

## Context

[\[Tree\]](#) (show>service>nat>map map-domain)

## Full Context

show service nat map map-domain

## Description

This command displays the MAP domains configured in the system and displays whether the domain is instantiated (that is, shows the association with the routing context). It also provides information about the domain and the specific rules configured within the domain

## Parameters

### *domain-name*

Specifies the MAP domain name.

**Values** 32 chars maximum

### *map-rule-name*

Specifies the MAP rule name.

**Values** 32 chars maximum

### **mapping-rule**

Keyword that displays the router instances and/or subscriber profiles associated with the NAT policy.

### **statistics**

Keyword that displays statistics of the specified MAP domain.



## Platforms

VSR

## Output

The following output is an example of the **map-domain** command, and [Table 286: Map-Domain Output Fields](#) describes the fields.

### Output Example

```
*A:Dut-D>show>service>nat>map# show service nat map map-domain
=====
MAP domains
=====
Name                               Admin-state   Router
-----
AZ                                  in-service    221
AZb                                 in-service    N/A
-----
No. of domains: 2
=====
```

Table 286: Map-Domain Output Fields

Label	Description
Admin-state	Configured admin-state of the MAP domain. The state can be either <b>shutdown</b> or <b>no shutdown</b> .
Router	Specifies the routing context in which the MAP domain is instantiated. When set to "N/A", it indicates that the MAP domain is not instantiated in the VSR.

The following output is an example of the **map-domain domain-name** command, and [Table 287: Map-Domain <domain-name> Output Fields](#) describes the fields.

### Output Example

```
*A:Dut-D>show>service>nat>map# map-domain "AZ"
=====
MAP-T domain "AZ"
=====
Description                : bAAAA
Default Mapping Rule prefix : 1000::/4
MTU                         : 9212
TCP MSS adjust              : 0
IP fragmentation
  v6-frag-header            : enabled
Administrative state        : in-service
Router                      : 221
Last management change      : 07/14/2016 21:04:04
Mapping rule "rule A-11"
-----
Description                : basic mapping rule 11
Rule prefix                 : 2001:db8::/44
IPv4 prefix                 : 192.0.2.0/24
Embedded Address bits       : 12
PSID offset                 : 4
Address sharing ratio       : 0
```

```

No. of excluded ports      : 0
No. of ports per user     : 0
Administrative state      : out-of-service
Last management change    : 07/08/2016 01:15:12
Mapping rule "rule A-12"
-----
Description                : (Not Specified)
Rule prefix                : (Not Specified)
IPv4 prefix                : (Not Specified)
Embedded Address bits     : 0
PSID offset                : 6
Address sharing ratio     : 0
No. of excluded ports     : 0
No. of ports per user     : 0
Administrative state      : out-of-service
Last management change    : 07/08/2016 01:15:12
Mapping rule "rule A-13"
-----
Description                : basic mapping rule 11
Rule prefix                : 2001:db8::/44
IPv4 prefix                : 192.0.2.0/24
Embedded Address bits     : 9
PSID offset                : 15
Address sharing ratio     : 2
No. of excluded ports     : 2
No. of ports per user     : 32767
Administrative state      : in-service
Last management change    : 07/14/2016 21:11:43
=====
    
```

Table 287: Map-Domain <domain-name> Output Fields

Label	Description
Address sharing ratio	Specifies the number of CEs covered by this rule, that share the same IPv4 address, each with different PSID.
No. of excluded ports	Specifies the ports excluded from PSID, according to the configured PSID offset.
No. of ports per user	Specifies the number of PSID ports available to each user.

The following output is an example of the **map-domain** *domain-name* command, which shows details of the specific rule within a given MAP domain.

### Output Example

```

*A:Dut-D>show>service>nat>map# map-domain "AZ" mapping-rule "rule A-13"
=====
MAP-T domain "AZ"
=====
Description                : bAAAA
Default Mapping Rule prefix : 1000::/4
MTU                        : 9212
TCP MSS adjust             : 0
IP fragmentation
  v6-frag-header           : enabled
Administrative state      : in-service
Router                    : 221
Last management change    : 07/14/2016 21:04:04
    
```

```

Mapping rule "rule A-13"
-----
Description           : basic mapping rule 11
Rule prefix           : 2001:db8::/44
IPv4 prefix           : 192.0.2.0/24
Embedded Address bits : 9
PSID offset           : 15
Address sharing ratio : 2
No. of excluded ports : 2
No. of ports per user : 32767
Administrative state  : in-service
Last management change : 07/14/2016 21:11:43
=====
    
```

The following output is an example of the **map-domain statistics** command, which shows the forwarding statistics for a MAP-T domain, and [Table 288: Map-Domain Statistics Output Fields](#) describes the fields.

### Output Example

```

# show service nat map map-domain "AZ" statistics

=====
MAP domain "AZ"
=====
Upstream (IPv6->IPv4) forwarded packets      : 0
Upstream (IPv6->IPv4) forwarded octets       : 0
Upstream (IPv6->IPv4) dropped packets        : 0
Upstream (IPv6->IPv4) dropped octets         : 0
Upstream (IPv6->IPv4) dropped anti-spoof packets : 0
Upstream (IPv6->IPv4) dropped icmpv6 packets : 0
Upstream (IPv6->IPv4) dropped other packets  : 0
Upstream (IPv6->IPv4) dropped unknown protocol packets : 0
Upstream (IPv6->IPv4) fragmented packets     : 0
Upstream (IPv6->IPv4) icmpv6 node info packets : 0
Upstream (IPv6->IPv4) cpe icmpv6 error packets : 0
Upstream (IPv6->IPv4) intermediate icmpv6 error packets : 0
Downstream (IPv4->IPv6) forwarded packets    : 0
Downstream (IPv4->IPv6) forwarded octets     : 0
Downstream (IPv4->IPv6) dropped packets      : 0
Downstream (IPv4->IPv6) dropped octets       : 0
Downstream (IPv4->IPv6) dropped fragmented packets : 0
Downstream (IPv4->IPv6) dropped icmpv4 packets : 0
Downstream (IPv4->IPv6) dropped unknown protocol packets : 0
Downstream (IPv4->IPv6) fragmented packets   : 0
Downstream (IPv4->IPv6) need fragmentation packets : 0
Downstream (IPv4->IPv6) icmpv4 error packets : 0
Downstream (IPv4->IPv6) icmpv4 echo packets  : 0
=====
    
```

*Table 288: Map-Domain Statistics Output Fields*

Label	Description
Upstream (IPv6->IPv4) forwarded packets	Specifies the number of forwarded packets in the upstream direction within the MAP domain.
Upstream (IPv6->IPv4) forwarded octets	Specifies the number of forwarded octets in the upstream direction within the MAP domain.

Label	Description
Upstream (IPv6->IPv4) dropped packets	Specifies the number of dropped packets in the upstream direction within the MAP domain.
Upstream (IPv6->IPv4) dropped octets	Specifies the number of dropped octets in the upstream direction within the MAP domain.
Upstream (IPv6->IPv4) dropped anti-spoof packets	Specifies the number of packet drops due to antispoof failure
Upstream (IPv6->IPv4) dropped icmpv6 packets	Specifies the number of ICMPv6 drops due to truncated errors, antispoof ICMP failures, or malformed ICMPs
Upstream (IPv6->IPv4) dropped other packets	Specifies the number of packet drops due to unknown protocol (not TCP/UDP/ICMP)
Upstream (IPv6->IPv4) dropped unknown protocol packets	Specifies the number of all other drops that are not previously listed
Upstream (IPv6->IPv4) fragmented packets	Specifies the number of received fragments
Upstream (IPv6->IPv4) icmpv6 node info packets	Specifies the number of received ICMPV6 node info
Upstream (IPv6->IPv4) cpe icmpv6 error packets	Specifies the number of received ICMPV6 errors from the CPE
Upstream (IPv6->IPv4) intermediate icmpv6 error packets	Specifies the number of received ICMPV6 errors received from intermediate nodes between the BR and CPE
Downstream (IPv4->IPv6) forwarded packets	Specifies the number of forwarded packets in the downstream direction within the MAP domain.
Downstream (IPv4->IPv6) forwarded octets	Specifies the number of forwarded octets in the downstream direction within the MAP domain.
Downstream (IPv4->IPv6) dropped packets	Specifies the number of dropped packets in the downstream direction within the MAP domain.
Downstream (IPv4->IPv6) dropped octets	Specifies the number of dropped IP octets in the downstream direction within the MAP domain.
Downstream (IPv4->IPv6) dropped fragmented packets	Specifies the number of fragmentation required but the packet is dropped due to DF flag being set

Label	Description
Downstream (IPv4->IPv6) dropped icmpv4 packets	Specifies the total number of ICMPV4 drops
Downstream (IPv4->IPv6) dropped unknown protocol packets	Specifies the number of packet drops because of unknown protocol (not TCP/UDP/ICMP)
Downstream (IPv4->IPv6) fragmented packets	Specifies the number of received fragments
Downstream (IPv4->IPv6) need fragmentation packets	Specifies the number of frames for which IPv6 fragmentation is required (these frames can be received as packets or fragments)
Downstream (IPv4->IPv6) icmpv4 error packets	Specifies the number of ICMPV4 errors received
Downstream (IPv4->IPv6) icmpv4 echo packets	Specifies the number of ICMPV4 echoes received

## 15.19 map-to-phy-port

### map-to-phy-port

#### Syntax

**map-to-phy-port** {lag *lag-id* | eth-tunnel *tunnel-index*} {**isid** *isid* [**end-isid** *isid*] | **service** *service-id* | *svc-name* [**end-service** *service-id* | *svc-name*]} [**summary**]

#### Context

[\[Tree\]](#) (tools>dump map-to-phy-port)

#### Full Context

tools dump map-to-phy-port

#### Description

This command provides the ability to respond to a query to provide the link in a LAG/Ethernet tunnel (load sharing protection mode)/CCAG that is currently assigned to a given service-id or ISID.

## Parameters

### *lag-id*

Specifies the LAG ID.

**Values** 1 to 800

### *isid*

Specifies the ISID.

**Values** 0 to 16777215

### *service-id*

Specifies the service ID.

**Values** 1 to 2148278381, svc-name: 64 char max

### *tunnel-index*

Specifies the tunnel index.

**Values** 1 to 1024

### *summary*

Displays summary information.

## Platforms

All

## 15.20 mapping-server

### mapping-server

#### Syntax

**mapping-server** [**prefix** *ip-address*[/*mask*]] [**index** *index*] [**level** *level*] [**flag** {*s*}]

#### Context

[\[Tree\]](#) (show>router>isis mapping-server)

#### Full Context

show router isis mapping-server

#### Description

This command displays IS-IS mapping-server information.

## Parameters

### *ip-address[/mask]*

Specifies the IP address and mask of a prefix that has received a node-sid in a SID/Label binding TLV.

**Values** *ip-address*: **a.b.c.d.** (host bits must be 0)  
*mask*: **0 to 32**

### *index*

Specifies the node-sid index value for the generated SID/Label binding TLV.

**Values** 0 to 4294967295

**Default** none

### *level*

Specifies a match on the mapping server's own flooding scope for the generated SID/Label binding TLV.

**Values** 1, 2, 1/2

### *flag*

Specifies a match on the flooding scope of the generated SID/Label binding TLV.

**Values** *s* — Specifies to match on the S flag value of 1. A SID/Label Binding TLV with the S flag set is flooded across the entire IS-IS routing domain, except across another IS-IS instance. If the S flag is not set (value of zero), the SID/Label Binding TLV is not leaked between levels.

## Platforms

All

## Output

The following output is an example of mapping service information.

### Output Example

```
*A:Dut-C# show router isis mapping-server
=====
Rtr Base ISIS Instance 0 Mapping Server
=====
Index      Prefix           Range Flags Level
-----
1000      10.20.1.4/32    1    -    L1L2
1001      10.20.1.5/32    1    -    L1L2
1002      10.20.1.6/32    1    -    L1L2
-----
No. of Mapping Server Sid-Maps : 3
=====
```

## mapping-server

### Syntax

**mapping-server** [**prefix** *ip-address*[/*mask*]] [**index** *index*] [**scope** {**as** | **area** [*area-id*]}]

### Context

[\[Tree\]](#) (show>router>ospf mapping-server)

### Full Context

show router ospf mapping-server

### Description

This command displays OSPFv2 mapping server information.

### Parameters

#### *ip-address*[/*mask*]

Displays information associated with the specified IP address.

**Values** *ip-address*: a.b.c.d. (host bits must be 0)  
*mask*: 0 to 32

#### *index*

Specifies the Node-SID index value for the generated SID or label binding TLV.

**Values** 0 to 4294967295

#### *area-id*

Specifies the area ID.

**Values** *ip-address* | 0 to 4294967295

### Platforms

All

## 15.21 mappings

## mappings

### Syntax

**mappings** **svc** *service-id* [**sf-ip** *ip-address* | *ipv6-address*] [**esi** *esi*] [**state** *map-state*]



## Context

[Tree] (show>subscr-mgmt>isa-svc-chain mappings)

## Full Context

show subscriber-mgmt isa-service-chaining mappings

## Description

This command shows reachability details for the SF in the specified EVPN instance. This information is gathered from the EVPN routes learned from the peer.

## Parameters

### *service-id*

Displays information about the specified service ID.

**Values** 1 to 2147483647

### *ip-address*

Displays information about the specified IPv4 address up to 64 characters.

### *ipv6-address*

Displays information about the specified IPv6 address up to 64 characters.

### *esi*

Displays information about the specified the ESI value.

**Values** 10-byte Ethernet Segment Identifier  
00-11-22-33-44-55-66-77-88-99 with  
any of these separators ('-',':','')

### *map-state*

Displays map state status.

**Values** resolved, unresolved

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of service chaining mapping information.

### Output Example

```
show subscriber-mgmt isa-service-chaining mappings svc 111
=====
ISA Service Chaining - Mappings for EVPN 111
=====
IP-mappings
-----
MAC                Vni    Vtep
-----
160.0.0.7          00:00:01:00:00:01  1      5.20.1.12
```

```

170.0.0.7
      00:00:02:00:00:01  1      5.20.1.12
-----
ESI-mappings
              Vni      Vtep
-----
24:23:2c:2e:2f:36:2e:4d:1b:4c
              1      5.20.1.12
-----
No. of mappings: 3
    
```

Table 289: Service Chaining Mappings Field Descriptions

Label	Description
IP-mappings	The IP address
MAC	The MAC address of the IP mappings
Vni	The VXLAN network identifier
Vtep	The VXLAN tunnel endpoint
ESI-mappings	The Ethernet Segment Identifier MAC address
No. of mappings	The total number of mappings for the EVPN ID.

## 15.22 match-criteria-overload

### match-criteria-overload

#### Syntax

**match-criteria-overload**

**match-criteria-overload card** *slot-number* **fp** *fp-number*

**match-criteria-overload card** *slot-number* **fp** *fp-number* **network** *network-policy-id* **direction** *direction*

**match-criteria-overload card** *slot-number* **fp** *fp-number* **sap-egress** *policy-id*

**match-criteria-overload card** *slot-number* **fp** *fp-number* **sap-ingress** *policy-id*

#### Context

[\[Tree\]](#) (tools>dump>qos match-criteria-overload)

#### Full Context

tools dump qos match-criteria-overload

## Description

This command, when used without parameters, allows the operator to identify QoS match-criteria memory banks with one or more policies in overload in the system by slot number, FP number, type (IP-MAC or IPv6), SAP ingress, SAP egress, network, and direction (ingress or egress).

This command, when used with the **card** and **fp** parameters, lists the QoS policy with match criteria in overload on a specified FP when the optional parameters *slot-number* and *fp-number* are specified.

This command, when used with the **network**, **sap-egress**, or **sap-ingress** parameters, displays the match-criteria entries not programmed for a specified QoS policy due to an overload condition.

## Parameters

### **card slot-number**

Specifies the IOM slot number for the overload command.

**Values** 1 to 10

### **fp fp-number**

Specifies the FP number.

**Values** 1 to 8

### **network network-policy-id**

Specifies the network policy ID.

**Values** 1 to 65538

### **direction direction**

Specifies the memory bank ingress or egress direction.

**Values** ingress or egress

### **sap-egress policy-id**

Specifies the SAP policy ID.

**Values** 1 to 65535

### **sap-ingress policy-id**

Specifies the SAP policy ID.

**Values** 1 to 65535

## Platforms

All

## Output

The following output is an example of filter overload status.

### Output Example

```
*A:Dut# tools dump qos match-criteria-overload
=====
QoS Match Criteria Status Overload
```

```

=====
Slot FP Direction          Type
-----
1    1  Ingress             ip-mac
=====
    
```

The following output is an example with **card** and **fp** parameters only.

**Output Example**

```

*A:Dut# tools dump qos match-criteria-overload card 1 fp 1
=====
QoS Match Criteria Status Overload
=====
Slot FP Access/Network Direction Type Policy      # Entries
-----
1    1  Access              Ingress  ip    5          5
=====
    
```

The following output is an example with **card**, **fp**, **{network or sap-egress or sap-ingress}** parameters only.

**Output Example**

```

A:Dut# tools dump qos match-criteria-overload card 1 fp 1 sap-ingress 5
=====
QoS Sap Ingress Match Criteria Status Overload
=====
Slot FP Type Policy                      Entry
-----
1    1  IPv4  5                      1001
1    1  IPv4  5                      1002
=====
    
```

## 15.23 match-list

### match-list

**Syntax**

**match-list**

**Context**

[\[Tree\]](#) (show>filter match-list)

**Full Context**

show filter match-list

**Description**

Commands in this context display information for match lists used in filter policies (IOM/FP and CPM).

## Platforms

All

## match-list

## Syntax

**match-list**

## Context

[\[Tree\]](#) (show>qos match-list)

## Full Context

show qos match-list

## Description

Commands in this context display match-list information.

## Platforms

All

## 15.24 mc-ecmp-balance

## mc-ecmp-balance

## Syntax

**mc-ecmp-balance** [**detail**]

## Context

[\[Tree\]](#) (show>router>pim mc-ecmp-balance)

## Full Context

show router pim mc-ecmp-balance

## Description

This command displays multicast balance information.

## Parameters

**detail**

Displays detailed information.

## Platforms

All

## Output

The following output is an example of PIM mc-ecmp-balance information.

### Output Example

```
A:ALA-48>config>router>pim# show router pim mc-ecmp-balance
=====
PIM ECMP Balance
=====
MC-ECMP-Balance           : Disabled
Rebalance in progress     : No
Last Rebalance Time       : 11/13/2007 09:03:10
Rebalance Type            : Unknown
Optional Threshold Used   : 0
Mc Ecmp Balance Hold Time : None
=====
A:ALA-48>config>router>pim#
```

## 15.25 mc-ecmp-rebalance

### mc-ecmp-rebalance

#### Syntax

**mc-ecmp-rebalance** [*ecmp-opt-threshold*]

#### Context

[\[Tree\]](#) (tools>perform>router>pim mc-ecmp-rebalance)

#### Full Context

tools perform router pim mc-ecmp-rebalance

#### Description

This command triggers an immediate rebalance, regardless if the hold timer has triggered or if any changes have occurred.

#### Parameters

##### *ecmp-opt-threshold*

Forces a rebalance of all multicast streams with a priority equal or less than the specified value.

Specifying the value of 7 forces all multicast streams to be re-balanced regardless of the configured value.

**Values** 1 to 7

### Platforms

All

## 15.26 mc-endpoint

### mc-endpoint

#### Syntax

**mc-endpoint peer** *ip-address*

#### Context

[\[Tree\]](#) (tools>dump>redundancy>multi-chassis mc-endpoint)

#### Full Context

tools dump redundancy multi-chassis mc-endpoint

#### Description

This command dumps multi-chassis endpoint information.

#### Parameters

***ip-address***

Specifies the peer's IP address.

### Platforms

All

### mc-endpoint

#### Syntax

**mc-endpoint peer** *ip-address*

#### Context

[\[Tree\]](#) (tools>dump>redundancy>multi-chassis mc-endpoint)

#### Full Context

tools dump redundancy multi-chassis mc-endpoint

## Description

This command dumps multi-chassis endpoint information.

## Parameters

### *ip-address*

Specifies the peer's IP address.

## Platforms

All

## Output

The following output is an example of multi-chassis peer endpoint information.

### Output Example

```
*A:Dut-B# tools dump redundancy multi-chassis mc-endpoint peer 10.1.1.3
MC Endpoint Peer Info
  peer addr           : 10.1.1.3
  peer name           : Dut-C
  peer name refs      : 1
  src addr conf       : Yes
  source addr         : 10.1.1.2
  num of mcep         : 1
  num of non-mcep     : 0
  own sess num        : 58ba0d39
  mc admin state      : Up
  tlv own mc admin state : Up
  tlv peer mc admin state : Up
  reachable           : Yes

  own sys priority    : 50
  own sys id          : 00:03:fa:72:c3:c0
  peer sys priority   : 21
  peer sys id         : 00:03:fa:c6:31:f8
  master              : No

  conf boot timer     : 300
  boot timer active   : No
  conf ka intv        : 10
  conf hold on num of fail : 3
  tlv own ka intv     : 10
  tlv peer ka intv    : 10
  ka timeout tmr active : Yes
  ka timeout tmr intvl : 20
  ka timeout tmr time left : 4
  peer ka intv        : 10
  mc peer timed out   : No

  initial peer conf rx : Yes
  peer-mc disabled     : No
  initial peer conf sync : Yes
  peer conf sync       : Yes

  own passive mode    : Disable
  peer passive mode   : No

  retransmit pending  : No
  non-mcep retransmit pending : No
  retransmit intvl    : 5
```



```
last tx time      : 1437130
last rx time      : 1437156

own bfd           : Enable
peer bfd          : Enable
bfd vrtr if       : 2
bfd handle        : 1
bfd state         : 3
bfd code          : 0

*A:Dut-B#
```

## mc-endpoint

### Syntax

- mc-endpoint statistics**
- mc-endpoint peer [ip-address] statistics**
- mc-endpoint endpoint [mcep-id] statistics**
- mc-endpoint peer [ip-address]**

### Context

[\[Tree\]](#) (show>redundancy>multi-chassis mc-endpoint)

### Full Context

show redundancy multi-chassis mc-endpoint

### Description

This command displays multi-chassis endpoint information.

### Parameters

#### statistics

Displays the global statistics for the MC endpoint.

#### peer

Displays information for a single peer.

#### ip-address

Specifies the IP address of multi-chassis end-point peer.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x – [0 to FFFF] H
    - d – [0 to 255] D

### endpoint

Displays multi-chassis endpoint information.

### mcep-id

Specifies the multi-chassis endpoint.

**Values** 1 to 4294967295

## Platforms

All

## Output

The following output is an example of multi-chassis endpoint information.

### Output Example

```
*A:Dut-B# show redundancy multi-chassis mc-endpoint statistics
=====
Multi-Chassis Endpoint Global Statistics
=====
Packets Rx                               : 533
Packets Rx Keepalive                     : 522
Packets Rx Config                         : 3
Packets Rx Peer Config                   : 1
Packets Rx State                         : 7
Packets Dropped Keep-Alive Task          : 7
Packets Dropped Too Short                : 0
Packets Dropped Verify Failed            : 0
Packets Dropped Tlv Invalid Size         : 0
Packets Dropped Out Of Seq               : 0
Packets Dropped Unknown Tlv             : 0
Packets Dropped Tlv Invalid MC-Endpoint Id : 0
Packets Dropped MD5                      : 0
Packets Dropped Unknown Peer             : 0
Packets Dropped MC Endpoint No Peer      : 0
Packets Tx                               : 26099
Packets Tx Keepalive                     : 8221
Packets Tx Config                         : 2
Packets Tx Peer Config                   : 17872
Packets Tx State                         : 4
Packets Tx Failed                        : 0
=====
*A:Dut-B#
*A:Dut-B# show redundancy multi-chassis mc-endpoint peer 10.1.1.3 statistics
=====
Multi-Chassis MC-Endpoint Statistics
=====
Peer Addr                               : 10.1.1.3
-----
Packets Rx                               : 597
Packets Rx Keepalive                     : 586
Packets Rx Config                         : 3
Packets Rx Peer Config                   : 1
Packets Rx State                         : 7
Packets Dropped State Disabled           : 0
Packets Dropped Packets Too Short        : 0
Packets Dropped Tlv Invalid Size         : 0
Packets Dropped Tlv Invalid LagId        : 0
Packets Dropped Out of Seq               : 0
```

```
Packets Dropped Unknown Tlv      : 0
Packets Dropped MD5              : 0
Packets Tx                       : 636
Packets Tx Keepalive             : 600
Packets Tx Peer Config           : 30
Packets Tx Failed                : 0
Packets Dropped No Peer          : 0
=====
*A:Dut-B#
*A:Dut-B# show redundancy multi-chassis mc-endpoint endpoint 1 statistics
=====
Multi-Chassis Endpoint Statistics
=====
MC-Endpoint Id 1
=====
Packets Rx Config                : 3
Packets Rx State                 : 7
Packets Tx Config                : 2
Packets Tx State                 : 4
Packets Tx Failed                : 0
=====
Number of Entries 1
=====
```

## mc-endpoint

### Syntax

**mc-endpoint endpoint** [*mcep-id*] **statistics**

**mc-endpoint statistics**

**mc-endpoint peer** [*ip-address*] **statistics**

### Context

[\[Tree\]](#) (clear>redundancy>multi-chassis mc-endpoint)

### Full Context

clear redundancy multi-chassis mc-endpoint

### Description

This command clears multi-chassis endpoint statistics.

### Parameters

#### *mcep-id*

Clears information for the specified multi-chassis endpoint ID.

**Values** 1 to 4294967295

#### *ip-address*

Clears information for the specified peer IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x – [0 to FFFF] H
    - d – [0 to 255] D

#### statistics

Clears statistics for this multi-chassis endpoint.

#### Platforms

All

## 15.27 mc-ipsec

### mc-ipsec

#### Syntax

**mc-ipsec peer** *ip-address* **domain** *ipsec-domain-id*  
**mc-ipsec peer** *ip-address* **tunnel-group** *tunnel-group-id*  
**mc-ipsec peer** *ip-address*

#### Context

[\[Tree\]](#) (show>redundancy>multi-chassis mc-ipsec)

#### Full Context

show redundancy multi-chassis mc-ipsec

#### Description

This command displays the 7750 SR IPsec multi-chassis states. Optionally, only the state of the specified tunnel-group is displayed.

#### Parameters

***ipsec-domain-id***

Specifies the IPsec domain ID.

***ip-address***

Specifies the peer address.

***tunnel-group-id***

Specifies the tunnel-group.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

Table 290: Show MC-IPsec Peer Output Fields describes **show redundancy multi-chassis mc-ipsec** output fields.

Table 290: Show MC-IPsec Peer Output Fields

Label	Description
Peer Name	The name of the peer.
Peer Addr	The IP address of the peer.
Keep Alive Intvl	The interval at which keepalive messages are exchanged.
Hold on Nbr Fail	The number of keep-alives lost before declaring the peer as failed to reach.
Discovery Intvl	The duration of the discovery interval.
Discovery Boot Intvl	The duration of the discovery boot interval.
BFD	Bi-directional forward enabled or disabled.
Last update	The date and time of the last update.
ID	The tunnel group table ID.
Peer Group	The peer group ID.
Priority	The priority for the IPsec domain.
Admin State	The administrative state of the tunnel group.
Mastership/Master State	The current mastership state.
Protection Status	Displays <b>nominal</b> or <b>notReady</b> .  <b>notReady</b> means the system is not ready for a switchover. There could be major traffic impact if switchover happens in the case of notReady.  <b>nominal</b> means the tunnel-group is in a better situation to switchover than notReady. However, there still might be traffic impact.
Installed	The number of tunnels that have been successfully installed on MS-ISA.
Installing	The number of tunnels that are being installed on MS-ISA.

Label	Description
Awaiting Config	The number of synchronized tunnels that do not have a corresponding configuration ready.
Failed	The number of tunnels that failed to be installed on MS-ISA.
Active Tunnel-Group	The specific active tunnel group.
Peer Ex Tnl Grp	The external tunnel group.
Priority	The priority of the tunnel-group
Oper State	The operational state
Installed	The number of tunnels that have been successfully installed
Installing	The number of tunnels that are being installed
Awaiting Config	The number of synchronized tunnels that do not have a corresponding configuration ready
Failed	The number of tunnels that failed to be installed

### Output Example

```

show redundancy multi-chassis mc-ipsec peer 10.2.2.2
=====
Multi-Chassis MC-IPsec
=====
Peer Name      : (Not Specified)
Peer Addr     : 10.2.2.2
Keep Alive Intvl: 1.0 secs           Hold on Nbr Fail      : 3
Discovery Intvl : 300 secs           Discovery Boot Intvl  : 300 secs
BFD           : Disable
Last update    : 09/27/2012 00:44:23

=====
Multi-Chassis IPsec Multi Active Tunnel-Group Table
=====
ID           Peer Group   Priority  Admin State  Mastership
-----
1            2            100      Up            standby
-----
Multi Active Tunnel Group Entries found: 1
=====

show redundancy multi-chassis mc-ipsec peer 10.2.2.2 tunnel-group 1
=====
Multi-Chassis MC-IPsec Multi Active Tunnel-Group: 1
=====
Peer Ex Tnl Grp : 2                Priority           : 100
Master State    : standby           Protection Status  : nominal
Admin State     : Up                Oper State        : Up
=====
Multi-Chassis Tunnel Statistics
=====
                                Static           Dynamic
    
```

```
-----
Installed           1           0
Installing          0           0
Awaiting Config    0           0
Failed             0           0
=====
```

## mc-ipsec

### Syntax

**mc-ipsec peer** *ip-address* **tunnel-group** *tunnel-group-id*  
**mc-ipsec peer** *ip-address*

### Context

[\[Tree\]](#) (show>redundancy>multi-chassis mc-ipsec)

### Full Context

show redundancy multi-chassis mc-ipsec

### Description

This command displays the 7750 SR IPsec multi-chassis states. Optionally, only state of specified tunnel-group will be displayed.

### Parameters

#### *ip-address*

Specifies the peer address.

#### *tunnel-group-id*

Specifies the tunnel-group.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

[Table 291: Show MC-IPsec Peer Output Fields](#) describes show **redundancy multi-chassis mc-ipsec** output fields.

*Table 291: Show MC-IPsec Peer Output Fields*

Label	Description
Admin State	Displays the admin state of mc-ipsec.
Mastership/Master State	Displays the current MIMP state.
Protection Status	Displays <b>nominal</b> or <b>notReady</b> .

Label	Description
	<p><b>notReady</b> means the system is not ready for a switchover. There could be major traffic impact if switchover happens in case of not Ready.</p> <p><b>nominal</b> means the tunnel-group is in a better situation to switchover than notReady. However there still might be traffic impact.</p>
Installed	Displays the number of tunnels that has been successfully installed on MS-ISA
Installing	Displays the number of tunnels that are being installed on MS-ISA.
Awaiting Config	Displays the number of synced tunnels that do not have corresponding configuration ready
Failed	Displays the number of tunnels that failed to be installed on MS-ISA.

### Output Example

```

show redundancy multi-chassis mc-ipsec peer 10.2.2.2
=====
Multi-Chassis MC-IPsec
=====
Peer Name      : (Not Specified)
Peer Addr     : 10.2.2.2
Keep Alive Intvl: 1.0 secs      Hold on Nbr Fail      : 3
Discovery Intvl : 300 secs      Discovery Boot Intvl  : 300 secs
BFD           : Disable
Last update    : 09/27/2012 00:44:23

=====
Multi-Chassis IPsec Multi Active Tunnel-Group Table
=====
ID           Peer Group   Priority  Admin State  Mastership
-----
1            2            100      Up            standby
-----
Multi Active Tunnel Group Entries found: 1
=====

show redundancy multi-chassis mc-ipsec peer 10.2.2.2 tunnel-group 1
=====
Multi-Chassis MC-IPsec Multi Active Tunnel-Group: 1
=====
Peer Ex Tnl Grp : 2              Priority           : 100
Master State    : standby        Protection Status  : nominal
Admin State     : Up             Oper State        : Up
=====
Multi-Chassis Tunnel Statistics
=====
-----
                        Static           Dynamic
-----
Installed            1                0
    
```



```
Installing          0          0
Awaiting Config    0          0
Failed             0          0
=====
```

## mc-ipsec

### Syntax

**mc-ipsec**

### Context

[\[Tree\]](#) (tools>perform>redundancy>multi-chassis mc-ipsec)

### Full Context

tools perform redundancy multi-chassis mc-ipsec

### Description

Commands in this context provide 7750 SR mc-ipsec tools.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 15.28 mc-lag

## mc-lag

### Syntax

**mc-lag peer** *ip-address* [**lag** *lag-id*]

**mc-lag** [**peer** *ip-address* [**lag** *lag-id*]] **statistics**

### Context

[\[Tree\]](#) (show>redundancy>multi-chassis mc-lag)

### Full Context

show redundancy multi-chassis mc-lag

### Description

This command displays multi-chassis LAG information.

## Parameters

### *lag-id*

Shows information for the specified LAG identifier.

**Values** 1 to 800

### *ip-address*

Shows peer information about the specified IP address.

**Values** ipv4-address: a.b.c.d  
 ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x – [0 to FFFF] H
- d – [0 to 255] D

### *statistics*

Displays multi-chassis statistics.

## Platforms

All

## Output

See the following sections for show command output:

- [MC-Lag Peer Output Example](#)
- [MC-Lag Peer Statistics Output Example](#)

The following output is an example of mc-lag peer information, and [Table 292: Redundancy Multi-chassis MC-Lag Peer Field Descriptions](#) describes the output fields.

### MC-Lag Peer Output Example

```
A:subscr_mgt# show redundancy multi-chassis mc-lag peer 10.10.10.30
=====
Multi-Chassis MC-Lag Peer 10.10.10.30
=====
Last Changed      : 01/23/2007 18:20:13
Admin State      : Up
Oper State       : Up
KeepAlive        : 10 deci-seconds
Hold On Ngbr Failure : 3
-----
Lag Id Lacp Key Remote Lag Id System Id          Sys Prio Last Changed
-----
1      1      1      00:00:00:00:00:01  1      01/23/2007 18:20:13
2      2      2      00:00:00:00:00:02  2      01/24/2007 08:53:48
-----
Number of LAGs : 2
=====
A:subscr_mgt#
```

```
A:subscr_mgt# show redundancy multi-chassis mc-lag peer 10.10.10.30 lag 1
=====
Multi-Chassis MC-Lag Peer 10.10.10.30
```

```

=====
Last Changed      : 01/23/2007 18:20:13
Admin State      : Up
Oper State        : Up
KeepAlive         : 10 deci-seconds
Hold On Ngbr Failure : 3
-----
Lag Id Lacp Key Remote Lag Id System Id          Sys Prio Last Changed
-----
1      1      1              00:00:00:00:00:01      1          01/23/2007 18:20:13
-----
Number of LAGs : 1
=====
A:subscr_mgt#
    
```

Table 292: Redundancy Multi-chassis MC-Lag Peer Field Descriptions

Label	Description
Last Changed	Displays date and time of the last mc-lag peer.
Admin State	Displays the administrative state of the mc-lag peer.
Oper State	Displays the operation state of the mc-lag peer.
KeepAlive	Displays the length of time to keep alive the mc-lag peer.
Hold On Ngbr Failure	Specifies how many "keepalive" intervals the standby SR will wait for packets from the active node before assuming a redundant-neighbor node failure.

The following output is an example of multi-chassis mc-lag peer statistics information, and [Table 293: Redundancy Multi-chassis MC-Lag Peer Statistics Field Descriptions](#) describes the output fields.

### MC-Lag Peer Statistics Output Example

```

A:subscr_mgt# show redundancy multi-chassis mc-lag statistics
=====
Multi-Chassis Statistics
=====
Packets Rx              : 52535
Packets Rx Keepalive    : 52518
Packets Rx Config       : 2
Packets Rx Peer Config  : 4
Packets Rx State        : 6
Packets Dropped KeepaliveTask : 0
Packets Dropped Packet Too Short : 0
Packets Dropped Verify Failed : 0
Packets Dropped Tlv Invalid Size : 0
Packets Dropped Out of Seq : 0
Packets Dropped Unknown Tlv : 0
Packets Dropped Tlv Invalid LagId : 0
Packets Dropped MD5     : 0
Packets Dropped Unknown Peer : 0
Packets Tx              : 52583
Packets Tx Keepalive    : 52519
Packets Tx Config       : 2
Packets Tx Peer Config  : 54
Packets Tx State        : 8
Packets Tx Failed       : 0
=====
A:subscr_mgt#
    
```

```

B:Dut-B# show redundancy multi-chassis mc-lag peer 10.10.10.2 statistics
=====
Multi-Chassis Statistics, Peer 10.10.10.2
=====
Packets Rx                : 231
Packets Rx Keepalive     : 216
Packets Rx Config        : 1
Packets Rx Peer Config   : 2
Packets Rx State         : 12
Packets Dropped State Disabled : 0
Packets Dropped Packets Too Short : 0
Packets Dropped Tlv Invalid Size : 0
Packets Dropped Tlv Invalid LagId : 0
Packets Dropped Out of Seq : 0
Packets Dropped Unknown Tlv : 0
Packets Dropped MD5      : 0
Packets Tx                : 235
Packets Tx Keepalive     : 216
Packets Tx Peer Config   : 3
Packets Tx Failed        : 0
=====
B:Dut-B#
    
```

Table 293: Redundancy Multi-chassis MC-Lag Peer Statistics Field Descriptions

Label	Description
Packets Rx	Indicates the number of MC-Lag packets received from the peer.
Packets Rx Keepalive	Indicates the number of MC-Lag keepalive packets received from the peer.
Packets Rx Config	Indicates the number of received MC-Lag configured packets from the peer.
Packets Rx Peer Config	Indicates the number of received MC-Lag packets configured by the peer.
Packets Rx State	Indicates the number of MC-Lag "lag" state packets received from the peer.
Packets Dropped State Disabled	Indicates the number of packets that were dropped because the peer was administratively disabled.
Packets Dropped Packets Too Short	Indicates the number of packets that were dropped because the packet was too short.
Packets Dropped Tlv Invalid Size	Indicates the number of packets that were dropped because the packet size was invalid.
Packets Dropped Tlv Invalid LagId	Indicates the number of packets that were dropped because the packet referred to an invalid or non multi-chassis lag.
Packets Dropped Out of Seq	Indicates the number of packets that were dropped because the packet size was out of sequence.

Label	Description
Packets Dropped Unknown Tlv	Indicates the number of packets that were dropped because the packet contained an unknown TLV.
Packets Dropped MD5	Indicates the number of packets that were dropped because the packet failed MD5 authentication.
Packets Tx	Indicates the number of packets transmitted from this system to the peer.
Packets Tx Keepalive	Indicates the number of keepalive packets transmitted from this system to the peer.
Packets Tx Peer Config	Indicates the number of configured packets transmitted from this system to the peer.
Packets Tx Failed	Indicates the number of packets that failed to be transmitted from this system to the peer.

## mc-lag

### Syntax

**mc-lag** [**peer** *ip-address* [**lag** *lag-id*]]

### Context

[\[Tree\]](#) (clear>redundancy>multi-chassis mc-lag)

### Full Context

clear redundancy multi-chassis mc-lag

### Description

This command clears multi-chassis Link Aggregation Group (LAG) information.

### Parameters

#### *ip-address*

Clears the specified address of the multi-chassis peer.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x – [0 to FFFF] H
    - d – [0 to 255] D

### *lag-id*

Clears the specified LAG on this system.

**Values** 1 to 200

### Platforms

All

## 15.29 mc-ring

### mc-ring

#### Syntax

**mc-ring**

**mc-ring peer** *ip-address* [**ring** *sync-tag*]

#### Context

[\[Tree\]](#) (tools>dump>redundancy>multi-chassis mc-ring)

#### Full Context

tools dump redundancy multi-chassis mc-ring

#### Description

This command dumps multi-chassis ring information.

#### Parameters

##### *ip-address*

Specifies the peer IP address.

##### *sync-tag*

Specifies the ring's synchronization tag created in the **config>redundancy>mc>peer>mcr> ring** context. The tag can be up to 32 characters.

### Platforms

All

### mc-ring

#### Syntax

**mc-ring peer** *ip-address* **statistics**

**mc-ring peer** *ip-address* [**ring** *sync-tag* [**detail** | **statistics**]]

**mc-ring peer** *ip-address* **ring** *sync-tag* **ring-node** [*ring-node-name* [**detail** | **statistics**] ]  
**mc-ring global-statistics**

## Context

[\[Tree\]](#) (show>redundancy>multi-chassis mc-ring)

## Full Context

show redundancy multi-chassis mc-ring

## Description

This command displays multi-chassis ring information.

## Parameters

### *ip-address*

Specifies the address of the multi-chassis peer to display.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF] H
    - d: [0 to 255] D

### *sync-tag*

Specifies a synchronization tag to be displayed that was used while synchronizing this port with the multi-chassis peer up to 32 characters.

### *ring-node-name*

Specifies a ring-node name up to 32 characters.

### **global-statistics**

Displays global statistics for the multi-chassis ring.

### **detail**

Displays detailed peer information for the multi-chassis ring.

## Platforms

All

## Output

See the following output examples:

- [Output Example: show redundancy multi-chassis mc-ring peer <ip-address> ring <sync-tag> detail](#)
- [Output Fields: show redundancy multi-chassis mc-ring peer <ip-address> ring](#)
- [Output Example: show redundancy multi-chassis mc-ring peer <ip-address> statistics](#)
- [Output Fields: show redundancy multi-chassis mc-ring peer <ip-address> statistics](#)

- [Output Fields: show redundancy multi-chassis mc-ring global-statistics](#)
- [Output Fields: show redundancy multi-chassis mc-ring ring-node](#)
- [Output Example: show redundancy multi-chassis mc-ring global-statistics](#)

**Output Example: show redundancy multi-chassis mc-ring peer <ip-address> ring <sync-tag> detail**

```
*A:ALA-48# show redundancy multi-chassis mc-ring peer 10.0.0.2 ring ring11 detail
=====
Multi-Chassis MC-Ring Detailed Information
=====
Peer           : 10.0.0.2
Sync Tag       : ring11
Port ID        : 1/1/3
Admin State    : inService
Oper State     : connected
Admin Change   : 01/07/2008 21:40:07
Oper Change    : 01/07/2008 21:40:24
Last Debounce  : 02/15/2008 09:28:42
Debounce Period: 0d 00:00:00
Failure Reason : None
-----
In Band Control Path
-----
Service ID     : 10
Interface Name : to_an1
Oper State     : connected
Dest IP        : 10.10.0.2
Src IP         : 10.10.0.1
-----
VLAN Map B Path Provisioned
-----
range 13-13
range 17-17
-----
VLAN Map Excluded Path Provisioned
-----
range 18-18
-----
VLAN Map B Path Operational
-----
range 13-13
range 17-17
-----
VLAN Map Excluded Path Operational
-----
range 18-18
=====
*A:ALA-48#

*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 192.168.10.104
=====
MC Ring entries
=====
Sync Tag           Oper State      Failure Reason
-----
No. of MC Ring entries: 0
=====
*A:ALA-48#

*A:ALA-48# show redundancy multi-chassis mc-ring peer 10.0.0.2
```



```

=====
MC Ring entries
=====
Sync Tag                Oper State      Failure Reason
-----
ring11                  connected      None
ring12                  shutdown       None
-----
No. of MC Ring entries: 4
=====
*A:ALA-48#

*A:ALA-48# show redundancy multi-chassis mc-ring peer 10.0.0.2 ring ring11 ring-
node an1 detail
=====
Multi-Chassis MC-Ring Node Detailed Information
=====
Peer           : 10.0.0.2
Sync Tag       : ring11
Node Name      : an1
Oper State Loc : connected
Oper State Rem : notTested
In Use         : True
Admin Change   : 01/07/2008 21:40:07
Oper Change    : 01/07/2008 21:40:25
Failure Reason : None
-----
Ring Node Connectivity Verification
-----
Admin State    : inService
Service ID     : 11
VLAN Tag       : 11
Dest IP        : 10.11.3.1
Src IP         : None
Interval       : 1 minutes
Src MAC        : None
=====
*A:ALA-48#

*A:ALA-48# show redundancy multi-chassis mc-ring peer 10.0.0.2 ring ring11 ring-node
=====
MC Ring Node entries
=====
Name                Loc Oper St.      Failure Reason
  In Use              Rem Oper St.
-----
an1                  connected      None
  Yes                  notTested
an2                  connected      None
  Yes                  notTested
-----
No. of MC Ring Node entries: 2
=====
*A:ALA-48#
    
```

**Output Fields:** `show redundancy multi-chassis mc-ring peer <ip-address> ring`

[Table 294: Output Fields: show redundancy multi-chassis mc-ring peer <ip-address> ring](#) describes the output fields for the `show redundancy multi-chassis mc-ring peer <ip-address> ring` command.

Table 294: Output Fields: show redundancy multi-chassis mc-ring peer <ip-address> ring

Label	Description
Sync Tag	Displays the synchronization tag that was used while synchronizing this port with the multi-chassis peer.
Oper State	noPeer — The peer has no corresponding ring configured. connected — The in-band control connection with the peer is operational. broken — The in-band control connection with the peer has timed out. conflict — The in-band control connection with the peer has timed out but the physical connection is still OK; the failure of the in-band signaling connection is caused by a misconfiguration. For example, a conflict between the configuration of this system and its peer, or a misconfiguration on one of the ring access node systems. testingRing — The in-band control connection with the peer is being set up. Waiting for result. waitingForPeer — Verifying if this ring is configured on the peer. configErr — The ring is administratively up, but a configuration error prevents it from operating properly. halfBroken — The in-band control connection indicates that the ring is broken in one direction (towards the peer). localBroken — The in-band control connection with the peer is known to be broken due to local failure or local administrative action. shutdown — The ring is shutdown.
Failure Reason	Displays the failure reason.
Last Debounce	Displays the last time that the debounce mechanism (protecting the router from overload situations in case of a flapping ring) was activated.
Debounce Period	Displays the duration that the debounce mechanism was in action since the "Last Debounce".

**Output Example: show redundancy multi-chassis mc-ring peer <ip-address> statistics**

```
*A:ALA-48>show>redundancy>multi-chassis# mc-ring peer 192.168.10.104 statistics
=====
MC Ring statistics for peer 192.168.10.104
=====
Message                               Received      Transmitted
-----
MCS ID Request                         0             0
MCS ID Response                         0             0
Ring Exists Request                     0             0
Ring Exists Response                    0             0
Keepalive                               0             0
-----
Total                                  0             0
=====
*A:ALA-48>show>redundancy>multi-chassis#
```

**Output Fields: show redundancy multi-chassis mc-ring peer <ip-address> statistics**

Table 295: Output Fields: show redundancy multi-chassis mc-ring peer <ip-address> statistics describes the output fields for the **show redundancy multi-chassis mc-ring peer <ip-address> statistics** command.

Table 295: Output Fields: show redundancy multi-chassis mc-ring peer <ip-address> statistics

Label	Description
Message	Displays the message type.
Received	Indicates the number of valid MC-Ring signaling messages received from the peer.
Transmitted	Indicates the number of valid MC-Ring signaling messages transmitted from the peer.
MCS ID Request	Displays the number of valid MCS ID requests were received from the peer.
MCS ID Response	Displays the number of valid MCS ID responses were received from the peer.
Ring Exists Request	Displays the number of valid 'ring exists' requests were received from the peer.
Ring Exists Response	Displays the number of valid ring exists' responses were received from the peer.
Keepalive	Displays the number of valid MC-Ring control packets of type 'keepalive' were received from the peer.

**Output Example: show redundancy multi-chassis mc-ring global-statistics**

```
*A:ALA-48>show>redundancy>multi-chassis# mc-ring global-statistics
=====
Global MC Ring statistics
=====
Rx                                     : 0
Rx Too Short                          : 0
Rx Wrong Authentication                : 0
Rx Invalid TLV                        : 0
Rx Incomplete                         : 0
Rx Unknown Type                       : 0
Rx Unknown Peer                       : 0
Rx Unknown Ring                       : 0
Rx Unknown Ring Node                  : 0
Tx                                     : 36763
Tx No Buffer                            : 0
Tx Transmission Failed                 : 0
Tx Unknown Destination                : 0
Missed Configuration Events           : 0
Missed BFD Events                     : 0
=====
*A:ALA-48>show>redundancy>multi-chassis#
```

**Output Fields: show redundancy multi-chassis mc-ring ring-node**

[Table 296: Output Fields: Show redundancy multi-chassis mc-ring ring-node](#) describes the output fields for the mc-ring ring-node command.

*Table 296: Output Fields: Show redundancy multi-chassis mc-ring ring-node*

Label	Description
Oper State	Displays the state of the connection verification (both local and remote). notProvisioned — Connection verification is not provisioned. configErr — Connection verification is provisioned but a configuration error prevents it from operating properly. notTested — Connection verification is administratively disabled or is not possible in the current situation. testing — Connection Verification is active, but no results are yet available. connected — The ring node is reachable. disconnected — Connection verification has timed out.
In Use	Displays "True" if the ring node is referenced on an e-pipe or as an inter-dest-id on a static host or dynamic lease.

**Output Fields: show redundancy multi-chassis mc-ring global-statistics**

[Table 297: Output Fields: show redundancy multi-chassis mc-ring global-statistics](#) describes the output fields for the **show redundancy multi-chassis mc-ring global statistics** command.

*Table 297: Output Fields: show redundancy multi-chassis mc-ring global-statistics*

Label	Description
Rx	Displays the number of MC-ring signaling packets were received by this system.
Rx Too Short	Displays the number of MC-ring signaling packets were received by this system that were too short.
Rx Wrong Authentication	Displays the number of MC-ring signaling packets were received by this system with invalid authentication.
Rx Invalid TLV	Displays the number of MC-ring signaling packets were received by this system with invalid TLV.
Rx Incomplete	Displays the number of MC-ring signaling packets were received by this system that were incomplete.
Rx Unknown Type	Displays the number of MC-ring signaling packets were received by this system that were of unknown type.
Rx Unknown Peer	Displays the number of MC-ring signaling packets were received by this system that were related to an unknown peer.

Label	Description
Rx Unknown Ring	Displays the number of MC-ring signaling packets were received by this system that were related to an unknown ring.
Rx Unknown Ring Node	Displays the number of MC-ring signaling packets were received by this system that were related to an unknown ring node.
Tx	Displays the number of MC-ring signaling packets were transmitted by this system.
Tx No Buffer	Displays the number of MC-ring signaling packets could not be transmitted by this system due to a lack of packet buffers.
Tx Transmission Failed	Displays the number of MC-ring signaling packets could not be transmitted by this system due to a transmission failure.
Tx Unknown Destination	Displays the number of MC-ring 'unknown destination' signaling packets were transmitted by this system.
Missed Configuration Events	Displays the number of missed configuration events on this system.
Missed BFD Events	Displays the number of missed BFD events on this system.

## mc-ring

### Syntax

**mc-ring**

### Context

[\[Tree\]](#) (clear>redundancy>multi-chassis mc-ring)

### Full Context

clear redundancy multi-chassis mc-ring

### Description

This command clears multi-chassis ring data.

### Platforms

All

## mc-ring

### Syntax

**mc-ring peer** *ip-address* **ring** *sync-tag*

### Context

[\[Tree\]](#) (show>service>sap-using mc-ring)

### Full Context

show service sap-using mc-ring

### Description

This command displays SAP information for a specific MC-RING.

### Parameters

#### *ip-address*

Specifies the IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x – [0 to FFFF] H
    - d – [0 to 255] D

#### *sync-tag*

Specifies the ring's synchronization tag, up to 32 characters.

### Platforms

All

## 15.30 mcac

## mcac

### Syntax

**mcac**

### Context

[\[Tree\]](#) (clear>router mcac)

### Full Context

```
clear router mcac
```

### Description

Commands in this context clear and reset Multicast Connection Admission Control (MCAC) statistics.

### Platforms

All

```
mcac
```

### Syntax

```
mcac
```

### Context

[\[Tree\]](#) (show>router mcac)

### Full Context

```
show router mcac
```

### Description

Commands in this context display multicast CAC related information.

### Platforms

All

## 15.31 mcast-ipv4

```
mcast-ipv4
```

### Syntax

```
mcast-ipv4 [aspath-regex reg-exp] [community comm-id] [brief] [all]
```

```
mcast-ipv4 [aspath-regex reg-exp] hunt [community comm-id] [brief] [all]
```

```
mcast-ipv4 [detail | longer] [aspath-regex reg-exp] [community comm-id] [all]
```

### Context

[\[Tree\]](#) (show>router>bgp>routes mcast-ipv4)

### Full Context

```
show router bgp routes mcast-ipv4
```

## Description

This command displays BGP multicast IPv4 routes.

## Parameters

### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

### **hunt**

Displays entries for the specified route.

### **comm-id**

Specifies the community ID, up to 72 characters.

**Values** `[as-num:comm-val | ext-comm | well-known-comm | large-comm]`

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:

- `{target | origin}:ip-address:comm-val`
- `{target | origin}:asnum:ext-comm-val`
- `{target | origin}:ext-asnum:comm-val`
- **bandwidth:asnum:val-in-mbps**
- **ext:4300:ovstate**
- **ext:value1:value2**
- **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set



- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

#### **brief**

Displays the BGP multicast IPv4 route information in a brief format.

#### **all**

Displays all output for imported routes.

### **Platforms**

All

## 15.32 mcast-ipv6

### mcast-ipv6

#### **Syntax**

**mcast-ipv6** [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**brief**] [**all**]

**mcast-ipv6** [**aspath-regex** *reg-exp*] **hunt** [**community** *comm-id*] [**brief**] [**all**]

**mcast-ipv6** [**detail** | **longer**] [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**all**]

#### **Context**

[\[Tree\]](#) (show>router>bgp>routes mcast-ipv6)

#### **Full Context**

show router bgp routes mcast-ipv6

#### **Description**

This command displays BGP multicast IPv6 routes.

#### **Parameters**

##### ***reg-exp***

Displays routes matching the specified regular expression, up to 80 characters.

##### **hunt**

Displays entries for the specified route.

##### ***comm-id***

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth**:*asnum:val-in-mbps*
  - **ext:4300**:*ovstate*
  - **ext**:*value1:value2*
  - **flowspec-set**:*ext-asnum:group-id*

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **brief**

Displays the BGP multicast IPv6 route information in a brief format.

### **all**

Displays all output for imported routes.

## **Platforms**

All

## 15.33 mcast-join-synch

### mcast-join-synch

#### Syntax

```
mcast-join-synch [hunt | detail] [rd rd] [community comm-id] [tag tag] [next-hop next-hop] [aspath-regex reg-exp] [originator-ip ip-address | ipv6-address]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes>evpn mcast-join-synch)

#### Full Context

```
show router bgp routes evpn mcast-join-synch
```

#### Description

This command displays BGP-EVPN multicast join sync routes.

#### Parameters

##### hunt

Displays entries for the specified route.

##### detail

Displays detailed information.

##### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

##### comm-id

Specifies the community ID, up to 72 characters.

**Values** *[as-num:comm-val | ext-comm | well-known-comm]*

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type:{ip-address:comm-val1 | as-number1:comm-val2 | as-number2:comm-val1}*

where:

- *as-number1* — 0 to 65535
- *comm-val1* — 0 to 65535

- **type** — target, origin
- *ip-address* — a.b.c.d
- *comm-val2* — 0 to 4294967295
- *as-number2* — 0 to 4294967295
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** |

### **tag**

Specifies the multicast join sync route tag.

**Values** 0to 4294967295 | MAX-ET

### **next-hop**

Specifies the IPv4 or IPv6 BGP next-hop address.

**Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

### **ip-address | ipv6-address**

Specifies the originator IPv4 or IPv6 address, up to 64 characters.

## **Platforms**

All

## **15.34 mcast-leave-synch**

### **mcast-leave-synch**

#### **Syntax**

**mcast-leave-synch** [hunt | detail] [rd rd] [community comm-id] [tag tag] [next-hop next-hop] [aspath-regex reg-exp] [originator-ip ip-address | ipv6-address]

#### **Context**

[\[Tree\]](#) (show>router>bgp>routes>evpn mcast-leave-synch)

## Full Context

```
show router bgp routes evpn mcast-leave-synch
```

## Description

This command displays BGP-EVPN multicast leave sync routes.

## Parameters

### hunt

Displays entries for the specified route.

### detail

Displays detailed information.

### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val* | *2byte-asnumber:ext-comm-val* | *4byte-asnumber:comm-val*

### comm-id

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type:{ip-address:comm-val1 | as-number1:comm-val2 | as-number2:comm-val1}*  
where:
  - *as-number1* — 0 to 65535
  - *comm-val1* — 0 to 65535
  - **type** — target, origin
  - *ip-address* — a.b.c.d
  - *comm-val2* — 0 to 4294967295
  - *as-number2* — 0 to 4294967295
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** |

### tag

Specifies the multicast leave sync route tag.

**Values** 0to 4294967295 | MAX-ET

### next-hop

Specifies the IPv4 or IPv6 BGP next-hop address.

Values		
ipv4-address:		a.b.c.d
ipv6-address:		x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 to FFFF]H
		d: [0 to 255]D

**reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

**ip-address | ipv6-address**

Specifies the originator IPv4 or IPv6 address, up to 64 characters.

**Platforms**

All

## 15.35 mcast-management

### mcast-management

**Syntax**

mcast-management

**Context**

[\[Tree\]](#) (clear mcast-management)

**Full Context**

clear mcast-management

**Description**

Commands in this context clear the multicast management status.

**Platforms**

All

### mcast-management

**Syntax**

mcast-management

## Context

[\[Tree\]](#) (show mcast-management)

## Full Context

show mcast-management

## Description

This command shows multicast path management related information.

## Platforms

All

## 15.36 mcast-path-mgr

### mcast-path-mgr

## Syntax

**mcast-path-mgr cpm [unmanaged]**

## Context

[\[Tree\]](#) (tools>dump mcast-path-mgr)

## Full Context

tools dump mcast-path-mgr

## Description

This command dumps multicast path manager CPM information.

## Parameters

### unmanaged

Displays multicast path manager unmanaged and Multiple MAC Registration Protocol information.

## Platforms

7450 ESS, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-7/12/12e, 7750 SR-s, 7950 XRS, VSR

## Output

The following output is an example of CPM information.

## Output Example

```
*A:PE-1# tools dump mcast-path-mgr cpm  
=====
```

```

Slot: 5 Complex: 0
=====
PATH:
Type SGs      InUseBW  AvailBW  TotalBw  ID  SGs  InUseBW  AvailBW  TotalBw
P      7      28040    -        -    17  7      28040   1971960  2000000
P      7      28047    -        -    16  7      28047   1971953  2000000
P      7      28047    -        -    18  7      28047   1971953  2000000
P      6      24075    -        -    19  6      24075   1975925  2000000
P      6      24075    -        -    20  6      24075   1975925  2000000
P      6      24097    -        -    21  6      24097   1975903  2000000
P      7      28076    -        -    22  7      28076   1971924  2000000
P      7      28043    -        -    23  7      28043   1971957  2000000
P      7      28018    -        -    24  7      28018   1971982  2000000
P      7      28036    -        -    25  7      28036   1971964  2000000
P      7      28036    -        -    26  7      28036   1971964  2000000
P      6      24042    -        -    27  6      24042   1975958  2000000
P      6      24053    -        -    28  6      24053   1975947  2000000
P      7      28047    -        -    29  7      28047   1971953  2000000
P      7      28080    -        -    30  7      28080   1971920  2000000
S      0          0    -        -    31  0          0   1800000  1800000
B      0          0    -        -    -    -          -    -        -
*A:PE-1#
    
```

## 15.37 mcast-reporting-dest

### mcast-reporting-dest

#### Syntax

**mcast-reporting-dest** [*mcast-reporting-dest-name*]

#### Context

[\[Tree\]](#) (show>mcast-mgmt mcast-reporting-dest)

#### Full Context

show mcast-management mcast-reporting-dest

#### Description

This command displays multicast path management reporting destination information.

#### Parameters

***mcast-reporting-dest-name***

Specifies the multicast reporting destination name, up to 32 characters.

#### Platforms

All



## mcast-reporting-dest

### Syntax

**mcast-reporting-dest** [*mcast-reporting-dest-name*]

### Context

[\[Tree\]](#) (clear>mcast-mgmt mcast-reporting-dest)

### Full Context

clear mcast-management mcast-reporting-dest

### Description

This command clears multicast reporting destination statistics.

### Parameters

***mcast-reporting-dest-name***

Specifies the multicast reporting destination name, up to 32 characters.

### Platforms

All

## 15.38 mcast-reporting-statistics

## mcast-reporting-statistics

### Syntax

**mcast-reporting-statistics** *ip-address*

### Context

[\[Tree\]](#) (show>router>igmp mcast-reporting-statistics)

### Full Context

show router igmp mcast-reporting-statistics

### Description

This command displays IGMP multicast reporting statistics.

### Parameters

***ip-address***

Displays the information associated with the specified IP address.

## Platforms

All

## mcast-reporting-statistics

### Syntax

**mcast-reporting-statistics** [*ip-address*]

### Context

**[Tree]** (clear>router>igmp mcast-reporting-statistics)

### Full Context

clear router igmp mcast-reporting-statistics

### Description

This command clears IGMP multicast reporting statistics.

### Parameters

***ip-address***

Specifies the IP address.

**Values** a.b.c.d

## Platforms

All

## 15.39 mcast-umh-red

## mcast-umh-red

### Syntax

**mcast-umh-red** *pair-id*

### Context

**[Tree]** (tools>dump>router mcast-umh-red)

### Full Context

tools dump router mcast-umh-red

## Description

This command displays upstream multi-homing (UMH) information.

## Parameters

*pair-id*

Displays the information associated with the specified pair of primary and backup UMH.

**Values** 1 to 1000

## Platforms

All

## Output

The following output is an example of UMH information.

### Output Example

```
*A:DUT-B# tools dump router mcast-umh-red 100
=====
Slot 1
=====
Switch Count:      1
Last Switch:      04/23/21 15:59:40
Revert Time Left: 39 sec
Active Tunnel
  Label:           523515
                  LDP FEC P2MP: root: 10.20.1.1, T: 1, L: 4, TunnelId: 8228
  Bandwidth:      482400 bps
Standby Tunnel
  Label:           523657
                  LDP FEC P2MP: root: 10.20.1.3, T: 1, L: 4, TunnelId: 8229
  Bandwidth:      482400 bps
```

## 15.40 mcast-vpn-ipv4

### mcast-vpn-ipv4

#### Syntax

**mcast-vpn-ipv4** [detail | longer] [rd rd] [community comm-id] [aspath-regex reg-exp] [all]

**mcast-vpn-ipv4** [brief] [rd rd] [community comm-id] [aspath-regex reg-exp] [all]

**mcast-vpn-ipv4** hunt [brief] [rd rd] [community comm-id] [aspath-regex reg-exp] [all]

#### Context

[\[Tree\]](#) (show>router>bgp>routes mcast-vpn-ipv4)

## Full Context

```
show router bgp routes mcast-vpn-ipv4
```

## Description

This command displays BGP multicast VPN IPv4 routes.

## Parameters

### detail

Displays detailed information.

### longer

Displays the specified route and subsets of the route.

### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### comm-id

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val | ext-comm | well-known-comm | large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:

- *{target | origin}:ip-address:comm-val*
- *{target | origin}:asnum:ext-comm-val*
- *{target | origin}:ext-asnum:comm-val*
- **bandwidth:asnum:val-in-mbps**
- **ext:4300:ovstate**
- **ext:value1:value2**
- **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215

- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

#### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

#### **all**

Displays all output for imported routes.

### **Platforms**

All

## **15.41 mcast-vpn-ipv6**

### **mcast-vpn-ipv6**

#### **Syntax**

**mcast-vpn-ipv6** [**detail** | **longer**] [**rd** *rd*] [**community** *comm-id*] [**aspath-regex** *reg-exp*] [**all**]

**mcast-vpn-ipv6** [**brief**] [**rd** *rd*] [**community** *comm-id*] [**aspath-regex** *reg-exp*] [**all**]

**mcast-vpn-ipv6** **hunt** [**brief**] [**rd** *rd*] [**community** *comm-id*] [**aspath-regex** *reg-exp*] [**all**]

#### **Context**

[\[Tree\]](#) (show>router>bgp>routes mcast-vpn-ipv6)

#### **Full Context**

show router bgp routes mcast-vpn-ipv6

#### **Description**

This command displays BGP multicast VPN IPv6 routes.

## Parameters

### **detail**

Displays detailed information.

### **longer**

Displays the specified route and subsets of the route.

### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### **comm-id**

Specifies the community ID, up to 72 characters.

**Values** *[as-num:comm-val | ext-comm | well-known-comm | large-comm]*

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:

- *{target | origin}:ip-address:comm-val*
- *{target | origin}:asnum:ext-comm-val*
- *{target | origin}:ext-asnum:comm-val*
- **bandwidth:asnum:val-in-mbps**
- **ext:4300:ovstate**
- **ext:value1:value2**
- **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF

- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

**reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

**all**

Displays all output for imported routes.

**Platforms**

All

## 15.42 md-auto-id

### md-auto-id

**Syntax**

**md-auto-id**

**Context**

[\[Tree\]](#) (show>qos md-auto-id)

**Full Context**

show qos md-auto-id

**Description**

This command displays information about QoS policy IDs that have been automatically assigned by SR OS using the **md-auto-id** functionality. See the **config>qos md-auto-id** configuration command for further details.

**Platforms**

All

**Output**

The following output is an example of QoS md-auto-id information, and [Table 298: MD Auto-Id QoS Output Fields](#) describes the output fields.

**Output Example**

```
*A:node-6# show qos md-auto-id
=====
```

```

MD Auto-Id Information
=====
QoS Policy-Id Range
Start                : 327675          End                : 65535
Sap Ingress Count   : 10
Sap Egress Count    : 8
Network Count       : 6
=====
    
```

Table 298: MD Auto-Id QoS Output Fields

Label	Description
Start	Displays the start of the range for an automatic QoS policy ID.
End	Displays the end of the range for an automatic QoS Policy ID.
Sap Ingress Count	Displays the number of SAP ingress policies with automatically-assigned IDs.
Sap Egress Count	Displays the number of SAP egress policies with automatically-assigned IDs.
Network Count	Displays the number of network policies with automatically-assigned IDs.

## md-auto-id

### Syntax

**md-auto-id**

### Context

[\[Tree\]](#) (show>filter md-auto-id)

### Full Context

show filter md-auto-id

### Description

This command displays information about filter IDs that have been automatically assigned by SR OS using the **md-auto-id** functionality. See the **config>qos md-auto-id** configuration command for further details.

### Platforms

All



## Output

The following output is an example of **md-auto-id** filter information and [Table 299: MD Auto-Id Filter Output Fields](#) describes the output fields.

### Output Example

```
*A:node-6# show filter md-auto-id
=====
MD Auto-Id Information
=====
Filter-id Range
Start          : 1073741822          End          : 2147483647
Ip-filter Count : 30
Ipv6-filter Count : 20
Mac-filter Count : 10
=====
```

Table 299: MD Auto-Id Filter Output Fields

Label	Description
Start	Displays the start of the range for an automatic filter policy ID
End	Displays the end of the range for an automatic filter policy ID
Ip-filter Count	Displays the number of IP filter policies with automatically-assigned IDs
Ipv6-filter Count	Displays the number of IPv6 filter policies with automatically-assigned IDs
Mac-filter Count	Displays the number of MAC filter policies with automatically-assigned IDs

## md-auto-id

### Syntax

**md-auto-id**

### Context

[\[Tree\]](#) (show>service md-auto-id)

### Full Context

show service md-auto-id

### Description

This command displays information about service, customer and PW template IDs that have been automatically assigned by SR OS using the **md-auto-id** functionality. For more information, see the **md-auto-id** configuration command.

## Platforms

All

## Output

The following output is an example of **md-auto-id** information, and [Table 300: MD Auto-Id Service Output Fields](#) describes the output fields.

### Output Example

```
*A:node-6# show service md-auto-id
=====
MD Auto-Id Information
=====
Service-Id Range
Start           : 1073741823           End           : 2147483647
Count          : 12
Customer-Id Range
Start           : 1073741823           End           : 2147483647
Count          : 10
Pw-Template-Id Range
Start           : 1073741823           End           : 2147483647
Count          : 5
=====
```

Table 300: MD Auto-Id Service Output Fields

Label	Description
Start	Displays the start of the range for an automatic service ID, customer ID, or PW template ID.
End	Displays the end of the range for an automatic service ID, customer ID, or PW template ID.
Count	Displays the number of service IDs, customer IDs, or PW template IDs with automatically-assigned IDs.

## 15.43 mda

mda

### Syntax

**mda slot** [/mda] [ **detail**]

### Context

[\[Tree\]](#) (show mda)

## Full Context

show mda

## Description

This command displays MDA\XMA information.

If no command line options are specified, a summary output of all MDAs is displayed in table format.

## Parameters

### slot

Specifies the slot number for which to display MDA information.

**Values** 1 to 10

### mda

Specifies the MDA number in the slot for which to display MDA information.

**Values** slot [/mda]

### detail

Displays detailed MDA information.

## Platforms

All

## Output

See the following output examples:

- [Output Example: show mda \(showing 7450 ESS\)](#)
- [Output Example: show mda \(showing 7950 XRS\)](#)
- [Output Fields: show mda](#)
- [Output Example: show mda <slot/mda> detail](#)
- [Output Example: show mda <slot/mda> detail \(showing Channelized MDA on a 7750 SR-7\)](#)
- [Output Example: show mda <slot/mda> detail \(showing 7950 XRS\)](#)
- [Output Fields: show mda <slot/mda> detail](#)

### Output Example: show mda (showing 7450 ESS)

```
A:Dut-B# show mda
=====
MDA Summary
=====
Slot  Mda    Provisioned Type           Admin   Operational
      Mda    Equipped Type (if different) State   State
-----
6     1     p1-100g-cfp                up      up
7     2     p20-1gb-sfp                 up      up
8     1     isa2-bb                      up      up
      p-isa2-ms
      2     p3-40g-qsf                 up      up
```

**Output Example: show mda (showing 7950 XRS)**

```

A:Dut-G# show mda
=====
MDA Summary
=====
Slot  Mda  Provisioned Type           Admin   Operational
      Mda  Equipped Type (if different) State   State
-----
1     1     cx20-10g-sfp                up      up
      2     cx2-100g-cfp                up      up
2     1     cx6-40g-qsfp                up      up
      2     cx72-1g-csfp                up      up
3     1     x2-100g-tun                 up      up
      2     x40-10g-sfp                 up      up
4     1     x4-100g-cfp2                up      up
      2     x4-100g-cxp                 up      up
5     1     x40-10g-sfp-ptp             up      up
      x40-10g-sfp
6     1     x24-100g-qsfp28:he2400g    up      up
      2     x6-400g-cfp8:he2400g       up      up
7     1     x12-400g-qsfpdd:he2400g+4t up      up
      2     x6-200g-cfp2-dco:he1200g   up      up
=====
    
```

**Output Fields: show mda**

Table 301: Output Fields: show mda describes the output fields for the **show mda** command.

Table 301: Output Fields: show mda

Label	Description
Slot	The chassis slot number.
MDA	The MDA slot number.
Provisioned MDA-type	The MDA type provisioned.
Equipped MDA-type	The MDA type actually installed.
Admin State	Up — Administratively up. Down — Administratively down (e.g., shutdown).
Operational State	Up — Operationally up. Down — Operationally down.

**Output Example: show mda <slot/mda> detail**

```

A:Dut-G# show mda 1/1 detail
=====
MDA 1/1 detail
=====
Slot  Mda  Provisioned Type           Admin   Operational
      Mda  Equipped Type (if different) State   State
-----
1     1     cx20-10g-sfp                up      up
    
```

```

MDA Specific Data
  Maximum port/connector count : 20
  Num ports/connectors equipped : 20
  Capabilities                  : Ethernet
  Fail On Error                 : Disabled
  Reset On Recoverable Error    : Disabled
  Egress XPL error threshold    : 1000
  Egress XPL error window       : 60
  Ingress XPL error threshold   : 1000
  Ingress XPL error window      : 60
  Min channel size              : Sonet STS-192
  Max channel size              : Sonet STS-192
  Max number of channels        : 20
  Channels in use               : 0
  Power Priority                 : 150
Hardware Data
  Platform type                 : 7950
  Part number                   : Sim Part#
  CLEI code                    : Sim CLEI
  Serial number                 : mda-1
  Manufacture date              : 01012003
  Manufacturing deviations      : Sim MfgDeviation mda-1
  Manufacturing assembly number : 01-2345-67
  Administrative state         : up
  Operational state            : up
  Software boot (rom) version   : (Not Specified)
  Software version              : (Not Specified)
  Time of last boot             : 2022/02/15 17:12:33
  Current alarm state          : alarm cleared
  Base MAC address              : ac:27:01:01:00:01
  Firmware version              : I-0.0.I6922

Hardware Resources (Power-Zone 1)
  Voltage
    Minimum                    : 53.00 Volts (02/15/2022 17:12:34)
    Current                     : 53.00 Volts
    Peak                        : 53.00 Volts (02/15/2022 17:12:34)
  Wattage
    Minimum                    : 380.00 Watts (02/15/2022 17:12:34)
    Current                     : 380.00 Watts
    Peak                        : 380.00 Watts (02/15/2022 17:12:34)
    Max Required                : 440.00 Watts
  Amperage
    Minimum                    : 7.17 Amps (02/15/2022 17:12:34)
    Current                     : 7.17 Amps
    Peak                        : 7.17 Amps (02/15/2022 17:12:34)
=====
    
```

**Output Example: show mda <slot/mda> detail (showing Channelized MDA on a 7750 SR-7)**

```

A:Dut-A# show mda 5/1 detail
=====
MDA 5/1 detail
=====
Slot Mda  Provisioned Type           Admin  Operational
      Mda  Equipped Type (if different) State   State
-----
5    1    p10-10g-sfp                    up     up

MDA Specific Data
  Maximum port/connector count : 10
  Num ports/connectors equipped : 10
    
```

```

    Capabilities           : Ethernet
    Fail On Error          : Disabled
    Egress XPL error threshold : 1000
    Egress XPL error window  : 60
    Ingress XPL error threshold : 1000
    Ingress XPL error window  : 60
    Min channel size        : Sonet STS-192
    Max channel size        : Sonet STS-192
    Max number of channels   : 10
    Channels in use         : 0
Hardware Data
    Platform type          : 7750
    Part number            : 3HE07305AARA01
    CLEI code              : IPUCA9AFAA
    Serial number          : NS1249F1339
    Manufacture date       : 01172013
    Manufacturing deviations : (Not Specified)
    Manufacturing assembly number :
    Administrative state   : up
    Operational state      : up
    Temperature            : 50C
    Temperature threshold  : 75C
    Software boot (rom) version : (Not Specified)
    Software version        : (Not Specified)
    Time of last boot      : 2022/02/14 14:25:55
    Current alarm state    : alarm cleared
    Base MAC address       : 0c:a4:02:bd:df:55
    Firmware version       : I-0.0.I6921
=====
    
```

**Output Example: show mda <slot/mda> detail (showing 7950 XRS)**

```

A:Dut-A# show mda 1/1 detail
=====
MDA 1/1 detail
=====
Slot  Mda  Provisioned Type  Equipped Type(if different) Admin  Operational
-----
1     1     cx20-10g-sfp                up      up

MDA Specific Data
    Maximum port count          : 20
    Number of ports equipped    : 20
    Network ingress queue policy : default
    Capabilities                : Ethernet
    Min channel size            : Sonet STS-192
    Max channel size            : Sonet STS-192
    Max number of channels      : 20
    Channels in use             : 0

Hardware Data
    Platform type              : 7950
    Part number                 :
    CLEI code                   :
    Serial number               : GRA03-126
    Manufacture date            :
    Manufacturing string         : (Not Specified)
    Manufacturing deviations    : (Not Specified)
    Manufacturing assembly number : 82-0299-03
    Administrative state        : up
    Operational state           : up
    
```

```

Temperature           : 45C
Temperature threshold : 75C
Software version      : N/A
Time of last boot     : 2012/05/23 20:30:55
Current alarm state   : alarm cleared
Base MAC address      : 8c:90:d3:be:69:8a
Firmware version      : I-10.0.S209

-----
QOS Settings
-----
=====
A:Dut-A#
    
```

**Output Fields: show mda <slot/mda> detail**

[Table 302: Output Fields: show mda <slot/mda> detail](#) describes the output fields for the **show mda <slot/mda> detail** command.

*Table 302: Output Fields: show mda <slot/mda> detail*

Label	Description
Slot	The chassis slot number.
Mda	The MDA slot number.
Provisioned Mda-type	The provisioned MDA type.
Equipped Mda-type	The MDA type that is physically inserted into this slot in this chassis.
Admin State	Up — The MDA is administratively up. Down — The MDA is administratively down.
Operational State	Up — The MDA is operationally up. Down — The MDA is operationally down.
Failure Reason	This hardware component has failed.
Maximum port count	The maximum number of ports that can be equipped on the MDA card.
Number of ports equipped	The number of ports that are actually equipped on the MDA.
Transmit timing selected	Indicates the source for the timing used by the MDA.
Sync interface timing status	Indicates whether the MDA has qualified one of the timing signals from the CPMs.
Network Ingress Queue Policy	Specifies the network queue policy applied to the MDA to define the queueing structure for this object.
Capabilities	Specifies the minimum size of the port that can exist on the MDA.
Egress XPL error threshold	The Egress XPL Error Threshold value used by the <b>fail-on-error</b> feature.

Label	Description
Egress XPL error window	The Egress XPL Error Window value used by the <b>fail-on-error</b> feature.
Max channel size	Specifies the maximum size of the channel that can exist on the channelized MDA.
Channels in use	Applicable for SONET and TDM MDAs only. Indicates the total number of leaf SONET paths, TDM channels and bundles on the MDA which are presently provisioned for passing traffic.
Part number	The hardware part number.
CLEI code	The code used to identify the MDA.
Serial number	The MDA part number. Not user modifiable.
Manufacture date	The MDA manufacture date. Not user modifiable.
Manufacturing string	Factory-inputted manufacturing text string. Not user modifiable.
Administrative state	Up — The MDA is administratively up. Down — The MDA is administratively down.
Operational state	Up — The MDA is operationally up. Down — The MDA is operationally down.
Time of last boot	The date and time the most recent boot occurred.
Current alarm state	Displays the alarm conditions for the specific MDA.
Base MAC address	The base chassis Ethernet MAC address. Special purpose MAC addresses used by the system software are constructed as offsets from this base address.

## mda

### Syntax

**mda** *mda-id* [**statistics**]

### Context

[\[Tree\]](#) (clear mda)

### Full Context

clear mda

### Description

This command reinitializes the specified MDA in a particular slot.



## Parameters

### *mda-id*

Clears the specified slot and MDA.

#### Values

slot/mda	slot: 1 to 10 mda: 1, 2
slot/xiom/mda	slot: 1 to 10 xiom: "x1" or "x2" mda: 1, 2

### **statistics**

Clears statistics for the specified MDA.

## Platforms

All

## mda

## Syntax

**mda** [*mda-slot*]

## Context

[\[Tree\]](#) (tools>dump>resource-usage>card mda)

## Full Context

tools dump resource-usage card mda

## Description

This command displays resource information for MDAs.

## Parameters

### *mda-slot*

Specifies an MDA slot.

**Values** 1 to 2

## Platforms

All

## 15.44 mdt-safi

### mdt-safi

#### Syntax

**mdt-safi** [*rd rd*] [**grp-address** *mcast-grp-address*] [**source-ip** *ip-address*] **brief** [**community** *comm-id*]  
[**aspath-regex** *reg-exp*]

**mdt-safi** [*rd rd*] [**grp-address** *mcast-grp-address*] [**source-ip** *ip-address*] [**detail**] [**community** *comm-id*]  
[**aspath-regex** *reg-exp*]

**mdt-safi** [*rd rd*] [**grp-address** *mcast-grp-address*] [**source-ip** *ip-address*] [**brief**] **hunt** [**community** *comm-id*]  
[**aspath-regex** *reg-exp*]

#### Context

[\[Tree\]](#) (show>router>bgp>routes mdt-safi)

#### Full Context

show router bgp routes mdt-safi

#### Description

This command displays BGP MDT-SAFI routes.

#### Parameters

##### *rd*

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

##### *mcast-grp-address*

Specifies the multicast group address.

**Values** a.b.c.d

##### *ip-address*

Specifies the source IP address.

**Values** a.b.c.d

##### **detail**

Displays detailed information.

##### *comm-id*

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val | ext-comm | well-known-comm | large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth**:*asnum:val-in-mbps*
  - **ext:4300**:*ovstate*
  - **ext**:*value1:value2*
  - **flowspec-set**:*ext-asnum:group-id*

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

### **Platforms**

All

## 15.45 meas-interval

### meas-interval

#### Syntax

**meas-interval raw**

**meas-interval raw** [**all** | **bins** | **summary**]

**meas-interval** {**5-mins** | **15-mins** | **1-hour** | **1-day**} **interval-number** *interval-number*

**meas-interval** {**5-mins** | **15-mins** | **1-hour** | **1-day**} **interval-number** *interval-number* [**all** | **bins** | **summary**]

#### Context

**[Tree]** (show>oam-pm>stats>session>slm meas-interval)

**[Tree]** (show>oam-pm>stats>session>lmm meas-interval)

**[Tree]** (show>oam-pm>stats>session>dm meas-interval)

**[Tree]** (show>oam-pm>stats>session>dmm meas-interval)

#### Full Context

show oam-pm statistics session slm meas-interval

show oam-pm statistics session lmm meas-interval

show oam-pm statistics session dm meas-interval

show oam-pm statistics session dmm meas-interval

#### Description

This command selects a measurement interval for the statistical display.

#### Parameters

##### **raw**

Specifies that the interval number is not to be included because there is only one raw cumulative bin.

##### **{5-mins | 15-mins | 1-hour | 1-day}**

Identifies the measurement interval to query for the statistics.

##### ***interval-number***

Specifies the numerical reference that indicates the position from the latest sample window. The number 1 is the most recent interval with all higher numbers being that position in the past from current.

**Values** 1 to 97

**[all | bins | summary]**

Specifies a keyword to filter the output.

**Platforms**

All

- show oam-pm statistics session lmm meas-interval
- show oam-pm statistics session dmm meas-interval
- show oam-pm statistics session slm meas-interval

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

- show oam-pm statistics session dm meas-interval

## meas-interval

**Syntax**

**meas-interval raw [loss]**

**meas-interval raw [all | bins | summary]**

**meas-interval {5-mins | 15-mins | 1-hour | 1-day} interval-number *interval-number* [loss]**

**meas-interval {5-mins | 15-mins | 1-hour | 1-day} interval-number *interval-number* delay [all | bins | summary]**

**Context**

[\[Tree\]](#) (show>oam-pm>stats>session>twamp-light meas-interval)

**Full Context**

show oam-pm statistics session twamp-light meas-interval

**Description**

This command selects a measurement interval for the statistical display.

**Parameters**

**raw**

Specifies that the interval number is not to be included because there is only one raw cumulative bin.

**{5-mins | 15-mins | 1-hour | 1-day}**

Identifies the measurement interval to query for the statistics.

***interval-number***

Specifies the numerical reference that indicates the position from the latest sample window. The number 1 is the most recent interval with all higher numbers being that position in the past from current.

**Values** 1 to 97

### **delay**

Indicates that the statistics being queried are for delay. TWAMP-light PDUs carry both delay and loss informational elements and it is not clear from only the test type name which statistic the operator requires.

### **loss**

Indicates the statistics being queried are for loss. TWAMP-light PDUs carry both delay and loss informational elements and it is not clear from only the test type name which statistic the operator requires.

### **[all | bins | summary]**

Specifies a keyword to filter the output.

### **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## **15.46 measurement-template**

### **measurement-template**

#### **Syntax**

**measurement-template** [*measurement-template*]

#### **Context**

[\[Tree\]](#) (show>test-oam>link-measurement measurement-template)

#### **Full Context**

show test-oam link-measurement measurement-template

#### **Description**

This command displays basic link measurement template information, such as the administrative state and number of interfaces referencing the template.

The base command can filter and produce output for a single measurement template. When the measurement template name is specified, delayed information about the template is displayed.

#### **Parameters**

##### ***measurement-template***

Specifies the link measurement template name, up to 64 characters, for which to display a filtered list.

#### **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following outputs are examples of link measurement template information. The associated tables describe the output fields.

### Output Example

```

show test-oam link-measurement measurement-template
=====
Measurement Templates
=====
Name                               Admin    Refs
                                   Act/Tot
-----
non-standard                        Down    0/0
standard-direct                     Up      3/3
replace-standard-direct             Up      1/1
-----
No. of measurement templates: 3
=====
    
```

Table 303: Output Fields: Measurement Template

Label	Description
Name	Displays the name of the link measurement template
Admin	Displays the administrative state of the measurement template
Refs Act	Displays the number of interfaces actively (Oper Up) referencing this link measurement template
Refs Total	Displays the number of interfaces referencing this link measurement template, regardless of the operational state
No. of measurement templates	Displays the total number of configured measurement templates

### Output Example (Template Specified)

```

show test-oam link-measurement measurement-template "standard-direct"
=====
Template Name: standard-direct
=====
Description           : standard delay link template
Admin State           : Up
Unidirectional Measurement: derived
Delay Measurement     : max
Interval              : 1s
Last Reported Delay Hold : 0s
-----
Protocol: TWAMP Light
-----
Destination UDP Port: 862          Timestamp Format : ntp
DSCP                  : ncl         FC              : h1
Profile               : in         Allow Egress Remark: No
TTL                   : 1          IPv6 UDP Checksum 0: Disallow
    
```

```

-----
Sample Window
-----
Interval Multiplier : 60                Duration           : 60s
Relative Threshold  : 100%              Absolute Threshold : 100us
Window Integrity   : 90%
-----
Aggregate Sample Window
-----
Sample Multiplier   : 3                Duration           : 180s
Relative Threshold  : 50%              Absolute Threshold : 50us
Window Integrity    : 0%
-----
Active Interfaces : 3
Total Interfaces  : 3
=====
    
```

Table 304: Output Fields: Measurement Template with Template Name Specified

Label	Description
Template Name	Displays the name of the link measurement template
Description	Displays the configured description of the link measurement template
Admin State	Displays the administrative state of the measurement template
Unidirectional Measurement	Displays the computational method used to calculate the delay metric actual — forward delay derived — half the roundup
Delay Measurement	Displays the delay metric compared to the threshold min — minimum recorded value max — maximum recorded value avg — average recorded value
Interval	Displays the probe frequency of the test packet
Last Reported Delay Hold	Displays the configured value that determines the time a reported delay measurement should be cleared if the operational state of the test transitions to down and remains there at least the length of this timer
Protocol	Displays the type of test packet used to report delay
Destination UDP Port	Displays the configured destination UDP port for test packets
Timestamp Format	Displays the format of the timestamp encoded in the test packetntp — Network Time Protocol format 32 seconds, 32 fractional



Label	Description
	secondsptp — Truncated Precision Time Protocol format 32 seconds, 32 nanoseconds
DSCP	Displays the configured DSCP in the IP header of the test packet
FC	Displays the configured forwarding class in the local node
Profile	Displays the profile of the test packet in the local node
Allow Egress Remark	Displays whether the egress QoS policy can remark the DSCP of the test  packetNo — the egress QoS policy is bypassed unless <b>force-remark</b> is enabled Yes — the egress QoS policy is applied
TTL	Displays the IP header time to live (IPv4) or hop limit (IPv6)
IPv6 UDP Checksum 0	Displays whether processing of IPv6 packets that arrive with UDP checksum 0 is allowed or disallowed  Disallow — packets are discarded Allow — the arriving packets are processed
Sample Window	Displays the header for sample window objects
Interval Multiplier	Displays the number of probes in the sample window, multiplying this value and the interval
Aggregate Sample Window	Displays the calculated length of the window in seconds
Sample Multiplier	Displays the number of sample windows in the aggregate sample window
Duration	Displays the calculated length of the window, in seconds
Relative Threshold	Displays the configured percentage difference comparing the current and previously reported measurements
Absolute Threshold	Displays the configured microsecond difference comparing the current and previously reported measurements
Window Integrity	Displays the minimum number of measurements, expressed as a percentage, before the window is consider integral
Active Interfaces	Displays the number of interfaces actively (Oper Up) referencing the link measurement template

Label	Description
Total Interfaces	Displays the number of interfaces referencing the link measurement template, regardless of operational state

## 15.47 measurement-template-using

### measurement-template-using

#### Syntax

**measurement-template-using** [*measurement-template*]

#### Context

**[Tree]** (show>test-oam>link-measurement measurement-template-using)

#### Full Context

show test-oam link-measurement measurement-template-using

#### Description

This command displays the link measurement templates and the IP interfaces associated with those templates.

The base command provides a single list of all measurement templates, but the command can filter and produce output for a single measurement template.

#### Parameters

##### *measurement-template*

Specifies the link measurement template name, up to 64 characters, for which to display a filtered list.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of link measurement template information, and [Table 305: Output Fields: Measurement Template Using](#) describes the output fields.

#### Output Example

```
show test-oam link-measurement measurement-template-using
=====
Measurement Templates
=====
Template Name
Interface Name                                     Protocol
-----
```

```
standard-direct
int-PE-1-PE-2 IPv6
int-PE-1-PE-3 IPv4
int-PE-1-PE-4 IPv4
=====
```

Table 305: Output Fields: Measurement Template Using

Label	Description
Template Name	The name of the link measurement template
Interface Name	The name of the interface using the link measurement template
Protocol	The IP protocol enabled under the dynamic delay section of the interface: IPv4, IPv6, or None. None indicates no protocol is enabled

## 15.48 megapools

### megapools

#### Syntax

**megapools** *slot-number* **fp** *fp-number* **wred** [**detail**] **queue-group** *queue-group-name* [**instance** *instance-id*]

**megapools** *slot-number* **fp** *fp-number*

**megapools** *slot-number* **fp** *fp-number* **wred** [**detail**] [**service-id** *service-id*]

#### Context

[\[Tree\]](#) (show megapools)

#### Full Context

show megapools

#### Description

This command displays megapool information. A megapool is a mechanism the forwarding plane uses to allow over subscription of buffer pools. Every buffer pool is created in the context of a megapool.

By default, all buffer pools are associated with a single megapool and the pools are not oversubscribed. When WRED queue support is enabled on the FP, three megapools are used.

- The original megapool services the default pools.
- The second megapool services the system internal use pools.
- The third megapool is used by the buffer pools used by the WRED queues.

The traffic manager buffers are allocated to the three megapools without oversubscription. The WRED queue pools are allowed to oversubscribe their megapool, but the megapool protects the pools associated with the other megapools from buffer starvation that could be caused by that over subscription.

## Parameters

### ***slot-number***

Displays information for the specified card slot.

**Values** 1 to 10

### ***fp-number***

Displays information for the specified FP.

**Values** 1 to 8

### **wred**

Displays WRED queue pool information.

### **detail**

Displays detailed information.

### ***queue-group-name***

Displays information for the specified port queue group name, up to 32 characters.

### ***instance-id***

Specifies the identification of a specific instance of the queue group.

**Values** 1 to 65535

### ***service-id***

Specifies the service ID.

**Values** 1 to 2148278381

### ***service-name***

Specifies a service name up to 64 characters.

## Platforms

All

## 15.49 memory-allocation-failure-rate

### memory-allocation-failure-rate

#### Syntax

**memory-allocation-failure-rate** *mda* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*]  
[**current**] [**show-oid**]

**memory-allocation-failure-rate** *mda* [**history-stats-in-count** *count*] [**history-stats-in-min** *minutes*]  
[**current**] [**show-oid**] **esa-vm** *esa-id/vm-id*

## Context

[\[Tree\]](#) (show>isa>stats>tunnel-isa memory-allocation-failure-rate)

## Full Context

show isa statistics tunnel-isa memory-allocation-failure-rate

## Description

This command displays memory allocation failure rate of the specified ISA. The system collects usage information every hour for last 24 hours. The output also includes a current value.

## Parameters

### *mda*

Displays information about the specified ISA.

**Values** slot/mda

### *count*

Displays information for the number of statistics intervals to be displayed (starting with the most recent).

**Values** 1 to 24

### *minutes*

Displays information about the specified period covered by the statistics to be displayed (starting with the most recent).

**Values** 1 to 1440

### **current**

Displays information about the current statistic value. The values of count and minutes are ignored by the system after this parameter is specified.

### **show-oid**

Displays information about the Object Identifier (OID) of the current statistical value.

### **esa-vm**

Displays the ID of the configured ESA and ESA VM.

**Values**

esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show isa stats tunnel-isa memory-allocation-failure-rate** configuration.

### Output Example

```
show>isa>stats>tunnel-isa# memory-allocation-failure-rate 1/2
=====
STATISTICS FOR ISA 1/2
=====
INDEX          VALUE          START TIME          SAMPLING DURATION
-----
ISA MEMORY ALLOCATION FAILURE RATE (FAILURES/HOUR)
1 (CURRENT)    0              2017/05/24 03:00:00 MIN 47 SEC 47
2              0              2017/05/24 02:00:00 HRS 1
3              0              2017/05/24 01:00:00 HRS 1
4              0              2017/05/24 00:00:00 HRS 1
5              0              2017/05/23 23:00:00 HRS 1
6              0              2017/05/23 22:00:00 HRS 1
7              0              2017/05/23 21:00:00 HRS 1
8              0              2017/05/23 20:00:00 HRS 1
9              0              2017/05/23 19:00:00 HRS 1
10             0              2017/05/23 18:00:00 HRS 1
11             0              2017/05/23 17:50:48 MIN 9 SEC 12
-----
NO. OF ENTRIES: 11
=====
```

## 15.50 memory-pools

### memory-pools

#### Syntax

**memory-pools**

#### Context

[\[Tree\]](#) (show>system memory-pools)

#### Full Context

show system memory-pools

#### Description

This command displays system memory status.

#### Platforms

All

## Output

The following output is an example of memory pool information, and [Table 306: System Memory-Pools Field Descriptions](#) describes the output fields.

### Output Example

```
A:ALA-1# show system memory-pools
=====
Memory Pools
=====
Name                Max Allowed    Current Size   Max So Far     In Use
-----
System              No limit      24,117,248    24,117,248    16,974,832
Icc                 8,388,608    1,048,576     1,048,576     85,200
RTM/Policies       No limit      5,242,912     5,242,912     3,944,104
OSPF                No limit      3,145,728     3,145,728     2,617,384
MPLS/RSVP          No limit      9,769,480     9,769,480     8,173,760
LDP                 No limit      0              0              0
IS-IS              No limit      0              0              0
RIP                 No limit      0              0              0
VRRP                No limit      1,048,576     1,048,576     96
BGP                  No limit      2,097,152     2,097,152     1,624,800
BGP                  No limit      2,097,152     2,097,152     1,624,800
Services            No limit      2,097,152     2,097,152     1,589,824
IOM                  No limit      205,226,800   205,226,800   202,962,744
SIM                  No limit      1,048,576     1,048,576     392
CFLOWD              No limit      0              1,048,576     0
CFLOWD              No limit      0              1,048,576     0
IGMP                No limit      0              0              0
PIM                  No limit      0              0              0
ATM                  No limit      2,872,648     2,872,648     2,790,104
PIM                  No limit      0              0              0
MMPI                 No limit      0              0              0
MFIB                 No limit      0              0              0
PIP                  No limit      79,943,024    79,943,024    78,895,248
MBUF                 67,108,864    5,837,328     5,837,328     4,834,280
-----
Current Total Size : 343,495,200 bytes
Total In Use       : 324,492,768 bytes
Available Memory   : 640,178,652 bytes
=====
A:ALA-1#
```

Table 306: System Memory-Pools Field Descriptions

Label	Description
Name	The name of the system or process.
Max Allowed	Integer — The maximum allocated memory size. No Limit — No size limit.
Current Size	The current size of the memory pool.
Max So Far	The largest amount of memory pool used.
In Use	The current amount of the memory pool currently in use.
Current Total Size	The sum of the Current Size column.

Label	Description
Total In Use	The sum of the In Use column.
Available Memory	The amount of available memory.

## 15.51 memory-usage

### memory-usage

#### Syntax

**memory-usage**

#### Context

[\[Tree\]](#) (tools>dump>router>ldp memory-usage)

#### Full Context

tools dump router ldp memory-usage

#### Description

This command dumps memory usage information for LDP.

#### Platforms

All

### memory-usage

#### Syntax

**memory-usage**

#### Context

[\[Tree\]](#) (tools>dump>router>mpls memory-usage)

#### Full Context

tools dump router mpls memory-usage

#### Description

This command dumps memory usage information for MPLS.

#### Platforms

All



## 15.52 mep

### mep

#### Syntax

**mep** *mep-id* **domain** {*md-index* | *md-admin-name*} **association** {*ma-index* | *ma-admin-name*} [ **loopback**]  
[**linktrace**] [**statistics**]

**mep** *mep-id* **domain** {*md-index* | *md-admin-name*} **association** {*ma-index* | *ma-admin-name*} **remote-mepid** *mep-id*

**mep** *mep-id* **domain** {*md-index* | *md-admin-name*} **association** {*ma-index* | *ma-admin-name*} **remote-mepid all-remote-mepids**

**mep** *mep-id* **domain** {*md-index* | *md-admin-name*} **association** {*ma-index* | *ma-admin-name*} **eth-test-results** [**remote-peer** *mac-address*]

**mep** *mep-id* **domain** {*md-index* | *md-admin-name*} **association** {*ma-index* | *ma-admin-name*} **one-way-delay-test** [**remote-peer** *mac-address*]

**mep** *mep-id* **domain** {*md-index* | *md-admin-name*} **association** {*ma-index* | *ma-admin-name*} **two-way-delay-test** [**remote-peer** *mac-address*]

**mep** *mep-id* **domain** {*md-index* | *md-admin-name*} **association** {*ma-index* | *ma-admin-name*} **two-way-slm-test** [**remote-peer** *mac-address*]

#### Context

[\[Tree\]](#) (show>eth-cfm mep)

#### Full Context

show eth-cfm mep

#### Description

This command displays Maintenance Endpoint (MEP) information.

The **show eth-cfm mep** *mep-id* **domain** *md-id* **association** *ma-id* command does not display CCM ERROR, CCM XCON frames in the output.

The **show eth-cfm mep** *mep-id* **domain** *md-id* **association** *ma-id* **remote-mep** *rmep-id* command does not display some TLVs details.

#### Parameters

*mep-id*

Specifies the integer that is unique among all the MEPs in the same MA.

**Values** 1 to 8191

**domain** *md-index*

Specifies the index of the MD to which the MP is associated, or 0, if none.

**Values** 1 to 4294967295

*md-admin-name*

Specifies the MD name, up to 64 characters.

**association** *ma-index*

Specifies the index to which the MP is associated, or 0, if none.

**Values** 1 to 4294967295

*ma-admin-name*

Specifies the MA name, up to 64 characters.

**loopback**

Keyword to display loopback information for the specified MEP.

**linktrace**

Keyword to display linktrace information for the specified MEP.

**remote-mepid** *mep-id*

Keyword to display specified remote MEP ID information for specified the MEP.

**all-remote-mepids**

Keyword to display all remote MEP ID information for the specified MEP.

**eth-test-results**

Keyword to display eth-test-result information for the specified MEP.

**eth-bn-notification**

Specifies to display ETH-bandwidth information for the specified MEP.

**one-way-delay-test**

Keyword to display one-way-delay-test information for the specified MEP.

**two-way-delay-test**

Keyword to display two-way-delay-test information for the specified MEP.

**two-way-slm-test**

Keyword to display two-way-slm-test information for the specified MEP.

**remote-peer** *mac-address*

Keyword to include remote MEP ID information for the specified MEP.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following outputs are examples of ETH-CFM MEP information, and the associated tables describe the output fields.

- [Output Example \(MEPs, linktrace, and loopback\)](#), [Table 307: Output fields: MEP, linktrace, and loopback](#)
- [Output Example \(delay test\)](#), [Table 308: Output fields: ETH-CFM MEP delay test](#)

### Output Example (MEPs, linktrace, and loopback)

```

show eth-cfm mep 2 domain 10 association 11400115
=====
Eth-Cfm MEP Configuration Information
=====
Md-index          : 10                Direction        : Down
Ma-index          : 11400115          Admin            : Enabled
Md-admin-name     : 10
Ma-admin-name     : 11400115
MepId             : 2                CCM-Enable      : Enabled
Port              : 1/1/4            VLAN             : 0
Description       : (Not Specified)
FngAlarmTime     : 0                FngResetTime    : 0
FngState          : fngReset         ControlMep       : False
LowestDefectPri   : macRemErrXcon    HighestDefect    : none
Defect Flags      : None
Mac Address       : 00:00:00:00:00:28 Collect LMM Stats : disabled
LMM FC Stats      : None
LMM FC In Prof    : None
TxAis             : noTransmit       TxGrace          : noTransmit
Facility Fault    : disabled
CcmLtmPriority    : 7                CcmPaddingSize  : 0 octets
CcmTx             : 2760850          CcmSequenceErr  : 8394
CcmTxIfStatus    : Absent           CcmTxPortStatus : Absent
CcmTxRdi         : False            CcmTxCcmStatus  : transmit
CcmIgnoreTLVs    : (Not Specified)
Fault Propagation: disabled         FacilityFault    : Ignore
MA-CcmInterval   : 1                MA-CcmHoldTime  : 0ms
MA-Primary-Vid   : Disabled
Eth-1Dm Threshold: 3(sec)           MD-Level         : 0
Eth-1Dm Last Dest: 00:00:00:00:00:00
Eth-Dmm Last Dest: 00:00:00:00:00:00
Eth-Ais          : Disabled
Eth-Ais Tx defCCM: allDef
Eth-Tst          : Enabled           Eth-Tst Pattern  : allZerosCrc
Eth-Tst dataLeng*: 64               Eth-Tst Priority : 7
Eth-Tst Dest Mac : 00:00:00:00:00:00 Eth-Tst Dest MEP : 0
Eth-Tst Threshold: 1(bitError)
Eth-Tst Last Dest: 00:00:00:00:00:00
Eth-CSF          : Disabled

Eth-Cfm Grace Tx : Enabled           Eth-Cfm Grace Rx : Enabled
Eth-Cfm ED Tx    : Disabled          Eth-Cfm ED Rx    : Enabled
Eth-Cfm ED Rx Max: 0
Eth-Cfm ED Tx Pri: CcmLtmPri (7)

Eth-BNM Receive  : Disabled          Eth-BNM Rx Pacing : 5

Eth-Cfm Vlan Tag : n/a

Redundancy:
  MC-LAG State : n/a

CcmLastFailure Frame:
  None

XconCcmFailure Frame:
  None
=====
* indicates that the corresponding row element may have been truncated.
    
```

```
*A:dut-a# show eth-cfm mep 10 domain 1 association 1 linktrace
```

```

=====
Eth-Cfm MEP Configuration Information
=====
Md-index      : 1                Direction      : Down
Ma-index      : 1                Admin          : Enabled
MepId         : 10              CCM-Enable    : Enabled
IfIndex       : 36241408        PrimaryVid     : 0
Description   : (Not Specified)
FngAlarmTime  : 0                FngResetTime  : 0
FngState      : fngReset         ControlMep    : False
LowestDefectPri : macRemErrXcon
HighestDefect : none
Defect Flags  : None
Mac Address   : 40:7c:7d:4b:38:f2 Collect LMM Stats : enabled
CcmLtmPriority : 7                CcmPaddingSize : 0 octets
CcmTx         : 0                CcmSequenceErr : 0
CcmIgnoreTLVs : (Not Specified)
Fault Propagation: disabled      FacilityFault  : n/a
MA-CcmInterval : 1                MA-CcmHoldTime : 0ms
MA-Primary-Vid : Disabled
Eth-1Dm Threshold: 3(sec)        MD-Level      : 1
Eth-Ais       : Disabled
Eth-Ais Tx defCCM: allDef
Eth-Tst       : Disabled
Eth-CSF       : Disabled
Redundancy:
  MC-LAG State : n/a
CcmLastFailure Frame:
  None
XconCcmFailure Frame:
  None
-----
Mep Linktrace Message Information
-----
LtRxUnexplained : 0                LtNextSequence : 2
LtStatus         : False            LtResult        : False
TargIsMepId     : False            TargMepId       : 0
TargMac         : 00:00:00:00:00:00 TTL             : 64
EgressId        : 00:00:40:7c:7d:4b:38:f2 SequenceNum     : 1
LtFlags         : useFDBOnly
-----
Mep Linktrace Replies
-----
SequenceNum     : 1                ReceiveOrder    : 1
Ttl             : 63                Forwarded       : False
LastEgressId   : 00:00:40:7c:7d:4b:38:f2 TerminalMep    : True
NextEgressId   : n/a                Relay           : rlyHit
IngressMac     : 0c:54:b9:ac:0e:b7  IngressAction  : ingOk
IngrPortIdSubType: unknown value (0)
IngressPortId :
  None
EgressMac      : 00:00:00:00:00:00  EgressAction   : egrNoTlv
EgrPortIdSubType: unknown value (0)
EgressPortId  :
  None
Org Specific TLV : (Not Specified)
-----
=====
*A:dut-a# show eth-cfm mep 10 domain 1 association 1 loopback
=====
Eth-Cfm MEP Configuration Information
=====
Md-index      : 1                Direction      : Down
Ma-index      : 1
    
```

```

Admin          : Enabled
MepId         : 10
IfIndex       : 36241408
Description    : (Not Specified)
FngAlarmTime  : 0
FngState      : fngReset
LowestDefectPri : macRemErrXcon
Defect Flags  : None
Mac Address   : 40:7c:7d:4b:38:f2
CcmLtmPriority : 7
CcmTx        : 0
CcmIgnoreTLVs : (Not Specified)
Fault Propagation: disabled
MA-CcmInterval : 1
MA-Primary-Vid : Disabled
Eth-1Dm Threshold: 3(sec)
Eth-Ais      : Disabled
Eth-Ais Tx defCCM: allDef
Eth-Tst     : Disabled
Eth-CSF     : Disabled
Redundancy:
  MC-LAG State : n/a
CcmLastFailure Frame:
  None
XconCcmFailure Frame:
  None
-----
Mep Loopback Information
-----
LbRxReply      : 1
LbRxBadMsdu   : 0
LbSequence    : 1
LbStatus      : False
DestIsMepId   : False
DestMac       :
LbRxBadOrder  : 0
LbTxReply     : 0
LbNextSequence : 2
LbResultOk    : False
DestMepId     : 0
    
```

Table 307: Output fields: MEP, linktrace, and loopback

Label	Description
Mep Information	
Md-index	Displays the MD index of the domain
Direction	Displays the direction of OAMPDU transmission
Ma-index	Displays the MA index of the association
Admin	Displays the administrative status of the MEP
Md-admin-name	Displays the administrative MD name.
Ma-admin-name	Displays the administrative MA name.
MepId	Displays the MEP identifier
CCM-Enable	Displays the status of the CCM (enabled or disabled)
IfIndex	Displays the index of the interface

Label	Description
PrimaryVid	Displays the identifier of the primary VLAN
FngState	Indicates the different states of the Fault Notification Generator
LowestDefectPri	Displays the lowest priority defect (a configured value) that is allowed to generate a fault alarm
HighestDefect	Identifies the highest defect that is present For example, if defRDICCM and defXconCCM are present, the highest defect is defXconCCM.
Defect Flags	Displays the number of defect flags
Mac Address	Displays the MAC address of the MEP
CcmLtmPriority	Displays the priority value transmitted in the linktrace messages (LTM)s and CCMs for this MEP The MEP must be configured on a VLAN.
CcmTx	Displays the number of Continuity Check Messages (CCM) sent The count is taken from the last polling interval (every 10 s).
CcmSequenceErr	Displays the number of CCM errors
Eth-1DM Threshold	Displays the one-way-delay threshold value
Eth-Ais	Displays the state of the ETH-AIS test (enabled or disabled)
Eth-Tst	Displays the state of the ETH-Test (enabled or disabled)
CcmLastFailure Frame	Displays the frame that caused the last CCM failure
XconCcmFailure Frame	Displays the frame that caused the XconCCMFailure
Mep Linktrace Message Information	
LtRxUnexplained	Displays the number of unexplained linktrace messages (LTM) that have been received
LtNextSequence	Displays the sequence number of the next linktrace message
LtStatus	Displays the status of the linktrace
LtResult	Displays the result of the linktrace

Label	Description
TargIsMepId	Identifies whether the target interface has a MEP-ID (true or false)
TargMepId	Displays the MEP-ID of the target interface
TargMac	Displays the MAC address of the target interface
TTL	Displays the TTL value
EgressId	Displays the egress ID of the linktrace message
SequenceNum	Displays the sequence number of the linktrace message
LtFlags	Displays the linktrace flags
<b>Mep Linktrace Replies</b>	
SequenceNum	Displays the sequence number returned by a previous transmit linktrace message, indicating which linktrace message response is returned
ReceiveOrder	Displays the order in which the linktrace initiator received the linktrace replies
Ttl	Displays the TTL field value for a returned linktrace reply
Forwarded	Indicates whether the linktrace message was forwarded by the responding MEP
LastEgressId	<p>Displays the last egress identifier returned in the linktrace reply egress identifier TLV of the linktrace reply</p> <p>The last egress identifier identifies the MEP linktrace initiator that initiated, or the linktrace responder that forwarded, the linktrace message for which this linktrace reply is the response.</p> <p>This is the same value as the egress identifier TLV of that linktrace message.</p>
TerminalMep	Indicates whether the forwarded linktrace message reached a MEP enclosing its MA
NextEgressId	<p>Displays the next egress identifier returned in the linktrace reply egress identifier TLV of the linktrace reply</p> <p>The next egress identifier identifies the linktrace responder that transmitted this linktrace reply and can forward the linktrace message to the next hop. This is the same value as the egress identifier TLV of the forwarded linktrace message, if any.</p>
Relay	Displays the value returned in the Relay Action field

Label	Description
IngressMac	Displays the MAC address returned in the ingress MAC address field
Ingress Action	Displays the value returned in the Ingress Action field of the linktrace message
IngressPortIdSubType	Displays the format of the ingress port ID
IngressPortId	Displays the ingress port ID; the format is determined by the value of the IngressPortIdSubType
EgressMac	Displays the MAC address returned in the egress MAC address field
Egress Action	Displays the value returned in the Egress Action field of the linktrace message
EgressPortIdSubType	Displays the format of the egress port ID
EgressPortId	Displays the egress port ID; the format is determined by the value of the EgressPortIdSubType
Org Specific TLV	Displays all organization-specific TLVs returned in the linktrace reply, if any  Includes all octets including and following the TLV length field of each TLV, concatenated
<b>Mep Loopback Information</b>	
LbRxReply	Displays the number of received loopback (LB) replies
LbRxBadOrder	Displays the number of received loopback messages that are in a bad order
LbRxBadMsdU	Displays the number of loopback replies that have been received with the wrong destination MAC address (MSDU = MAC Service Data Unit)
LbTxReply	Displays the number of loopback replies transmitted out this MEP
LbSequence	Displays the sequence number in the loopback message
LbNextSequence	Displays the next loopback sequence
LbStatus	True — Loopback is in progress False — No loopback is in progress
LbResultOk	Displays the result of the loopback test
DestIsMepId	Identifies whether the destination interface has a MEP-ID (true or false)



Label	Description
DestMepld	Displays the MEP-ID of the destination interface
DestMac	Displays the MAC address of the destination interface

**Output Example (delay test)**

```
*A:node-2# show eth-cfm mep 10 domain 1 association 1 two-way-slm-test
=====
Eth CFM Two-way SLM Test Result Table (Test-id: 2147483649)
=====
Peer Mac Addr      Remote MEP      Count      In Loss      Out Loss      Unack
-----
0c:54:b9:ac:0e:b7      11              1           0            0            0
=====
*A:dut-a#
```

```
*A:node-3# show eth-cfm mep 1 domain 4 association 4 two-way-delay-test remote-
peer 00:25:ba:00:5e:bf
=====
Eth CFM Two-way Delay Test Result Table
=====
Peer Mac Addr      Delay (us)      Delay Variation (us)
-----
00:25:ba:00:5e:bf      507              507
=====
```

```
*A:dut-3# show eth-cfm mep 1 domain 4 association 4 two-way-delay-test
=====
Eth CFM Two-way Delay Test Result Table
=====
Peer Mac Addr      Delay (us)      Delay Variation (us)
-----
00:25:ba:00:5e:bf      507              507
=====
```

```
*A:node-2# show eth-cfm mep 2 domain 4 association 4 eth-test-results remote-
peer 00:25:ba:01:c3:6a
=====
Eth CFM ETH-Test Result Table
=====
Peer Mac Addr      FrameCount      Current          Accumulate
ByteCount          ErrBits         CrcErrs         ErrBits
CrcErrs
-----
00:25:ba:01:c3:6a 6                0                0
384                0                0
=====
```

```
*A:node-2# show eth-cfm mep 2 domain 4 association 4 eth-test-results
=====
Eth CFM ETH-Test Result Table
=====
Peer Mac Addr      FrameCount      Current          Accumulate
ByteCount          ErrBits         CrcErrs         ErrBits
CrcErrs
-----
00:25:ba:01:c3:6a 6                0                0
384                0                0
=====
```

```
*A:node-2# show eth-cfm mep 2 domain 4 association 4 one-way-delay-test remote-
peer 00:25:ba:01:c3:6a
=====
Eth CFM One-way Delay Test Result Table
=====
Peer Mac Addr          Delay (us)          Delay Variation (us)
-----
00:25:ba:01:c3:6a     402                402
=====

*A:node-2# show eth-cfm mep 2 domain 4 association 4 one-way-delay-test
=====
Eth CFM One-way Delay Test Result Table
=====
Peer Mac Addr          Delay (us)          Delay Variation (us)
-----
00:25:ba:01:c3:6a     402                402
=====
```

Table 308: Output fields: ETH-CFM MEP delay test

Label	Description
Peer Mac Addr	Displays the MAC address of the peer (remote) entity
Delay (us)	Displays the measured delay (in microseconds) for the DM test
Delay Variation (us)	Displays the measured delay variation (in microseconds) for the DV test

## mep

### Syntax

**mep** *mep-id* **domain** *md-index* **association** *ma-index* **statistics**

### Context

[\[Tree\]](#) (clear>eth-cfm mep)

### Full Context

clear eth-cfm mep

### Description

This command clears the MEP parameters.

### Parameters

***mep-id***

Specifies the MEP ID.

**Values** 1 to 8191

***md-index***

Specifies the MD index.

**Values** 1 to 4294967295

***ma-index***

Specifies the MA index.

**Values** 1 to 4294967295

**statistics**

Clears the MEP statistics.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 15.53 mesh-sdp

### mesh-sdp

**Syntax**

**mesh-sdp** *sdp-id*[:*vc-id*] { **all** | **counters** | **stp** | **mrp**}

**Context**

[\[Tree\]](#) (clear>service>statistics>id mesh-sdp)

**Full Context**

clear service statistics id mesh-sdp

**Description**

This command clears the statistics for a particular mesh SDP bind.

**Parameters**

***sdp-id***

Specifies the SDP ID for which to display information

**Default** All SDPs.

**Values** 1 to 17407

***vc-id***

Displays information about the virtual circuit identifier.

**Values** 1 to 4294967295

**all**

Clears all queue statistics and STP statistics associated with the SDP

**counters**

Clears all queue statistics associated with the SDP

**stp**

Clears all STP statistics associated with the SDP

**mrp**

Clears all MRP statistics associated with the SDP

**Platforms**

All

## mesh-sdp

**Syntax**

**mesh-sdp** *sdp-id[:vc-id]* **ingress-vc-label**

**mesh-sdp** *sdp-id[:vc-id]* **vccv-bfd** {**session** | **statistics**}

**Context**

[\[Tree\]](#) (clear>service>id mesh-sdp)

**Full Context**

clear service id mesh-sdp

**Description**

This command clears and resets the mesh SDP binding.

**Parameters**

***sdp-id***

The spoke-SDP ID for which to clear statistics.

**Values** 1 to 17407

***vc-id***

The virtual circuit ID on the SDP ID to be reset.

**Values** 1 to 4294967295

**ingress-vc-label**

Specifies to clear the ingress VC label.

### **vccv-bfd session**

Specifies to clear the session mismatch flag on the mesh-SDP binding after the flag was set to true by a detected mismatch between the configured parameters and the received parameters.

### **vccv-bfd statistics**

Specifies to clear a VCCV BFD session statistics for a specified mesh-SDP.

## **Platforms**

All

## **15.54 mfib**

### **mfib**

#### **Syntax**

**mfib** [**ipv4** | **ipv6** | **mac**]

**mfib brief**

**mfib group** *group-address* [**statistics**]

**mfib statistics** [**ipv4** | **ipv6** | **mac**]

#### **Context**

[\[Tree\]](#) (show>service>id mfib)

#### **Full Context**

show service id mfib

#### **Description**

This command displays the multicast FIB on the VPLS service.

#### **Parameters**

##### **brief**

Displays a brief output

##### **statistics**

Displays statistics on the multicast FIB

##### **ipv4**

Displays IPv4 address information

##### **ipv6**

Displays IPv6 address information

##### **mac**

Displays MAC address information

**group-address**

Displays the multicast FIB for a specific multicast group address

**Platforms**

All

**Output**

The following command displays multicast FIB information and [Table 309: Multicast FIB Fields](#) describes the output fields.

```
show service id mfib
```

**Output Example**

```
=====
Multicast FIB, Service 1
=====
Source Address  Group Address          Port Id                Svc Id  Fwd
Blk
-----
10.0.0.2        233.252.0.1           sap:1/1/1             Local   Fwd
                  sap:1/1/2             Local   Fwd
2001:db8:1000:* ff0e:db8:1000::1     sap:1/1/1             Local   Fwd
                  sap:1/1/2             Local   Fwd
2001:db8:1001:* ff0e:db8:1001::1     sap:1/1/1             Local   Fwd
                  sap:1/1/2             Local   Fwd
-----
Number of entries: 3
=====
```

The following command displays multicast FIB IPv4 information and [Table 309: Multicast FIB Fields](#) describes the output fields.

```
show service id mfib ipv4
```

**Output Example**

```
=====
Multicast FIB, Service 1
=====
Source Address  Group Address          Port Id                Svc Id  Fwd
Blk
-----
10.0.0.2        233.252.0.1           sap:1/1/1             Local   Fwd
                  sap:1/1/2             Local   Fwd
-----
Number of entries: 1
=====
```

The following command displays multicast FIB IPv6 information and [Table 309: Multicast FIB Fields](#) describes the output fields.

```
show service id mfib ipv6
```

### Output Example

```

=====
Multicast FIB, Service 1
=====
Source Address      Group Address      Port Id      Svc Id  Fwd
                    Group Address      Port Id      Svc Id  Blk
-----
2001:db8:1000::1   ff0e:db8:1000::1  sap:1/1/1   Local   Fwd
                    ff0e:db8:1000::1  sap:1/1/2   Local   Fwd
2001:db8:1001::1   ff0e:db8:1001::1  sap:1/1/1   Local   Fwd
                    ff0e:db8:1001::1  sap:1/1/2   Local   Fwd
-----
Number of entries: 2
    
```

The following command displays multicast FIB statistics information and [Table 309: Multicast FIB Fields](#) describes the output fields.

```
show service id mfib statistics
```

### Output Example

```

=====
Multicast FIB Statistics, Service 10000
=====
Source Address  Group Address      Matched Pkts      Matched Octets
                    Group Address      Matched Pkts      Forwarding Rate
-----
10.0.0.4        239.0.0.4          10914              1069572
*                * (mac)              0                   0
                    * (mac)              0                   0.000 kbps
-----
Number of entries: 2
=====
    
```

The following command shows which ISIDs are local and [Table 309: Multicast FIB Fields](#) describes the output fields. The **mfib** command option displays ISIDs that are local and advertised. Static ISIDs are included in this display. However, ISID policy can override the ISIDs that are designated to use the default multicast tree and these do not show up in the MFIB. This is displayed on a B-VPLS control service.

```
show service id mfib
```

### Output Example

```

=====
Multicast FIB, Service 510
=====
Source Address  Group Address      Sap/Sdp Id      Svc Id  Fwd/Blk
-----
*                01:1E:83:00:01:F4  b-sap:1/1/22:510  Local   Fwd
*                01:1E:83:00:01:F5  b-sap:1/1/22:510  Local   Fwd
*                01:1E:83:00:01:F6  b-sap:1/1/22:510  Local   Fwd
    
```

```

*          01:1E:83:00:01:F7      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:F8      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:F9      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:FA      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:FB      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:FC      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:FD      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:FE      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:01:FF      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:02:00      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:02:01      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:02:02      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:02:03      b-sap:1/1/22:510      Local   Fwd
*          01:1E:83:00:02:04      b-sap:1/1/22:510      Local   Fwd
-----
Number of entries: 21
=====
    
```

The following command shows the ISID policy under a B-VPLS and [Table 309: Multicast FIB Fields](#) describes the output fields.

```
show service id isid-policy
```

### Output Example

```

=====
Isid Policy Range
=====
Entry      Range          AdvLocal  UseDefMCTree
-----
2          1500-1600      Disabled  Enabled
=====
    
```

The following command shows the MFIB for an EVPN-MPLS service and [Table 309: Multicast FIB Fields](#) describes the output fields.

```
show service id mfib
```

### Output Example

```

=====
Multicast FIB, Service 1
=====
Source Address  Group Address      Sap/Sdp Id          Svc Id  Fwd
Blk
-----
*              239.0.0.1         sap:1/1/9:1         Local   Fwd
                eMpls:1.1.1.2:262141  Local   Fwd
                eMpls:1.1.1.3:262141  Local   Fwd
-----
Number of entries: 1
=====
*A:PE#
    
```



Table 309: Multicast FIB Fields

Label	Description
Multicast FIB, Service	
Source Address	IPv4 unicast source address
Group Address	IPv4 multicast group address
SAP ID	Indicates the SAP/SDP to which the corresponding multicast stream are forwarded or blocked
Forwarding/Blocking	Indicates whether the corresponding multicast stream is blocked or forwarded
Number of Entries	Specifies the number of entries in the MFIB
Forwarded Packets	Indicates the number of multicast packets forwarded for the corresponding source/group
Forwarded Octets	Indicates the number of octets forwarded for the corresponding source/group
Svc ID	Indicates the service to which the corresponding multicast stream is forwarded or blocked. Local means that the multicast stream is forwarded or blocked to a SAP or SDP local to the service.
Multicast FIB Statistics, Service	
Matched Pkts	The number of matched packets
Matched Octets	The number of matched octets
Forwarding Rate	The forwarding rate
Isid Policy Range	
Entry	ISID policy entry number
Range	ISID policy range
AdvLocal	The AdvLocal state
UseDefMCTree	The UseDefMCTree state

## mfib

### Syntax

**mfib** [group-mac *ieee-address*] [**isid** *isid*]

## Context

[\[Tree\]](#) (show>service>id>spb mfib)

## Full Context

show service id spb mfib

## Description

This command displays multicast forwarding data-base (MFIB) information.

## Parameters

### *ieee-address*

Specifies a MAC address

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

### *isid*

Specifies an I-SID

**Values** 0 to 16777215

## Platforms

All

## Output

The following output is an example of service SPB MFIB information.

### Output Example

```
*A:Dut-A# show service id 100001 spb mfib
=====
User service MFIB information
=====
MacAddr          ISID      Status
-----
01:1E:83:00:27:11 10001    Ok
-----
Entries found: 1
=====
```

## mfib

## Syntax

**mfib**

## Context

[\[Tree\]](#) (clear>service>id mfib)

### Full Context

clear service id mfib

### Description

Commands in this context clear multicast FIB info for the VPLS service.

### Platforms

All

## 15.55 mgmt-ethernet

```
mgmt-ethernet
```

### Syntax

```
mgmt-ethernet
```

### Context

[\[Tree\]](#) (show>redundancy mgmt-ethernet)

### Full Context

```
show redundancy mgmt-ethernet
```

### Description

This command displays the management Ethernet port redundancy status. The **show router "management" interface** command can also display the CPM Ethernet port used by the management interface. If the port of the primary CPM is active, it shows "A/1" under the Port/SapId field. If the port of the secondary CPM is active, it shows "B/1 -> A/1" in the Port/SapId field.

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-2s, 7750 SR-7s, 7750 SR-14s, 7950 XRS

### Output

The following output is an example of management Ethernet port redundancy information, and [Table 310: Output fields: redundancy mgmt-ethernet](#) describes the output fields.

### Output example

```
show redundancy mgmt-ethernet
=====
Management Ethernet Redundancy
=====
Admin Status   : Enabled
Oper Status    : Management port operating on active CPM
Revert Time    : 5 seconds
=====
```

Table 310: Output fields: redundancy mgmt-ethernet

Label	Description
Admin Status	Enabled — Administrative status is enabled Disabled — Administrative status is disabled
Oper Status	Up — The interface is operationally enabled Down — The interface is operationally shutdown
Revert Time	The wait duration (in seconds) before reverting to the management Ethernet port of the primary CPM

**Output example - show router "management" interface**

The following output is an example of CPM's Ethernet port information, and [Table 311: Output fields: router "management" interface](#) describes the output fields. When the primary CPM Ethernet port is active, the output displays the Port/SapId information as "A1". When the port of the secondary CPM is active, the output displays the Port/SapId information as "B/1 -> A/1".

```

show router "management" interface
=====
Interface Table (Router: management)
=====
Interface-Name      Adm      Opr(v4/v6)  Mode      Port/SapId
IP-Address          PfxState
-----
management          Up       Up/Up       Network  B/1 -> A/1
192.168.186.219/24  n/a
2001:db8::8a78:badb/96  PREFERRED
fe80::221:5ff:fece:df49/64  PREFERRED
-----
Interfaces : 1
=====
    
```

Table 311: Output fields: router "management" interface

Label	Description
Interface-Name	The interface name
Adm	Up — The interface is administratively enabled Down — The interface is administratively shutdown
Opr (v4/v6)	Up — The interface is operationally enabled Down — The interface is operationally shutdown
Mode	Network — the IP interface is a network/core IP interface Service — the IP interface is a service IP interface
Port/SapId	The physical network port or the SAP identifier associated with the interface

Label	Description
IP-Address	The IP address of the interface
PfxState	The prefix state associated with the interface

**Output example - show port "A1"**

The following output is an example of CPM Ethernet port information when management Ethernet port redundancy is active, and [Table 312: Output fields: port "A1"](#) describes the output fields.

```
show port A/1

=====
Ethernet Interface
=====
Description      : 10/100/Gig Ethernet TX
Interface        : A/1 -> B/1          Oper Speed      : A/1 -> B/1
Link-level      : Ethernet           Config Speed    : 1 Gbps
Admin State     : up                 Oper Duplex     : A/1 -> B/1
Oper State      : A/1 -> B/1
Config Duplex   : full
Physical Link   : A/1 -> B/1          MTU             : 1514
...

```

*Table 312: Output fields: port "A1"*

Label	Description
Description	A text description for the entity
Interface	Displays the physical port ID in the form <i>slot/mda/port</i> for all ports except QSFP28 and QSFP-DD ports, or <i>slot/mda/cconnector/port</i> for QSFP28 and QSFP-DD ports  Displays the status of the Ethernet link behavior if management port redundancy is enabled (for example, A/1 -> B/1)
Link-level	Ethernet — The port is configured as Ethernet
Oper Duplex	full — The link is set to full duplex mode half — The link is set to half duplex mode  Displays the status of the Ethernet link behavior if management port redundancy is enabled (for example, A/1 -> B/1)
Admin State	Up — The entity is administratively up Down — The entity is administratively down
Oper Speed	The operating speed of the interface  Displays the status of the Ethernet link behavior if management port redundancy is enabled (for example, A/1 -> B/1)
Oper State	up — The entity is operationally up down — The entity is operationally down

Label	Description
	<p>Additionally, the <i>lag-id</i> of the LAG it belongs to in addition to the status of the LAG member (active or standby) is specified</p> <p>Displays the status of the Ethernet link behavior if management port redundancy is enabled (for example, A/1 -&gt; B/1)</p>
Config Duplex	<p>Full — The link is set to full duplex mode</p> <p>Half — The link is set to half duplex mode</p>
Physical Link	<p>Yes — A physical link is present</p> <p>No — A physical link is not present</p> <p>Displays the status of the Ethernet link behavior if management port redundancy is enabled (for example, A/1 -&gt; B/1)</p>
MTU	Displays the size of the largest packet which can be sent/received on the Ethernet physical interface, specified in octets

## mgmt-ethernet

### Syntax

**mgmt-ethernet**

### Context

[\[Tree\]](#) (tools>perform>redundancy mgmt-ethernet)

### Full Context

tools perform redundancy mgmt-ethernet

### Description

This command triggers the redundancy mode, which causes the router to act as if the management Ethernet port of the primary CPM has gone down. The router reverts if the management Ethernet port of the primary CPM has been up for the revert duration.

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-2s, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## 15.56 mgw-address-cache

### mgw-address-cache

#### Syntax

**mgw-address-cache**

#### Context

[\[Tree\]](#) (clear>router>gtp>uplink mgw-address-cache)

#### Full Context

clear router gtp uplink mgw-address-cache

#### Description

This command clears the DNS resolution cache for all APNs known in this router. After execution, every APN to address mapping is learned again using DNS.

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

### mgw-address-cache

#### Syntax

**mgw-address-cache**

#### Context

[\[Tree\]](#) (clear>router>wlan-gw mgw-address-cache)

#### Full Context

clear router wlan-gw mgw-address-cache

#### Description

This command clears the mobile gateway's DNS lookup address cache.

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## mgw-address-cache

### Syntax

```
mgw-address-cache [arec] [snaptr] [srv]  
mgw-address-cache apn apn-domain-string
```

### Context

[\[Tree\]](#) (show>router>gtp>uplink mgw-address-cache)

### Full Context

```
show router gtp uplink mgw-address-cache
```

### Description

This command displays the mobile gateway's DNS lookup address cache.

### Parameters

#### **arec**

Displays A-records.

#### **snaptr**

Displays Straightforward-NAPTR information.

#### **srv**

Displays SRV records.

#### ***apn-domain-string***

Specifies the Access Point Name (APN) of this DNS cache entry.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## mgw-address-cache

### Syntax

```
mgw-address-cache [arec] [snaptr] [srv]  
mgw-address-cache apn apn-domain-string
```

### Context

[\[Tree\]](#) (show>router>gtp>uplink mgw-address-cache)

### Full Context

```
show router gtp uplink mgw-address-cache
```



## Description

This command displays the mobile gateway's DNS lookup address cache.

## Parameters

### ***apn-domain-string***

Specifies the Access Point Name (APN) of this DNS cache entry, up to 108 characters.

### **arec**

Displays A-records.

### **snaptr**

Displays Straightforward-NAPTR information.

### **srv**

Displays SRV records.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 15.57 micro-segment-local-sid

### micro-segment-local-sid

## Syntax

```
micro-segment-local-sid [ipv6-prefix[/prefix-length]] [longer] [micro-segment-locator ms-locator-name]  
[context contextf] [ua] [udt4] [udt6] [udt46] [udx2] [udt2u] [udt2m] [un]
```

## Context

[\[Tree\]](#) (show>router>srv6 micro-segment-local-sid)

## Full Context

```
show router segment-routing-v6 micro-segment-local-sid
```

## Description

This command displays SRv6 locally-configured micro-SID information.

## Parameters

### ***ipv6-prefix[/prefix-length]***

Displays routes only matching the specified IP address and length.

**Values** *ipv6-prefix[/prefix]*: x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x.d.d.d.d  
x: [0 to FFFF]H

d: [0 to 255]D  
*prefix-length*: 1 to 128

**longer**

Displays the specified route and subsets of the route.

***ms-locator-name***

Specifies the micro-segment locator name, up to 64 characters.

***context***

Specifies the context for which to display micro-segment local micro-SID information.

**Values** *vprn-svc-name*, *vprn-svc-id*, 'Base'

**ua**

Displays the uA SID associated with a P2P interface.

**udt4**

Displays the uDT4 function associated with the specified context.

**udt6**

Displays the uDT6 function associated with the specified context.

**udt46**

Displays the uDT46 function associated with the specified context.

**udx2**

Displays the uDX2 function associated with the SRv6 instance in the service.

**udt2u**

Displays the uDT2U function associated with the SRv6 instance in the service.

**udt2m**

Displays the uDT2M function associated with the SRv6 instance in the service.

**un**

Displays the uN SID function of a locator.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## 15.58 micro-segment-locator

### micro-segment-locator

**Syntax**

**micro-segment-locator** [mt {0 | 2}] [**prefix** *ipv6-prefix*[/*prefix-length*]] [**adv-router** *system-id* | *hostname*]  
[**algo** *algo-id*]

## Context

[\[Tree\]](#) (show>router>isis>srv6 micro-segment-locator)

## Full Context

show router isis segment-routing-v6 micro-segment-locator

## Description

This command displays the IS-IS SRv6 micro-segment locators.

## Parameters

### **ipv6-prefix[/prefix-length]**

Displays routes only matching the specified *ip-address* and length.

**Values** *ipv6-prefix[/prefix]*: x:x:x:x:x:x:x (eight 16-bit pieces)  
 x:x:x:x:x:d.d.d.d  
 x: [0 to FFFF]H  
 d: [0 to 255]D  
*prefix-length*: 1 to 128

### **system-id | hostname**

Displays information for the specific IS-IS advertising router. The host name can be up to 38 characters.

### **algo-id**

Displays information for the specified algorithm.

**Values** 0 to 255

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## Output

[Table 313: Micro-segment locator output](#) describes the micro-segment locator output fields.

Use the following command to display micro-segment locator information.

```
show router isis segment-routing-v6 micro-segment-locator
```

## Output Example

```
=====
Rtr Base ISIS Instance 0 SRv6 Micro Segment Locator Table
=====
Prefix                               AdvRtr                               MT    Lvl/Typ
AttributeFlags                       Tag                                  Flags Algo
-----
300::/96                             Dut-C                                2     1/Int.
-                                     0                                   -     0
-----
No. of Micro Segment Locators: 1
```

```

-----
AttributeFlags: X   = External Prefix
                 R   = Re-advertisement
                 N   = Node
                 E   = ELC
                 A   = Anycast
Flags:          D   = Down
=====
    
```

Table 313: Micro-segment locator output

Label	Description
Prefix	Displays the prefix
AdvRtr	Displays the advanced router information
MT	Displays the MT information
Lvl/Typ	Displays the level or type information
AttributeFlags	Displays the attribute flag information
Tag	Displays the tag information
Flag	Displays the flag information
Algo	Displays the algorithm information
No. of Micro Segment Locators	Displays the number of micro-segment locators

## 15.59 migration

### migration

#### Syntax

**migration** [**interface** *ip-int-name*]

#### Context

[\[Tree\]](#) (tools>dump>router>ipoe-session migration)

#### Full Context

tools dump router ipoe-session migration

## Description

This command displays details on the IPoE session migration progress. It shows per group interface the number of hosts per type (DHCPv4, DHCPv6 and SLAAC) that are associated with an IPoE session or that are not associated with an IPoE session.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of IPoE session migration information.

### Output Example

```
# tools dump router ipoe-session migration interface group-int-1-1
=====
Type                Total      IPoE session   Non IPoE session
=====
Group-interface: group-int-1-1 (IPoE session enabled)
-----
DHCPv4              2          1              1
DHCPv6              3          2              1
SLAAC                0          0              0
-----
IPoE sessions       1
=====
```

## 15.60 mip

mip

### Syntax

mip

### Context

[\[Tree\]](#) (show>eth-cfm mip)

### Full Context

show eth-cfm mip

### Description

This command displays provisioned entities that allow MIP creation.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of ETH-CFM MIP information. The following table describes the output fields.

### Output Example

```

show eth-cfm mip
=====
CFM SAP MIP Table
=====
Sap           Qtag1 Qtag2 PVLAN Enabled      MAC Address
-----
1/1/9:500.500  500   500   n/a   yes          00:00:00:00:01:28
1/1/9:501.501  n/a   n/a   n/a   yes          Not Configured
1/1/9:502.502  n/a   n/a   n/a   yes          Not Configured
1/1/9:100.*    n/a   n/a   n/a   yes          00:00:00:00:01:28
1/1/9:100.*    n/a   n/a   7     yes          Not Configured
1/1/9:600.*    n/a   n/a   n/a   yes          Not Configured
1/1/9:600.*    600   n/a   1     yes          Not Configured
1/1/9:601.*    n/a   n/a   1     yes          Not Configured
1/1/9:601.*    n/a   n/a   2     yes          Not Configured
1/1/9:703.*    n/a   n/a   777   yes          Not Configured
=====
CFM SDP MIP Table
=====
Sdp           Qtag1 Qtag2 PVLAN Enabled      MAC Address
-----
2829:4000    n/a   n/a   4000  yes          Not Configured
=====
    
```

Table 314: ETH-CFM MIP Field Descriptions

Label	Description
Sap	The service SAP ID
qtag1	The outer CFM VLAN tag
qtag2	The inner CFM VLAN tag
PVLAN	The configured primary VLAN
Enabled	The state of the MIP
Mac Address	The configured MAC address of the MIP
Sdp	The service SDP ID
Svclid	The service ID
Type	The SDP type
Far End	The IP address of the far-end peer for the SDP

## 15.61 mip-instantiation

### mip-instantiation

#### Syntax

**mip-instantiation** [**level** *level*] [{**sap** *sap-id* | **sdp** *sdp-id*}]

#### Context

[\[Tree\]](#) (show>eth-cfm mip-instantiation)

#### Full Context

show eth-cfm mip-instantiation

#### Description

This command displays the active MIPs created on the node, their related object values, and the SAP or SDP binding. The attributes include a column that indicates which MIP table was responsible and authoritative for the specific active attribute. Authorities can be the association (asn), default-domain (def), or the global read-only values (sys).

#### Parameters

##### *level*

The level for which all created MIPs will be displayed

**Values** 0 to 7

##### *sap-id*

The SAP for which created MIPs will be displayed

##### *sdp-id*

The SDP binding for which created MIPs will be displayed

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of ETH CFM MIP instantiation information.

[Table 315: ETH-CFM MIP Instantiation Field Descriptions](#) describes the show MIP instantiation command output fields.

#### Output Example

```
show eth-cfm mip-instantiation
=====
CFM SAP MIP Instantiation Information
=====
SAP                               Lvl  LA   Creation   CA   IdPerm   IdA  Pri  PA
```

```

-----
1/2/1:2000.2000          4   asn default   asn chassis   asn 7   asn
1/2/1:3000.3000          4   def  default   def  none     sys 7   sys
-----
No. of SAP MIPs: 2
=====

=====
CFM SAP Primary VLAN MIP Instantiation Information
=====
SAP           VLAN  Lvl  LA   Creation   CA   IdPerm   IdA  Pri  PA
-----
No Matching Entries
=====

=====
CFM SDP MIP Instantiation Information
=====
SDP           Lvl  LA   Creation   CA   IdPerm   IdA  Pri  PA
-----
No Matching Entries
=====
    
```

Table 315: ETH-CFM MIP Instantiation Field Descriptions

Label	Description
VLAN	Displays the primary <i>vlan-id</i> associated with the MIP, or "none" if <i>primary-vlan-enable</i> is not configured
L	Displays the numerical value indicating the CFM level of the MIP
LA	Displays the level authority indicating the creation routine responsible for the level
Creation	Displays the MHF creation mode that was used to create the MIP
CA	Displays the creation authority
IdPerm	Indicates whether the SenderID TLV is being included (chassis) or not (none)
IdA	Displays the IdPermission authority
Pri	Displays the numerical value that indicates the <b>mip-ltr-priority</b>
PA	Displays the <b>mip-ltr-priority</b> authority



## 15.62 mirror

### mirror

#### Syntax

**mirror mirror-dest** *service-id*

**mirror global-sampling-rate**

**mirror mirror-source** *service-id*

#### Context

[\[Tree\]](#) (show mirror)

#### Full Context

show mirror

#### Description

This command displays mirror configuration and operation information.

#### Parameters

##### *service-id*

Specify the mirror service ID.

**Values** 1 to 2148278385

##### **global-sampling-rate**

Displays the global sampling rate as well as all mirror destination services that use the global sampling rate.

#### Platforms

All

#### Output

The following output is an example of mirror destination information.

#### Output Example

```
A:SR7# show mirror mirror-dest 1000
=====
Mirror Service
=====
Service Id       : 1000                Type           : Ether
Admin State     : Up                  Oper State     : Down
Forwarding Class : be                  Remote Sources : No
Slice           : 0
Destination SAP  : 1/1/1                Egr QoS Policy: 1
-----
```

```
Local Sources
-----
Admin State      : Up
- Port          : 1/1/2                               Egress Ingress
=====
A:SR7#

A:ALA-123>config>mirror# show mirror mirror-dest 500
=====
Mirror Service
=====
Service Id       : 500                                Type           : Ether
Admin State      : Up                                Oper State      : Up
Forwarding Class : be                                Remote Sources  : Yes
Destination SAP  : 1/1/2                               Egr QoS Policy : 1
-----
Remote Sources
-----
Far End          : 10.20.1.45                          Ingress Label  : 131070
-----
Local Sources
-----
Admin State      : Up
No Mirror Sources configured
=====
A:ALA-123>config>mirror#

A:ALA-456# show mirror mirror-dest 500
=====
Mirror Service
=====
Service Id       : 500                                Type           : Ether
Admin State      : Up                                Oper State      : Up
Forwarding Class : be                                Remote Sources  : No
Destination SDP  : 144 (10.20.1.44)                   Egress Label   : 131070
Signaling        : TLDP
-----
Local Sources
-----
Admin State      : Up
No Mirror Sources configured
=====
A:ALA-456#

A:NS042650115# show mirror mirror-dest 100
=====
Mirror Service
=====
Service Id       : 100                                Type           : PPP
Admin State      : Up                                Oper State      : Up
Forwarding Class : be                                Remote Sources  : No
Slice            : 0Enable Port Id: Yes
Destination SDP  : 100 (2.2.2.2) Egress Label   : 131070
Signaling        : TLDP
-----
Local Sources
-----
Admin State      : Up
No Mirror Sources configured
=====
A:NS042650115#
```

```

*A:EsrC# show mirror mirror-dest 100
=====
Mirror Service
=====
Service Id      : 100                Type           : Ether
Description     : Added by createMirrorDestination 100
Admin State    : Up                Oper State     : Up
Forwarding Class : be                Remote Sources: No
Slice          : 0
Destination SAP : 1/1/5:100          Egr QoS Policy: 1
-----
Local Sources
-----
Admin State    : Up
-Subs user1                    Ingress
-Subs user2                    Egress
                                FC be h2 h1 nc
-Subs user3                    Ingress
-Subs user4                    Ingress
                                1/1/2:1
                                FC af ef nc
-Subs user5                    Egress
-Subs user6                    Egress Ingress
                                1/1/2:1
                                FC be l2 af h2 ef nc
-Subs user7                    Ingress
                                1/1/2:1
                                FC l1 h2
-Subs user8                    Egress
                                IP 1.1.0.7
                                1/1/2:1
                                FC af l1 h2 ef nc
-Subs user9                    Egress Ingress
                                IP 1.1.0.8
                                1/1/2:1
                                FC af l1 h2 ef nc
-Subs user10                   Ingress
                                IP 1.1.0.9
                                1/1/2:1
                                FC be l2 l1 h1 nc
-Subs user11                   Egress
                                MAC 00:00:01:00:00:01
                                1/1/2:1
                                FC be l1 h2 ef h1
-Subs user12                   Egress Ingress
                                MAC 00:00:01:00:00:02
                                1/1/2:1
                                FC be ef
-Subs user13                   Ingress
                                MAC 00:00:01:00:00:03
                                1/1/2:1
                                FC be ef h1
-Subs user14                   Egress
                                IP 1.1.0.13
                                1/1/2:1
                                MAC 00:00:01:00:00:01
                                FC be ef h1
-Subs user15                   Egress Ingress
                                IP 1.1.0.14
                                1/1/2:1
                                MAC 00:00:01:00:00:02
                                FC af l1 ef nc
-Subs user16                   Ingress
                                IP 1.1.0.15
                                MAC 00:00:01:00:00:03
                                SLA sla1
-Subs user17                   Egress
                                SLA sla2
-Subs user18                   Egress Ingress
                                SLA sla3
                                FC be af h2
=====
A:EsrC#
    
```

Table 316: Show mirror output fields lists and describes the mirroring output fields:

Table 316: Show mirror output fields

Label	Description
Service Id	The service ID associated with this mirror destination.
Type	Entries in this table have an implied storage type of "volatile". The configured mirror source information is not persistent.

Label	Description
Admin State	Up — The mirror destination is administratively enabled.
	Down — The mirror destination is administratively disabled.
Oper State	Up — The mirror destination is operationally enabled.
	Down — The mirror destination is operationally disabled.
Forwarding Class	The forwarding class for all packets transmitted to the mirror destination.
Remote Sources	Yes — A remote source is configured.
	No — A remote source is not configured.
Enable Port Id	Yes — PPP Port ID Mirroring is enabled.
	No — PPP Port ID Mirroring is disabled.
Slice	The value of the slice-size, the maximum portion of the mirrored frame that will be transmitted to the mirror destination. Any frame larger than the slice-size will be truncated to this value before transmission to the mirror destination. A value of 0 indicates that mirrored packet truncation based on slice size is disabled.
Destination SAP	The ID of the access port where the Service Access Point (SAP) associated with this mirror destination service is defined.
Egr QoS Policy	This value indicates the egress QoS policy ID. A value of 0 indicates that no QoS policy is specified.

The following output is an example of global-sampling-rate information, and [Table 317: Show mirror global-sampling-rate fields](#) describes the output fields.

```
show mirror global-sampling-rate
```

### Output Example

```
=====
Global Sampling Rate : 10
=====
Mirror Dest Services using global sampling rate
=====
Id           Name
-----
6           example
=====
```

Table 317: Show mirror global-sampling-rate fields

Label	Description
Global Sampling Rate	Specifies the configured global sampling rate
Id	Specifies the mirror destination services that use the global sampling rate by ID
Name	Specifies the mirror destination services that use the global sampling rate by name

## 15.63 mirror-dest

### mirror-dest

#### Syntax

**mirror-dest** [*service-id*]

#### Context

[\[Tree\]](#) (show>li mirror-dest)

#### Full Context

show li mirror-dest

#### Description

This command displays LI mirror destination information.

#### Parameters

***service-id***

Identifies the service in the service domain. This ID is unique to this service and cannot be used by any other service, regardless of service type. The same service ID must be configured on every router that this particular service is defined on.

#### Values

*service-id*: 1 to 2148278381

*svc-name*: 64 characters maximum

#### Platforms

All

#### Output

### Output Example

```
A:BNG-1# show li mirror-dest
=====
Mirror Services
=====
Id          Type   Adm   Opr   Destination                               SDP Lbl/  Slice
          SAP   QoS
-----
995         Ether Up    Up    SAP 1/1/20:998                           1         0
996         Ether Up    Up    SDP 10 (192.168.40.1)                    999        0
997         ipOnly Up    Up    None                                       n/a        0
[998]       Ether Up    Up    ip-udp-shim (147.133.122.111)            n/a        0
[999]       Ether Up    Up    ip-gre (10.1.1.1)                        n/a        0
-----
RADIUS LI mirror dest: indicated by [<svc-id>]
```

## mirror-dest

### Syntax

**mirror-dest** [*service-id*]

### Context

**[Tree]** (clear>li>radius mirror-dest)

### Full Context

clear li radius mirror-dest

### Description

This command deletes the mirror destination created by RADIUS.

LI configuration changes, such as updating or replacing a mirror-destination template, may prevent the RADIUS VSA "Alc-li-action" from deleting a mirror destination. To remove the mirror destination from RADIUS, the parameters for the mirror destination (a combination of the RADIUS LI VSAs and the mirror destination template) must match the parameters used during the mirror destination creation. This CLI command removes LI destinations in these cases.

### Parameters

#### *service-id*

Specifies the mirror destination service that was created through RADIUS, which can be displayed with the **show li mirror-dest** command.

**Values** 1 to 2148278385

### Platforms

All

## 15.64 mka-over-ip

### mka-over-ip

#### Syntax

**mka-over-ip**

#### Context

[\[Tree\]](#) (show>anysec mka-over-ip)

#### Full Context

show anysec mka-over-ip

#### Description

This command displays MKA-over-IP information.

#### Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-1se

#### Output

The following output is an example of MKA over IP, and [Table 318: MKA over IP Field Descriptions](#) describes the output fields.

#### Output Example

```
# show anysec mka-over-ip

=====
MKA over IP
=====
MKA over IP session UDP Port: 12345
Reserved Label Block       : (Not Specified)
Operational Status        : in-service
=====
```

Table 318: MKA over IP Field Descriptions

Label	Descriptions
MKA over IP session UDP Port	The MKA-over-IP UDP port number
Reserved Label Block	The reserved label block
Operational Status	The operational status

## 15.65 mka-session

### mka-session

#### Syntax

**mka-session** [**port** *port-id*]

**mka-session** [**port** *port-id*] **detail**

**mka-session** [**port** *port-id*] **statistics**

#### Context

[\[Tree\]](#) (show>macsec mka-session)

#### Full Context

show macsec mka-session

#### Description

This command displays MACsec MKA session information.

#### Parameters

##### **port-id**

Specifies the port ID, up to 17 characters.

##### **detail**

Displays MACsec MKA session detailed information.

##### **statistics**

Displays MACsec MKA session statistical information.

#### Platforms

All

#### Output

See the following output examples:

- [Output Example: show macsec mka-session port](#)
- [Output Fields: show macsec mka-session port](#)
- [Output Example: show macsec mka-session port detail](#)
- [Output Fields: show macsec mka-session port detail](#)
- [Output Example: show macsec mka-session detail](#)
- [Output Example: show macsec mka-session statistics](#)



**Output Example: show macsec mka-session port**

```
A:Dut-C# show macsec mka-session port 2/1/11
=====
MKA Session for port 2/1/11
=====
Port           : 2/1/11
Security Zone  : 3
=====

Live Peer List
=====
Member Identifier      Mesg Num  Rx-SCI           KS priority
-----
bf4102704294fa1057022bdf  28322    a47b2ce112ef0000  16
=====

Potential Peer List
=====
Member Identifier      Mesg Num  Rx-SCI           KS priority
-----
=====
```

**Output Fields: show macsec mka-session port**

Table 319: Output Fields: show macsec mka-session port describes the output fields for the following show macsec mka-session port command.

Table 319: Output Fields: show macsec mka-session port

Label	Description
MKA Session for port	Display the MKA session for the current port
Port	Specifies the MKA session current port.
Security Zone	Specifies Security Zone does this port belongs to.
Live Peer List	Specifies Peers (Participants) which have provided their MI and MN via KMA. The peer entry is in the Live Peer List.
Member Identifier	Specifies the MI of the peer entry.
Mesg Num	Specifies the latest Member Number of the peer entry.
Rx-SCI	Specifies the Peer Rx-SCI.
KS-priority	Specifies the Peer Key server priority.
Potential Peer List	Peers (Participants) which have Potential Peers List includes all the other peers that have transmitted an MKPDU that has been directly received by the participant or that were included in the Live Peers List of a MKPDU transmitted by a peer that has proved liveness, an MKA PDU. The peer entry is in the Potential Peer List.

**Output Example: show macsec mka-session port detail**

```
A:Dut-C# show macsec mka-session port 2/1/11 detail
=====
MKA Session for port 2/1/11
=====
Port          : 2/1/11
Security Zone : 3
MKA Oper State : unknown value
Oper Cipher Suite : unknown value
Oper Encrypt Offset: 0
CAK Name      : 11223344556677889900aabbccdeeff11223344556677889900aabbcc*
MKA Member ID : f134218784b114eb61dbe834
Transmit Interval : 2000
Outbound SCI  : a4:7b:2c:e1:12:8f
Message Number : 28298
Key Number    : 878
Key Server    : yes
Key Server Priority: 16
Latest SAK AN : 3
Latest SAK KI : f134218784b114eb61dbe8340000036d
Previous SAK AN : 2
Previous SAK KI : f134218784b114eb61dbe83400000000
=====
* indicates that the corresponding row element may have been truncated.
=====
Live Peer List
=====
Member Identifier      Mesg Num  Rx-SCI          KS priority
-----
bf4102704294fa1057022bdf      28323    a47b2ce112ef0000      16
=====
Potential Peer List
=====
Member Identifier      Mesg Num  Rx-SCI          KS priority
-----
=====
MKA Session Statistics for port 2/1/11
=====
Peer Removed Due to Timeout : 0
CKN Not Found                : 0
New Live peer                : 0
SAK Generated by Server      : 0
SAK Installed for TX         : 0
SAK Installed for RX         : 0
PDU Too Small                : 0
PDU Too Big                  : 0
PDU Not Quad Size           : 0
PDU Message Number Invalid   : 0
PDU Param Set Size Invalid   : 0
PDU Liveness Check Fail     : 0
Param Set Not Quad Size     : 0
Unsupported Agility          : 0
Invalid CAK Name Length     : 0
ICV Check Failed             : 0
Peer Using Same MID         : 0
SAK From Non-Live Peer      : 0
SAK From Non-Key Server     : 0
SAK Decrypt Fail            : 0
SAK Encrypt Fail            : 0
Key Number Invalid          : 0
SAK Installation Failed     : 0
```

```
CAK Info Missing          : 0
Max Peers Set as Zero    : 0
=====
```

**Output Fields: show macsec mka-session port detail**

Table 320: Output Fields: show macsec mka-session port detail describes the output fields for the following commands:

- **show macsec mka-session port**
- **show macsec mka-session detail**
- **show macsec mka-session statistics**

Table 320: Output Fields: show macsec mka-session port detail

Label	Description
MKA Oper State	Specifies the operational state of the MKA participant on this port. The operational MKA state will be up if MKA hellos are received on this port and have a valid session.
Oper Cipher Suite	Specifies the operational encryption algorithm used for data path PDUs when all parties in the CA have the (SAK). This value is specified by the key server:gcm-aes-128, gcm-aes-256, gcm-aes-xpn-128, gcm-aes-xpn-256.
Oper Encrypt Offset	Specifies the operational encryption offset used for the data path PDUs when all parties in the CA have the SAK. This value is specified by the key server: 0, 30, 50.
CAK Name	Specifies the name of the CAK in use by this MKA which is used to find the correct CAK.
MKA Member ID	Specifies indicates the Member Identifier (MI) for the MKA instance.
Transmit Interval	Specifies the time interval (in ms) at which the MKA broadcasts its liveness to its peers and is non-configurable.
Outbound SCI	Specifies the Secure Channel Identifier (SCI) information for transmitting MACsec frames and consists of the outgoing port MAC Address and a port identifier.
Message Number	Specifies the current count of MKA messages that is attached to MKA PDUs.
Key Number	Specifies the number of the currently assigned CAK. When a new CAK is generated, this number is incremented. A SAK is identified by 128-bit Key Identifier (KI) and 32-bit Key-Number (KN).
Key Server	Specifies whether this server is the highest priority server in the peer group: no, yes.
Key Server Priority	Specifies the priority of the active key server: 0-255 (default 16).

Label	Description
Latest SAK AN	Specifies the Association Number (AN) of the latest Secure Association Key (SAK). This number is concatenated with an SCI to identify a Secure Association (SA). In SR OS, only 2 SAKs are supported.
Latest SAK KI	Specifies the Key Identifier (KI) of the latest SAK. This number is derived from the MI of the key server and the key number.
Previous SAK AN	Specifies the AN of the previous SAK. This number is concatenated with an SCI to identify an SA.
Previous SAK KI	Specifies the KI of the previous SAK. This number is derived from the MI of the key server and the key number.
Peer Removed Due to Timeout	Specifies the number of peers removed from the live/potential peer list due to not receiving an MKPDU within the MKA Live Time (6.0 seconds) and is not configurable.
CKN Not Found	Specifies the number of MKPDUs received with a CKN that does not match the CA configured for the port.
New Live Peer	Specifies the number of validated peers that have been added to the live peer list.
SAK Generated by Server	Specifies the number of SAKs generated by this MKA instance.
SAK Installed for TX	Specifies the number of SAKs installed for transmitting.
SAK Installed for RX	Specifies the number of SAKs installed for receiving.
PDU Too small	Indicates that the number of MKPDUs received that are less than 32 octets.
PDU Too big	Indicates the number of MKPDUs received where the EAPOL header indicates a size larger than the received packet.
PDU Not Quad Size	Indicates the number of MKPDUs received with a size that is not a multiple of 4 octets long.
PDU Message Number Invalid	Indicates the number of MKPDUs received out of order as indicated by the Message Number.
PDU Param Set Size Invalid	Indicates the number of MKPDUs received which contain a parameter set body length that exceeds the remaining length of the MKPDU.
PDU Liveness Check Fail	Indicates the number of MKPDUs received which contain an MN that is not acceptably recent.
Param Set Not Quad Size	Indicates the number of MKPDUs received which contain a parameter set that is not a multiple of 4 octets long.

Label	Description
Unsupported Agility	Indicates the number of MKPDUs received which contain an unsupported Algorithm Agility value.
Invalid CAK Name Length	Indicates the number of MKPDUs received which contain a CAK name that exceeds the maximum CAK name length.
ICV Check Failed	Indicates the number of MKPDUs received which contain an ICV value that does not authenticate.
Peer Using Same MID	Indicates the number of MKPDUs received which contain a peer list with an MI entry which conflicts with the local MI.
SAK From Non-Live Peer	Indicates the number of SAKs received from peer that is not a member of the Live Peers List.
SAK From Non-Key Server	Indicates the number of SAKs received from an MKA participant that has not been designated as the Key Server. Only the key server should distribute SAK.
SAK Decrypt Fail	Indicates the number of AES Key Wrap SAK decryption failures that have occurred.
SAK Encrypt Fail	Indicates the number of AES Key Wrap SAK encryption failures that have occurred.
Key Number Invalid	Indicates the number of SAKs received with an invalid Key Number.
SAK Installation Failed	Indicates the number of Secy SAK installation failures that have occurred.
CAK Info Missing	Indicates the number of times internal CAK data is not available for the generation of the SAK.
Max Peers Set as Zero	Indicates the number of Secy SAK installations that have failed due to the max peer entry being set to 0.

**Output Example: show macsec mka-session detail**

```
A:Dut-C# show macsec mka-session detail
=====
MKA Session for port 2/1/11
=====
Port           : 2/1/11
Security Zone  : 3
MKA Oper State : unknown value
Oper Cipher Suite : unknown value
Oper Encrypt Offset: 0
CAK Name       : 11223344556677889900aabbccddeeff11223344556677889900aabc*
MKA Member ID  : f134218784b114eb61d8e834
Transmit Interval : 2000
Outbound SCI   : a4:7b:2c:e1:12:8f
Message Number : 28285
Key Number     : 878
```

```

Key Server      : yes
Key Server Priority: 16
Latest SAK AN   : 3
Latest SAK KI   : f134218784b114eb61dbe8340000036d
Previous SAK AN : 2
Previous SAK KI : f134218784b114eb61dbe83400000000
=====
* indicates that the corresponding row element may have been truncated.
=====
Live Peer List
=====
Member Identifier      Mesg Num  Rx-SCI                KS priority
-----
bf4102704294fa1057022bdf  28310    a47b2ce112ef0000    16
=====
Potential Peer List
=====
Member Identifier      Mesg Num  Rx-SCI                KS priority
-----
=====
MKA Session Statistics for port 2/1/11
=====
Peer Removed Due to Timeout : 0
CKN Not Found                : 0
New Live peer                 : 0
SAK Generated by Server      : 0
SAK Installed for TX         : 0
SAK Installed for RX         : 0
PDU Too Small                : 0
PDU Too Big                  : 0
PDU Not Quad Size            : 0
PDU Message Number Invalid   : 0
PDU Param Set Size Invalid   : 0
PDU Liveness Check Fail     : 0
Param Set Not Quad Size      : 0
Unsupported Agility          : 0
Invalid CAK Name Length      : 0
ICV Check Failed             : 0
Peer Using Same MID          : 0
SAK From Non-Live Peer       : 0
SAK From Non-Key Server      : 0
SAK Decrypt Fail             : 0
SAK Encrypt Fail             : 0
Key Number Invalid           : 0
SAK Installation Failed      : 0
CAK Info Missing             : 0
Max Peers Set as Zero        : 0
=====

```

**Output Example: show macsec mka-session statistics**

```

A:Dut-C# show macsec mka-session statistics
=====
MKA Session Statistics for port 2/1/11
=====
Peer Removed Due to Timeout : 0
CKN Not Found                : 0
New Live peer                 : 0
SAK Generated by Server      : 0
SAK Installed for TX         : 0

```

```
SAK Installed for RX      : 0
PDU Too Small           : 0
PDU Too Big             : 0
PDU Not Quad Size       : 0
PDU Message Number Invalid : 0
PDU Param Set Size Invalid : 0
PDU Liveness Check Fail : 0
Param Set Not Quad Size : 0
Unsupported Agility     : 0
Invalid CAK Name Length : 0
ICV Check Failed        : 0
Peer Using Same MID     : 0
SAK From Non-Live Peer  : 0
SAK From Non-Key Server : 0
SAK Decrypt Fail        : 0
SAK Encrypt Fail        : 0
Key Number Invalid      : 0
SAK Installation Failed : 0
CAK Info Missing        : 0
Max Peers Set as Zero   : 0
=====
```

## mka-session

### Syntax

```
mka-session [port-id]
```

### Context

[\[Tree\]](#) (clear>macsec mka-session)

### Full Context

```
clear macsec mka-session
```

### Description

This command displays MACsec MKA session information.

### Parameters

*port-id*

Specifies the port ID, up to 17 characters

### Platforms

All

## 15.66 mld

mld

### Syntax

**mld** [**subscriber** *sub-ident-string*] [**detail**]

### Context

[\[Tree\]](#) (show>service>active-subscribers mld)

### Full Context

show service active-subscribers mld

### Description

This command displays active subscriber MLD information.

### Parameters

#### ***sub-ident-string***

Displays the subscriber ID of the active subscriber, up to 64 characters.

#### **detail**

Displays detailed output.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of MLD information for active subscribers

#### Output Example

```
*A:eng-BNG-2# show service active-subscribers mld
=====
Active Subscribers
=====
Subscriber
  MLD-Policy
  HostAddr                GrpItf                NumGroups
-----
user_1
  mld-policy-01
  2001::1                  grp-int-01
-----
Number of Subscribers : 1
=====
```



Table 321: MLD Active Subscribers Field Descriptions

Label	Descriptions
Subscriber	The name of the subscriber
MLD-Policy	The name of the policy associated with the subscriber as specified by the external policy server or local user database
HostAddr	The subscriber's individual host IPv6 address or prefix.
GrpIrf	The group interface on which the subscriber is created
NumGroups	The number of multicast groups that the subscriber is currently joined with
Number of Subscribers	The total number of subscribers associated with this show command

## mld

### Syntax

mld

### Context

[\[Tree\]](#) (show>router mld)

### Full Context

show router mld

### Description

Commands in this context show MLD entities.

### Platforms

All

## mld

### Syntax

mld

### Context

[\[Tree\]](#) (clear>router mld)

## Full Context

clear router mld

## Description

Commands in this context clear and reset MLD entities.

## Platforms

All

## 15.67 mld-policy

mld-policy

## Syntax

**mld-policy**

**mld** *policy-name* **association**

**mld** *policy-name*

## Context

[\[Tree\]](#) (show>subscr-mgmt mld-policy)

## Full Context

show subscriber-mgmt mld-policy

## Description

This command displays MLD policy information.

## Parameters

***policy-name***

Specifies the MLD policy name, up to 32 characters.

**association**

Displays information associated with the MLD policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 15.68 mld-snooping

### mld-snooping

#### Syntax

mld-snooping

#### Context

[\[Tree\]](#) (show>service>id mld-snooping)

#### Full Context

show service id mld-snooping

#### Description

This command displays MLD snooping information.

#### Platforms

All

### mld-snooping

#### Syntax

mld-snooping

#### Context

[\[Tree\]](#) (clear>service>id mld-snooping)

#### Full Context

clear service id mld-snooping

#### Description

Commands in this context clear MLD snooping-related data.

#### Platforms

All

## 15.69 mlppp

mlppp

### Syntax

mlppp

### Context

[\[Tree\]](#) (show>router>l2tp mlppp)

### Full Context

show router l2tp mlppp

### Description

This command displays L2TP MLPPP operational information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s

## 15.70 mmrp

mmrp

### Syntax

mmrp mac [*ieee-address*]

### Context

[\[Tree\]](#) (show>service>id mmrp)

### Full Context

show service id mmrp

### Description

This command displays information on MACs. If a MAC address is specified, information will be displayed relevant to the specific group. No parameter will display information on all group MACs on a server.

## Parameters

### *ieee-address*

Specifies a MAC address as a hex string in the form of xx:xx:xx:xx:xx:xx: or xx-xx-xx-xx-xx-xx

## Platforms

All

## Output

The following output is an example of service MRRP MAC information.

### Output Example

```
*A:PE-A# show service id 10 mrrp mac 01:1E:83:00:00:65
-----
SAP/SDP                               MAC Address      Registered  Declared
-----
sap:1/1/4:10                           01:1e:83:00:00:65 No           Yes
sap:1/2/2:10                             01:1e:83:00:00:65 No           Yes
sap:2/2/5:10                             01:1e:83:00:00:65 Yes          Yes
-----
*A:PE-A#

*A:PE-A# show service id 10 mrrp mac
-----
SAP/SDP                               MAC Address      Registered  Declared
-----
sap:1/1/4:10                           01:1e:83:00:00:65 No           Yes
sap:1/1/4:10                           01:1e:83:00:00:66 No           Yes
sap:1/1/4:10                           01:1e:83:00:00:67 No           Yes
sap:1/1/4:10                           01:1e:83:00:00:68 No           Yes
sap:1/1/4:10                           01:1e:83:00:00:69 No           Yes
sap:1/1/4:10                           01:1e:83:00:00:6a No           Yes
sap:1/1/4:10                           01:1e:83:00:00:6b No           Yes
sap:1/1/4:10                           01:1e:83:00:00:6c No           Yes
sap:1/1/4:10                           01:1e:83:00:00:6d No           Yes
sap:1/1/4:10                           01:1e:83:00:00:6e No           Yes
sap:1/2/2:10                             01:1e:83:00:00:65 No           Yes
sap:1/2/2:10                             01:1e:83:00:00:66 No           Yes
sap:1/2/2:10                             01:1e:83:00:00:67 No           Yes
sap:1/2/2:10                             01:1e:83:00:00:68 No           Yes
sap:1/2/2:10                             01:1e:83:00:00:69 No           Yes
sap:1/2/2:10                             01:1e:83:00:00:6a No           Yes
sap:1/2/2:10                             01:1e:83:00:00:6b No           Yes
sap:1/2/2:10                             01:1e:83:00:00:6c No           Yes
sap:1/2/2:10                             01:1e:83:00:00:6d No           Yes
sap:1/2/2:10                             01:1e:83:00:00:6e No           Yes
sap:2/2/5:10                             01:1e:83:00:00:65 Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:66 Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:67 Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:68 Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:69 Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:6a Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:6b Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:6c Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:6d Yes          Yes
sap:2/2/5:10                             01:1e:83:00:00:6e Yes          Yes
-----
*A:PE-A#
```

## 15.71 mobile-gateway

### mobile-gateway

#### Syntax

**mobile-gateway remote-address** *ip-address* [**udp-port** *port*] **statistics**

#### Context

[\[Tree\]](#) (clear>router>wlan-gw mobile-gateway)

#### Full Context

clear router wlan-gw mobile-gateway

#### Description

This command clears Mobile Gateway data.

#### Parameters

##### *ip-address*

Specifies the IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF] H
    - d: [0 to 255] D

##### *port*

Specifies the port number.

- Values** 1 to 65535

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 15.72 module

### module

#### Syntax

**module** *cpm-slot* **action** {**reboot** | **disconnect**}

#### Context

[\[Tree\]](#) (tools>perform>system>bluetooth module)

#### Full Context

tools perform system bluetooth module

#### Description

This command performs reboots or disconnects on the Bluetooth module on the specified CPM.

#### Parameters

##### *cpm-slot*

Specifies the CPM slot.

**Values** {A | B | C | D}

##### **reboot**

Triggers a reboot of the Bluetooth subsystem on the module.

##### **disconnect**

Forces a disconnect of any active Bluetooth session.

#### Platforms

7750 SR-1, 7750 SR-s, 7950 XRS-20e

### module

#### Syntax

**module** [*cpm-slot*] [**detail**]

#### Context

[\[Tree\]](#) (show>system>bluetooth module)

#### Full Context

show system bluetooth module

## Description

This command displays information for Bluetooth modules.

## Parameters

### *cpm-slot*

Specifies the CPM slot.

**Values** A, B

### *detail*

Displays detailed information.

## Platforms

7750 SR-1, 7750 SR-s, 7950 XRS-20e

## Output

The following output is an example of Bluetooth module information, and [Table 322: Output fields: Bluetooth module](#) describes the output fields.

Use the following command for Bluetooth module information.

```
show system bluetooth module
```

## Output Example

```
=====
System-wide Bluetooth Configuration
=====
Passkey           : 123456           Advertising Timeout: 30
Power State       : off             Pairing Button    : Disabled
=====

Bluetooth Modules
=====
Module            : A
Device Connected  : No
Configured Identifier : (Not Configured)
Given Identifier   : 7750-SR-1-CPM-A-card-2
=====
```

Table 322: Output fields: Bluetooth module

Label	Description
Passkey	The Bluetooth passkey in use by the system
Advertising Timeout	The amount of time, in seconds, that the Bluetooth module advertises it is ready to pair.



Label	Description
Power State	The operating mode for Bluetooth
Pairing Button	Displays whether the pairing button is enabled for use
Module	Displays which CPM contains the Bluetooth module
Device Connected	Displays if there is a device actively paired to the module
Configured Identifier	The customer-defined Bluetooth identifier for the module
Given Identifier	The Bluetooth identifier in use for the module

## 15.73 monitor

### monitor

#### Syntax

monitor

#### Context

[\[Tree\]](#) (monitor)

#### Full Context

monitor

#### Description

Commands in this context monitor statistics.

#### Platforms

All

## 15.74 mpls

mpls

### Syntax

mpls

### Context

[\[Tree\]](#) (clear>router mpls)

### Full Context

clear router mpls

### Description

Commands in this context clear and reset MPLS protocol entities.

### Platforms

All

mpls

### Syntax

mpls

### Context

[\[Tree\]](#) (show>router mpls)

### Full Context

show router mpls

### Description

Commands in this context display MPLS related information.

### Platforms

All

## mpls

### Syntax

mpls

### Context

[\[Tree\]](#) (tools>dump>router mpls)

### Full Context

tools dump router mpls

### Description

Commands in this context dump tools for MPLS protocol instance.

### Platforms

All

## mpls

### Syntax

mpls

### Context

[\[Tree\]](#) (tools>perform>router mpls)

### Full Context

tools perform router mpls

### Description

This command enables tools for MPLS.

### Platforms

All

## mpls

### Syntax

mpls

### Context

[\[Tree\]](#) (monitor>router mpls)

### Full Context

monitor router mpls

### Description

This commands monitors commands for the MPLS instance.

### Platforms

All

## 15.75 mpls-labels

mpls-labels

### Syntax

mpls-tp

### Context

[\[Tree\]](#) (show>router mpls-labels)

### Full Context

show router mpls-labels

### Description

Commands in this context display MPLS label information.

### Platforms

All

## 15.76 mpls-resources

mpls-resources

### Syntax

mpls-resources

## Context

[\[Tree\]](#) (tools>dump mpls-resources)

## Full Context

tools dump mpls-resources

## Description

This command displays MPLS resource usage information.

## Platforms

All

## Output

The following output is an example of MPLS resource information, and [Table 323: Output fields: MPLS resources](#) describes the output fields.

### Output example

```
A:node-2# tools dump mpls-resources
Global MPLS Resource Usage
```

	Total	Allocated	Free
mpls NHLFE	262125	1	262124
RSVP		1	
LDP		0	
BGP		0	
MPLS-TP		0	
SR		0	
BIER		0	
TREE-SID		0	
mpls labels	524256	0	524256
RSVP		0	
LDP		0	
BGP		0	
MPLS-TP		0	
STATIC-SVC		0	
SR		0	
BIER		0	
RESERVED-BLK		0	
mpls LTN (FTN)	131071	0	131071
RSVP		0	
LDP		0	
BGP		0	
MPLS-TP		0	
SR		0	
BIER		0	
TREE-SID		0	

Table 323: Output fields: MPLS resources

Label	Description
Total	Displays the total number of system resources

Label	Description
Allocated	Displays the number of currently allocated resources
Free	Displays the number of available resources

## 15.77 mpls-tp

### mpls-tp

#### Syntax

mpls-tp

#### Context

[\[Tree\]](#) (show>router>mpls mpls-tp)

#### Full Context

show router mpls mpls-tp

#### Description

Commands in this context display MPLS Transport Profile (TP) information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 15.78 mrouter

### mrouter

#### Syntax

mrouter [detail]

#### Context

[\[Tree\]](#) (show>service>id>mld-snooping mrouter)

#### Full Context

show service id mld-snooping mrouter

## Description

This command displays all multicast routers.

## Platforms

All

## Output

The following output is an example of service MLD snooping mrouter information.

### Output Example

```
*A:rbae_C# show service id 1 mld-snooping mrouter
=====
MLD Snooping Multicast Routers for service 1
=====
MRouter
      Sap/Sdp Id          Up Time          Expires  Version
-----
FE80::12
      2/1/5              0d 00:05:55     11s      2
-----
Number of mrouter: 1
=====
*A:rbae_C#

*A:rbae_C# show service id 1 mld-snooping mrouter detail
=====
MLD Snooping Multicast Routers for service 1
-----
MRouter FE80::12
-----
Sap Id           : 2/1/5
Expires          : 18s
Up Time          : 0d 00:06:28
Version          : 2
-----
Number of mrouter: 1
```

## mrouter

### Syntax

**mrouter** [detail]

### Context

[\[Tree\]](#) (show>service>id>igmp-snooping mrouter)

### Full Context

show service id igmp-snooping mrouter

### Description

This command displays all multicast routers.

## Parameters

### detail

Displays detailed information.

## Platforms

All

## Output

The following output is an example of IGMP snooping mrouter information.

### Output Example

```
*A:ALA-48# show service id 700 igmp-snooping mrouter
=====
IGMP Snooping Multicast Routers for service 700
=====
MRouter          Sap/Sdp Id          Up Time           Expires           Version
-----
Number of mrouter: 0
=====
*A:ALA-48#
```

[Table 324: IGMP Snooping Mrouter Field Descriptions](#) describes the show igmp-snooping mrouter output fields:

*Table 324: IGMP Snooping Mrouter Field Descriptions*

Label	Description
MRouter	The multicast router port
Sap/Sdp Id	The SAP and SDP ID multicast router ports
Up Time	The length of time the mrouter has been up
Expires	The amount of time left before the query interval expires
Version	The configured version of IGMP running on this interface

## 15.79 mrp

mrp

### Syntax

mrp

### Context

[\[Tree\]](#) (show>service>id mrp)



## Full Context

```
show service id mrp
```

## Description

This command displays information on a per service MRP configuration.

## Platforms

All

## Output

The following output is an example of service MRP information.

### Output Example

```
*A:PE-A# show service id 10 mrp
-----
MRP Information
-----
Admin State       : Up           Failed Register Cnt: 0
Max Attributes    : 2048          Attribute Count     : 10
Flood Time       : Off
-----
*A:PE-A#
```

## mrp

## Syntax

```
mrp
```

## Context

[\[Tree\]](#) (clear>service>statistics>id mrp)

## Full Context

```
clear service statistics id mrp
```

## Description

This command clears all MRP statistics for the service ID.

## Platforms

All

## 15.80 mrp-policy

### mrp-policy

#### Syntax

```
mrp-policy [mrp-policy]  
mrp-policy mrp-policy [association]  
mrp-policy mrp-policy [entry entry-id]
```

#### Context

[\[Tree\]](#) (show>service mrp-policy)

#### Full Context

```
show service mrp-policy
```

#### Description

This command displays information on an MRP policy.

#### Parameters

##### *mrp-policy*

Specifies the MRP policy name

**Values** 32 chars max

##### *entry-id*

Specifies the entry ID number

**Values** 1 to 65535

#### Platforms

All

#### Output

The following output is an example of service MRP policy information.

#### Output Example

```
*A:PE-B# show service mrp-policy  
=====
```

Mrp Policies		
Mrp-Policy	Scope	Applied Description
1	template	Yes
2	template	Yes

```
-----
```

```
Total: 2
=====
*A:PE-B# show service mrp-policy "1"
=====
Mrp Policy
=====
Policy Name : 1                               Applied      : Yes
Scope       : template                       Def. Action  : block
Entries     : 1
Description : (Not Specified)
-----
Mrp Policy Entries
-----
Entry       : 1                               Match action : end-station
Description : (Not Specified)
isid       : 10..11
=====
*A:PE-B#
```

## 15.81 ms-pw

### ms-pw

#### Syntax

```
ms-pw [rd rd] [aii-type2 aii-type2] [brief] [hunt] [aspath-regex reg-exp] [community comm-id]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes ms-pw)

#### Full Context

```
show router bgp routes ms-pw
```

#### Description

This command displays BGP Multi-Segment Pseudowire (MS-PW) routes.

#### Parameters

##### *rd*

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

##### *aii-type2*

Filters the MS-PW routes based on the All Type 2 value.

##### *reg-exp*

Displays routes matching the specified regular expression, up to 80 characters.

### **comm-id**

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
  - *comm-val* — 0 to 65535
  - *ext-comm* — the extended community, defined as one of the following:
    - *{target | origin}:ip-address:comm-val*
    - *{target | origin}:asnum:ext-comm-val*
    - *{target | origin}:ext-asnum:comm-val*
    - **bandwidth:asnum:val-in-mbps**
    - **ext:4300:ovstate**
    - **ext:value1:value2**
    - **flowspec-set:ext-asnum:group-id**
- where:
- *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
  - *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **Platforms**

All

## 15.82 msap

msap

### Syntax

**msap** {*msap-id* | **idle-only**}

### Context

[\[Tree\]](#) (clear>service>id msap)

### Full Context

clear service id msap

### Description

This command clears Managed SAP (MSAP) information.

This command can remove an MSAP with active subscribers still associated with the MSAP. You can specify the **idle-only** parameter to clear only MSAPs in an idle state; MSAPs with active subscribers are not cleared.

### Parameters

#### *msap-id*

Specifies a Managed SAP ID.

Values	
dot1q	[port-id   lag-id]:qtag1
qinq	[port-id   lag-id]:qtag1.qtag2
qtag1	0 to 4094
qtag2	0 to 4094

#### **idle-only**

Specifies to clear only MSAPs in an idle state.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

msap

### Syntax

**msap** [**service** *service-id*]

## Context

[\[Tree\]](#) (tools>dump>service msap)

## Full Context

```
tools dump service msap
```

## Description

This command provides MSAP-related statistics for the chassis and tracks the number of sticky MSAPs. The statistics include the total number of MSAPs, sticky MSAPs, and idle MSAPs. When a subscriber disconnects from a sticky MSAP, it transitions to an idle MSAP. The idle MSAP transitions back to a sticky MSAP when the subscriber reconnects. A large number of idle MSAPs during peak network hours indicate that an idle MSAP cleanup is required. The total MSAP statistic counts both the total number of traditional MSAPs (non-sticky) and total number of sticky MSAPs. Idle MSAPs are counted towards the total number of sticky MSAPs.

## Parameters

### *service-id*

Specifies the service for which to show the MSAP-related statistics. The service is indicated in the chassis.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
msap
```

## Syntax

```
msap
```

## Context

[\[Tree\]](#) (show>service>id msap)

## Full Context

```
show service id msap
```

## Description

This command displays information for the managed SAPs associated with the service.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of managed SAP information.

### Output Example

```
[/]
A:patrick@pel# /show service id 1000 msap
=====
SAP(Summary), Service 1000
=====
PortId                SvcId      Ing.  Ing.  Egr.  Egr.  Adm  Opr
                   QoS      QoS  Fltr  QoS  Fltr
-----
[1/1/c1/4:2111.10]    1000       1    none  1     none  Up   Up
-----
Number of SAPs : 1
-----
Number of Managed SAPs : 1, indicated by [<sap-id>]
Flags : (I) = Idle MSAP
-----
[/]
A:patrick@pel# /show service id 1000 sap
=====
SAP(Summary), Service 1000
=====
PortId                SvcId      Ing.  Ing.  Egr.  Egr.  Adm  Opr
                   QoS      QoS  Fltr  QoS  Fltr
-----
1/1/c1/1:2413.4001    1000       1    none  1     none  Up   Up
[1/1/c1/4:2111.10]    1000       1    none  1     none  Up   Up
-----
Number of SAPs : 2
-----
Number of Managed SAPs : 1, indicated by [<sap-id>]
Flags : (I) = Idle MSAP
-----
```

## 15.83 msap-policy

### msap-policy

#### Syntax

**msap-policy** [*msap-policy-name* [**association**]]

#### Context

[\[Tree\]](#) (show>subscr-mgmt msap-policy)

#### Full Context

show subscriber-mgmt msap-policy

#### Description

This command displays Managed SAP policy information.

## Parameters

### *msap-policy-name*

Displays information about the specifies MSAP policy.

### *association*

Displays information related to the specifies MSAP policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of managed SAP policy information.

### Output Example

```
*A:ALA-48>show>subscr-mgmt# msap-policy
=====
Managed SAP Policies
=====
Name                Num    Description
                   MSAPs
-----
test                0      (Not Specified)
test 1              0      (Not Specified)
-----
Number of MSAP Policies : 2
Number of MSAPs        : 0
=====
*A:ALA-48>show>subscr-mgmt#
```

[Table 325: MSAP Policy Field Descriptions](#) describes subscriber management MSAP policy output fields.

*Table 325: MSAP Policy Field Descriptions*

Field	Description
Name	The name of the MSAP policy
Num MSAPs	The number of MSAPs
Description	The user-provided description of the MSAP policy
Number of MSAP Policies	The total number of MSAP policies
Number of MSAPs	The total number of MSAPs

## msap-policy

## Syntax

**msap-policy** *msap-policy-name* [**idle-only**]



## Context

[\[Tree\]](#) (clear>subscr-mgmt msap-policy)

## Full Context

clear subscriber-mgmt msap-policy

## Description

This command deletes Managed SAPs (MSAPs) created by the MSAP policy.

This command can remove an MSAP with active subscribers still associated with the MSAP. Use the **idle-only** parameter to remove only MSAPs in an idle state.

## Parameters

### *msap-policy-name*

Specifies an existing managed SAP policy name. A string up to 32 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

### **idle-only**

Specifies to remove only the MSAPs in an idle state.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## msap-policy

## Syntax

**msap-policy** *msap-policy-name*

## Context

[\[Tree\]](#) (clear>service>id msap-policy)

## Full Context

clear service id msap-policy

## Description

This command clears Managed SAPs created by the Managed SAP policy.

## Parameters

### *msap-policy-name*

Clears an existing MSAP policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 15.84 msdp

```
msdp
```

### Syntax

```
msdp
```

### Context

[\[Tree\]](#) (clear>router msdp)

### Full Context

```
clear router msdp
```

### Description

Commands in this context clear and reset Multicast Source Discovery protocol (MSDP) entities and statistics.

### Platforms

All

```
msdp
```

### Syntax

```
msdp
```

### Context

[\[Tree\]](#) (show>router msdp)

### Full Context

```
show router msdp
```

### Description

Commands in this context display MSDP related information.

### Platforms

All

## 15.85 mstp-configuration

### mstp-configuration

#### Syntax

mstp-configuration

#### Context

[\[Tree\]](#) (show>service>id mstp-configuration)

#### Full Context

show service id mstp-configuration

#### Description

This command displays the MSTP specific configuration data. This command is only valid on a management VPLS.

#### Platforms

All

## 15.86 multi-chassis

### multi-chassis

#### Syntax

multi-chassis

#### Context

[\[Tree\]](#) (tools>dump>redundancy multi-chassis)

#### Full Context

tools dump redundancy multi-chassis

#### Description

Commands in this context dump multi-chassis parameters.

#### Platforms

All

## multi-chassis

### Syntax

**multi-chassis**

### Context

[\[Tree\]](#) (tools>perform>redundancy multi-chassis)

### Full Context

tools perform redundancy multi-chassis

### Description

This command enables tools for multi-chassis redundancy.

### Platforms

All

## multi-chassis

### Syntax

**multi-chassis**

### Context

[\[Tree\]](#) (show>redundancy multi-chassis)

### Full Context

show redundancy multi-chassis

### Description

This command displays multi-chassis redundancy information.

### Platforms

All

### Output

See the following output examples:

- [Output Example: show redundancy multi-chassis mc-lag peer <ip-address>](#)
- [Output Example: show redundancy multi-chassis mc-lag statistics](#)
- [Output Example: show redundancy multi-chassis mc-lag peer <ip-address> lag 2 statistics](#)
- [Output Example: show redundancy multi-chassis mc-lag peer 10.10.10.102 statistics](#)

- [Output Example: show redundancy multi-chassis sync](#)
- [Output Example: show redundancy multi-chassis sync peer <ip-address>](#)
- [Output Example: show redundancy multi-chassis sync peer <ip-address> detail](#)
- [Output Example: show redundancy multi-chassis sync statistics](#)
- [Output Example: show redundancy multi-chassis sync peer <ip-address> statistics](#)

**Output Example: show redundancy multi-chassis mc-lag peer <ip-address>**

```
*A:Dut-C# show redundancy multi-chassis mc-lag peer 10.10.10.1
=====
Multi-Chassis MC-Lag Peer 10.10.10.1
=====
Last State chg: 09/24/2007 07:58:03
Admin State: Up      Oper State   : Up
KeepAlive: 10 deci-seconds      Hold On Nbr Failure : 3
-----
Lag Id LACP Key Remote Lag Id System Id  Sys Prio Last State Changed
-----
1      326661      00:00:00:33:33:33  32888  09/24/2007 07:56:35
-----
Number of LAGs : 1
=====
*A:Dut-C#
```

**Output Example: show redundancy multi-chassis mc-lag statistics**

```
A:pc1# show redundancy multi-chassis mc-lag statistics
=====
Multi-Chassis Statistics
=====
Packets Rx                : 129816
Packets Rx Keepalive      : 129798
Packets Rx Config         : 3
Packets Rx Peer Config    : 5
Packets Rx State          : 10
Packets Dropped KeepaliveTask : 0
Packets Dropped Packet Too Short : 0
Packets Dropped Verify Failed : 0
Packets Dropped Tlv Invalid Size : 0
Packets Dropped Out of Seq : 0
Packets Dropped Unknown Tlv : 0
Packets Dropped Tlv Invalid LagId : 0
Packets Dropped MD5       : 0
Packets Dropped Unknown Peer : 0
Packets Tx                : 77918
Packets Tx Keepalive      : 77879
Packets Tx Config         : 6
Packets Tx Peer Config    : 26
Packets Tx State          : 7
Packets Tx Failed         : 0
=====
A:pc1#
```

**Output Example: show redundancy multi-chassis mc-lag peer <ip-address> lag 2 statistics**

```
A:pc1# show redundancy multi-chassis mc-lag peer 10.10.10.102 lag 2 statistics
=====
Multi-Chassis Statistics, Peer 10.10.10.102 Lag 2
=====
```

```
Packets Rx Config      : 1
Packets Rx State      : 4
Packets Tx Config     : 2
Packets Tx State      : 3
Packets Tx Failed     : 0
=====
A:pc1#
```

**Output Example: show redundancy multi-chassis mc-lag peer 10.10.10.102 statistics**

```
A:pc1#show redundancy multi-chassis mc-lag peer 10.10.10.102 statistics
=====
Multi-Chassis Statistics, Peer 10.10.10.102
=====
Packets Rx              : 129918
Packets Rx Keepalive    : 129900
Packets Rx Config       : 3
Packets Rx Peer Config  : 5
Packets Rx State        : 10
Packets Dropped State Disabled : 0
Packets Dropped Packets Too Short : 0
Packets Dropped Tlv Invalid Size : 0
Packets Dropped Tlv Invalid LagId : 0
Packets Dropped Out of Seq : 0
Packets Dropped Unknown Tlv : 0
Packets Dropped MD5     : 0
Packets Tx              : 77979
Packets Tx Keepalive    : 77940
Packets Tx Peer Config  : 26
Packets Tx Failed       : 0
=====
A:pc1#
```

**Output Example: show redundancy multi-chassis sync**

```
A:pc1# show redundancy multi-chassis sync
=====
Multi-chassis Peer Table
=====
Peer
-----
Peer IP Address      : 10.10.10.102
Description          : C01
Authentication       : Enabled
Source IP Address    : 10.10.10.101
Admin State          : Enabled
-----
Sync-status
-----
Client Applications  :
Sync Admin State     : Up
Sync Oper State      : Up
DB Sync State        : inSync
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
=====
Peer
-----
Peer IP Address      : 10.10.20.1
```

```
Authentication      : Disabled
Source IP Address   : 0.0.0.0
Admin State         : Disabled
=====
```

```
A:pc1#
```

**Output Example: show redundancy multi-chassis sync peer <ip-address>**

```
pc1# show redundancy multi-chassis sync peer 192.0.2.1
```

```
=====
Multi-chassis Peer Table
=====
```

```
Peer
```

```
-----
Peer IP Address      : 192.0.2.1
Description          : (Not Specified)
Authentication       : Enabled
Source IP Address    : 192.0.2.2
Admin State          : Enabled
Warm standby         : No
Remote warm standby  : No
Sub-mgmt options
  DHCP lease threshold : Active (5 min.)
    Local / Remote     : 5 min. / 5 min
-----
```

```
Sync-status
```

```
-----
Client Applications  :
Sync Admin State     : Up
Sync Oper State      : Up
DB Sync State        : inSync
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
=====
```

```
MCS Application Stats
```

```
=====
Application          : igmp
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
```

```
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
```

```
Application          : igmpSnooping
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
```

```
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
```

```
Application          : subMgmt
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
```

```

Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
Application          : srrp
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
=====
A:pc1#
  
```

**Output Example: show redundancy multi-chassis sync peer <ip-address> detail**

```

A:pc1# show redundancy multi-chassis sync peer 10.10.10.102 detail
=====
Multi-chassis Peer Table
=====
Peer
-----
Peer IP Address      : 10.10.10.102
Description          : C01
Authentication       : Enabled
Source IP Address    : 10.10.10.101
Admin State          : Enabled
-----
Sync-status
-----
Client Applications  :
Sync Admin State     : Up
Sync Oper State      : Up
DB Sync State        : inSync
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
=====
MCS Application Stats
=====
Application          : igmp
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
Application          : igmpSnooping
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
Application          : subMgmt
  
```



```

Num Entries      : 0
Lcl Deleted Entries : 0
Alarm Entries    : 0
-----
Rem Num Entries  : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries : 0
-----
Application      : srrp
Num Entries      : 0
Lcl Deleted Entries : 0
Alarm Entries    : 0
-----
Rem Num Entries  : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries : 0
=====
Ports synced on peer 10.10.10.102
=====
Port/Encap      Tag
-----
1/1/1
 1-2            r1
=====
A:pc1#
    
```

**Output Example: show redundancy multi-chassis sync statistics**

```

A:pc1# show redundancy multi-chassis sync statistics
=====
Multi-chassis Peer Sync Stats
=====
Peer IP Address      : 10.10.10.102
Packets Tx Total    : 511
Packets Tx Hello    : 510
Packets Tx Data     : 0
Packets Tx Other    : 1
Packets Tx Error    : 0
Packets Rx Total    : 511
Packets Rx Hello    : 510
Packets Rx Data     : 0
Packets Rx Other    : 1
Packets Rx Error    : 0
Packets Rx Header Err : 0
Packets Rx Body Err : 0
Packets Rx Seq Num Err : 0
=====
Peer IP Address      : 10.10.20.1
Packets Tx Total    : 0
Packets Tx Hello    : 0
Packets Tx Data     : 0
Packets Tx Other    : 0
Packets Tx Error    : 0
Packets Rx Total    : 0
Packets Rx Hello    : 0
Packets Rx Data     : 0
Packets Rx Other    : 0
Packets Rx Error    : 0
Packets Rx Header Err : 0
Packets Rx Body Err : 0
Packets Rx Seq Num Err : 0
=====
A:pc1#
    
```

### Output Example: show redundancy multi-chassis sync peer <ip-address> statistics

```
A:pc1# show redundancy multi-chassis sync peer 10.10.10.102 statistics
```

```
=====
```

Multi-chassis Peer Sync Stats	
-------------------------------	--

```
=====
```

Peer IP Address	: 10.10.10.102
Packets Tx Total	: 554
Packets Tx Hello	: 553
Packets Tx Data	: 0
Packets Tx Other	: 1
Packets Tx Error	: 0
Packets Rx Total	: 554
Packets Rx Hello	: 553
Packets Rx Data	: 0
Packets Rx Other	: 1
Packets Rx Error	: 0
Packets Rx Header Err	: 0
Packets Rx Body Err	: 0
Packets Rx Seq Num Err	: 0

```
=====
```

```
A:pc1#
```

## multi-chassis

### Syntax

**multi-chassis**

### Context

[\[Tree\]](#) (clear>redundancy multi-chassis)

### Full Context

clear redundancy multi-chassis

### Description

Commands in this context clear multi-chassis parameters.

### Platforms

All

## 15.87 multi-chassis-shunt-interface

## multi-chassis-shunt-interface

### Syntax

**multi-chassis-shunt-interface**

## Context

[\[Tree\]](#) (show>ipsec multi-chassis-shunt-interface)

## Full Context

show ipsec multi-chassis-shunt-interface

## Description

This command displays information about configured multi-chassis shunt interfaces or the multi-chassis shunt interface information in the specified routing instance or service.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of IPsec multi-chassis shunt interfaces. [Table 326: Multi-Chassis Shunt Interface Field Descriptions](#) describes the output fields

### Output Example

```
show>ipsec# multi-chassis-shunt-interface
=====
IPsec Multi-Chassis Shunt Interfaces
=====
Service Id  MC Shunt Interface Name      Next Hop          Resolved
-----
Base        to84                          130.100.14.4     Yes
Base        to85                          130.110.15.5     Yes
400        to84                          130.100.14.4     Yes
400        to85                          130.110.15.5     Yes
-----
No. of IPsec MC Shunt Interfaces: 4
```

Table 326: Multi-Chassis Shunt Interface Field Descriptions

Label	Description
Service Id	The service ID
MC Shunt Interface Name	The multi-chassis shunt interface name
Next Hop	The next hop
Resolved	Resolved: Yes or No
No. of IPsec MC Shunt Interfaces	The total number of MC shunt interfaces

## 15.88 multicast-info-policy

### multicast-info-policy

#### Syntax

**multicast-info-policy** [*policy-name*] [**detail**]

#### Context

[\[Tree\]](#) (show>mcast-management multicast-info-policy)

#### Full Context

show mcast-management multicast-info-policy

#### Description

This command displays multicast path management policy information.

#### Parameters

##### *policy-name*

Specifies the bandwidth policy name, up to 32 characters.

##### **detail**

Displays detailed information.

#### Platforms

All

#### Output

The following output is an example of multicast management bandwidth policy information.

#### Output Example

```
A:PE1# show mcast-management multicast-info-policy "default" detail
=====
Multicast Info Policy
=====
-----
default
-----
Description          : (Not Specified)
Bundle default
  Description         : (Not Specified)
  Bw activity         : dynamic           Bw fall delay      : 30 s
  Admin bw           : 0 kbps             Preference         : 0
  Exp path type      : none               Keepalive override : 0 s
  Blackhole rate     : 0 kbps             Cong Prio Thd     : 4
  Ecmp opt Thd       : 7
  Prim tun if        : (Not Specified)
=====
Multicast Info Policies : 1
```

```
=====
A:PE1#
```

## 15.89 mvpn

```
mvpn
```

### Syntax

**mvpn**

**mvpn source-redundancy [root | leaf]**

### Context

[\[Tree\]](#) (show>router mvpn)

### Full Context

show router mvpn

### Description

This command displays multicast VPN related information. The router instance must be specified.

### Parameters

**root**

Displays root information.

**leaf**

Displays leaf information.

### Platforms

All

### Output

The following outputs are examples of MVPN information.

### Output Example

```
*A:Dut-C# show router 1 mvpn
=====
MVPN 1 configuration data
=====
signaling           : Bgp           auto-discovery      : Default
UMH Selection       : Highest-Ip    SA withdrawn        : Disabled
intersite-shared    : Enabled       Persist SA          : Disabled
vrf-import          : N/A
vrf-export          : N/A
vrf-target          : unicast
C-Mcast Import RT  : target:10.20.1.4:105
```

```

ipmsi          : rsvp IpmsiTemplate
i-pmsi P2MP AdmSt : Up
i-pmsi Tunnel Name : IpmsiTemplate-1-74216
enable-bfd-root  : false          enable-bfd-leaf   : false
Mdt-type        : sender-receiver

BSR signalling  : none
Wildcard s-pmsi : false
spmsi          : rsvp SpmsiTemplate
s-pmsi P2MP AdmSt : Up
max-p2mp-spmsi : 4000
data-delay-interval: 3 seconds
enable-asm-mdt  : N/A
data-threshold  : 224.0.0.0/4 --> 1 kbps
rx-threshold    : 224.0.0.0/4 --> pe-thres-add 2 --> pe-thres-delete 4
data-threshold  : ff00:db8:/8 --> 1 kbps
rx-threshold    : ff00:db8:/8 --> pe-thres-add 2 --> pe-thres-delete 4
=====

*A:Dut-D# show router 21 mvpn
=====
MVPN 21 configuration data
=====
signaling          : Bgp          auto-discovery   : Default
UMH Selection      : Highest-IP   SA withdrawn     : Disabled
intersite-shared   : Enabled      Persist SA       : Disabled
vrf-import        : N/A
vrf-export        : N/A
vrf-target        : unicast
C-Mcast Import RT : target:10.20.1.4:106

ipmsi          : ldp
i-pmsi P2MP AdmSt : Up
i-pmsi Tunnel Name : mpls-if-74217
Mdt-type        : sender-receiver

BSR signalling  : none
Wildcard s-pmsi : false
spmsi          : ldp
s-pmsi P2MP AdmSt : Up
max-p2mp-spmsi : 4000
data-delay-interval: 3 seconds
enable-asm-mdt  : N/A
data-threshold  : 224.0.0.0/4 --> 1 kbps
rx-threshold    : 224.0.0.0/4 --> pe-thres-add 2 --> pe-thres-delete 4
data-threshold  : ff00:db8:/8 --> 1 kbps
rx-threshold    : ff00:db8:/8 --> pe-thres-add 2 --> pe-thres-delete 4
=====

*A:DUT-B# show router 1 mvpn
=====
MVPN 1 configuration data
=====
signaling          : Bgp          auto-discovery   : Default
UMH Selection      : Tunnel-Status SA withdrawn     : Disabled
intersite-shared   : Enabled      Persist SA       : Disabled
vrf-import        : N/A
vrf-export        : N/A
vrf-target        : unicast
C-Mcast Import RT : target:10.20.1.2:27
ipmsi          : ldp
i-pmsi P2MP AdmSt : Up
    
```

```

i-pmsi Tunnel Name : mpls-if-74044
Mdt-type           : sender-receiver
ipmsi UMH RM       : Enabled
bandwidth          : 1000 kbps           revertive timer   : 40 seconds
BSR signalling     : none
Wildcard s-pmsi   : Disabled
Multistream-SPMSI : Disabled
spmsi              : ldp
s-pmsi P2MP AdmSt : Up
max-p2mp-spmsi    : 5
data-delay-interval : 3 seconds
enable-asm-mdt    : N/A
data-threshold     : 224.0.0.0/4 --> 0 kbps
spmsi UMH RM       : Enabled
group              : 227.1.1.1/32       source             : 150.1.1.8/32
bandwidth          : 1000 kbps         revertive timer    : 40 seconds
group              : 227.1.1.2/32       source             : 150.1.1.8/32
bandwidth          : 1000 kbps         revertive timer    : 40 seconds
group              : 227.1.1.3/32       source             : 150.1.1.8/32
bandwidth          : 1000 kbps         revertive timer    : 40 seconds
group              : 227.1.1.4/32       source             : 150.1.1.8/32
bandwidth          : 1000 kbps         revertive timer    : 40 seconds
group              : 227.1.1.5/32       source             : 150.1.1.8/32
bandwidth          : 1000 kbps         revertive timer    : 40 seconds
    
```

## 15.90 mvpn-ipv4

### mvpn-ipv4

#### Syntax

**mvpn-ipv4** [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*] [**brief**] [**type** *mvpn-type*] [**originator-ip** *ip-address*] [**source-ip** *ipv4 address | ipv6 address*] [**group-ip** *ipv4 address | ipv6 address*] [**source-as** *as-number*]

**mvpn-ipv4** [**aspath-regex** *reg-exp*] **hunt** [**community** *comm-id*] [**rd** *rd*] [**brief**] [**type** *mvpn-type*] [**originator-ip** *ip-address*] [**source-ip** *ipv4 address | ipv6 address*] [**group-ip** *ipv4 address | ipv6 address*] [**source-as** *as-number*]

**mvpn-ipv4** [**detail** | **longer**] [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*] [**type** *mvpn-type*] [**originator-ip** *ip-address*] [**source-ip** *ipv4 address | ipv6 address*] [**group-ip** *ipv4 address | ipv6 address*] [**source-as** *as-number*]

#### Context

**[Tree]** (show>router>bgp>routes mvpn-ipv4)

#### Full Context

show router bgp routes mvpn-ipv4

#### Description

This command displays BGP MVPN IPv4 routes.

## Parameters

### *reg-exp*

Displays routes matching the specified regular expression, up to 80 characters.

### *hunt*

Displays entries for the specified route.

### *comm-id*

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth:asnum:val-in-mbps**
  - **ext:4300:ovstate**
  - **ext:value1:value2**
  - **flowspec-set:ext-asnum:group-id**where:
  - *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**



- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val* | *2byte-asnumber:ext-comm-val* | *4byte-asnumber:comm-val*

### **brief**

Displays the BGP MVPN IPv4 route information in a brief format.

### **mvpn-type**

Displays information for the specified MVPN route type.

**Values** *intra-ad* | *inter-ad* | *spsmi-ad* | *leaf-ad* | *source-ad* | *shared-join* | *source-join*

### **ip-address**

Specifies the originator IP address.

**Values** *a.b.c.d*

### **ipv4 address** | **ipv6 address**

Displays the IPv4 or IPv6 address expressed in dotted decimal notation.

**Values**

<i>ipv4-address:</i>	<i>a.b.c.d</i>
<i>ipv6-address:</i>	<i>x:x:x:x:x:x:x</i> (eight 16-bit pieces)
	<i>x:x:x:x:x:d.d.d.d</i>
	<i>x: [0 to FFFF]H</i>
	<i>d: [0 to 255]D</i>

### **as-number**

Specifies the source AS number.

**Values** *0* to *4294967295*

## **Platforms**

All

## 15.91 mvpn-ipv6

### mvpn-ipv6

#### Syntax

**mvpn-ipv6** [**type** *mvpn-type*] [**rd** *rd*] [**originator-ip** *ip-address*] [**source-ip** *ipv4 address* | *ipv6 address*] [**group-ip** *ipv4 address* | *ipv6 address*] [**source-as** *as-number*] [**detail** | **longer**] [**aspath-regex** *reg-exp*] [**community** *comm-id*]

**mvpn-ipv6** [**type** *mvpn-type*] [**rd** *rd*] [**originator-ip** *ip-address*] [**source-ip** *ipv4 address* | *ipv6 address*] [**group-ip** *ipv4 address* | *ipv6 address*] [**source-as** *as-number*] **brief** [**aspath-regex** *reg-exp*] [**community** *comm-id*]

**mvpn-ipv6** [**type** *mvpn-type*] [**rd** *rd*] [**originator-ip** *ip-address*] [**source-ip** *ipv4 address* | *ipv6 address*] [**group-ip** *ipv4 address* | *ipv6 address*] [**source-as** *as-number*] **hunt** [**aspath-regex** *reg-exp*] [**community** *comm-id*]

#### Context

[\[Tree\]](#) (show>router>bgp>routes mvpn-ipv6)

#### Full Context

show router bgp routes mvpn-ipv6

#### Description

This command displays BGP MVPN IPv6 routes.

#### Parameters

##### **mvpn-type**

Displays information for the specified MVPN route type.

**Values** intra-ad | inter-ad | spmsi-ad | leaf-ad | source-ad | shared-join | source-join

##### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val* | *2byte-asnumber:ext-comm-val* | *4byte-asnumber:comm-val*

##### **ip-address**

Specifies the originator IP address.

**Values** a.b.c.d

##### **ipv4 address** | **ipv6 address**

Displays the IPv4 or IPv6 address expressed in dotted decimal notation.

<b>Values</b>	ipv4-address:	a.b.c.d
	ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x: [0 to FFFF]H d: [0 to 255]D

**as-number**

Specifies the source AS number.

**Values** 0 to 4294967295

**detail**

Displays detailed information.

**longer**

Displays the specified route and subsets of the route.

**brief**

Displays the BGP MVPN IPv6 route information in a brief format.

**reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

**comm-id**

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth:asnum:val-in-mbps**
  - **ext:4300:ovstate**
  - **ext:value1:value2**
  - **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d

- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

## Platforms

All

## 15.92 mvpn-list

### mvpn-list

#### Syntax

```
mvpn-list [type type] [auto-discovery auto-discovery] [signalling  
signalling] [group group]
```

#### Context

[\[Tree\]](#) (show>router mvpn-list)

#### Full Context

```
show router mvpn-list
```

#### Description

This command displays the list of multicast VPNs.

#### Parameters

**type**

Specifies the MVPN type.

**Values** pim, rsvp, ldp

**auto-discovery**

Specifies the auto-discovery mode.

**Values** none, default, mdt-s

**signalling**

Specifies the signalling type.

**Values** bgp, pim

**group**

Specifies the group address.

**Platforms**

All

**Output**

The following output is an example of router MVPN list information.

**Output Example**

```
*A:Dut-D# show router mvpn-list

Legend: Sig = Signal Pim-a = pim-asm Pim-s = pim-ssm A-D = Auto-Discovery
SR = Sender-Receiver SO = Sender-Only RO = Receiver-Only
=====
MVPN List
=====
VprnID   A-D      iPmsi/sPmsi GroupAddr/Lsp-Template   IPv4(S,G)/(*,G)
          Sig      Mdt-Type
-----
100      None     Pim-a/None  239.100.201.101          0/0
          Pim      N/A
          0/0
-----
Total Mvpngs : 1
=====
Total                PIM           RSVP           MLDP
-----
I-PMSI tunnels           1             0             0
TX S-PMSI tunnels        0             0             0
RX S-PMSI tunnels        0             0             0
RX PSEUDO S-PMSI tunnels 0             0             0
-----
Total IPv4 (S,G)/(*,G) : 0/0
Total IPv6 (S,G)/(*,G) : 0/0
=====
*A:Dut-D#
```

## 15.93 mvr

```
mvr
```

### Syntax

```
mvr
```

### Context

[\[Tree\]](#) (show>service>id>mld-snooping mvr)

### Full Context

```
show service id mld-snooping mvr
```

### Description

This command displays multicast VPLS registration information.

### Platforms

All

```
mvr
```

### Syntax

```
mvr
```

### Context

[\[Tree\]](#) (show>service>id>igmp-snooping mvr)

### Full Context

```
show service id igmp-snooping mvr
```

### Description

This command displays Multicast VPLS Registration (MVR) information.

### Platforms

All

### Output

The following output is an example of IGMP snooping mvr information.

### Output Example

```

A:ALA-1>show>service>id>snooping# mvr
=====
IGMP Snooping Multicast VPLS Registration info for service 10
=====
IGMP Snooping Admin State : Up

MVR Admin State           : Up
MVR Policy                 : mvr-policy
-----
Local SAPs/SDPs
-----
Svc Id      Sap/Sdp      Oper      From      Num Local
            Id          State     VPLS      Groups
-----
100         sap:1/1/10:10    Up        Local     100
100         sap:1/1/10:20    Up        Local     100
-----
MVR SAPs (from-vpls=10)
-----
Svc Id      Sap/Sdp      Oper      From      Num MVR
            Id          State     VPLS      Groups
-----
20          sap:1/1/4:100   Up        10        100
30          sap:1/1/31:10.10 Up        10        100
=====
A:ALA-1>show>service>id>snooping#
    
```

Table 327: IGMP Snooping Mvr Field Descriptions describes the show igmp-snooping mvr output fields:

Table 327: IGMP Snooping Mvr Field Descriptions

Label	Description
IGMP Snooping Admin State	The IGMP snooping administrative state
MVR Admin State	The MVR administrative state
MVR Policy	The MVR policy name
Svc ID	The service ID
Sap/SDP	The SAP or SDP ID
Oper State	The operational state
From VPLS	The originating VPLS name
Num Local Groups	The number of local groups

## 16 n Commands

### 16.1 nat

```
nat
```

#### Syntax

```
nat
```

#### Context

[\[Tree\]](#) (tools>dump nat)

[\[Tree\]](#) (tools>perform nat)

#### Full Context

```
tools dump nat
```

```
tools perform nat
```

#### Description

This command enables the dump or perform tools for NAT.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

```
nat
```

#### Syntax

```
nat
```

#### Context

[\[Tree\]](#) (clear nat)

#### Full Context

```
clear nat
```

#### Description

Commands in this context clear NAT commands.



## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

nat

## Syntax

nat

## Context

[\[Tree\]](#) (show>router nat)

## Full Context

show router nat

## Description

Commands in this context display NAT related information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

nat

## Syntax

nat

## Context

[\[Tree\]](#) (show>service nat)

## Full Context

show service nat

## Description

Commands in this context display NAT information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 16.2 nat-group

### nat-group

#### Syntax

**nat-group**

**nat-group** *nat-group-id* [associations]

**nat-group** *nat-group-id* [associations]

**nat-group** *nat-group-id* inter-chassis-redundancy

**nat-group** *nat-group-id* statistics inter-chassis-redundancy

**nat-group** *nat-group-id* statistics mda *mda-id* [non-zero-value-only]

**nat-group** *nat-group-id* member *member-number*

**nat-group** *nat-group-id* member *member-number* inter-chassis-redundancy

**nat-group** *nat-group-id* member *member-number* statistics inter-chassis-redundancy

**nat-group** *nat-group-id* member *member-number* reassembly-statistics [non-zero-value-only]

**nat-group** *nat-group-id* member *member-number* statistics [non-zero-value-only]

**nat-group** [*nat-group-id*] members

#### Context

[Tree] (show>isa nat-group)

#### Full Context

show isa nat-group

#### Description

This command lists all active member ISAs (or group members). Up to 16 group members can be displayed (16 is the supported number of LAG links). Members can share physical ISAs (MDAs) and the physical locality of the group members can be determined from the **Mda** column in the output.

The number of group members will be <=X and the actual number of displayed group members will depend on the configuration based calculation.

#### Parameters

##### *nat-group-id*

Specifies the NAT group ID.

**Values** 1 to 4

##### associations

Displays associations applicable to the specified NAT group.

**statistics**

Displays NAT group statistics.

**member**

Displays statistics information about the resources of a member of a NAT ISA group.

**member-number**

Specifies the member number.

**Values** 1 to 255

**non-zero-value-only**

Displays statistics information display whose value is bigger than zero.

**reassembly-statistics**

Displays statistics information about IP datagram reassembly on NAT-capable ISA groups.

**inter-chassis-redundancy**

Displays information about inter-chassis redundancy.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following shows output examples.

**Output Example**

```
show isa nat-group
=====
ISA NAT Group Summary
=====
Mda Group 1 Group 2 Group 3
-----
3/1 active - -
3/2 - active busy
4/1 - busy active
4/2 - standby standby
=====

*A:SR12_PPP0E>config>isa>nat-group# show isa nat-group 1
=====
ISA NAT Group 1
=====
Admin state           : inService
Operational state     : inService
Active MDA limit      : 2
-----
NAT specific information for ISA group 1
-----
Reserved sessions     : 0
High Watermark (%)    : (Not Specified)
Low Watermark (%)     : (Not Specified)
Accounting policy     : my-acct-plcy
Last Mgmt Change      : 01/28/2012 14:47:59
-----
=====
```

```

ISA Group 1 members
=====
Group Member      State           Mda  Addresses  Blocks    Se-% Hi Se-Prio
-----
1      1      active         3/1  3          3          < 1  N  0
1      2      active         3/2  4          4          < 1  N  0
-----
No. of members: 2
=====
A:SR12_PPP0E#

*A:SR12_PPP0E>config>isa>nat-group# show isa nat-group
=====
ISA NAT Group Summary
=====
Mda  Group 1          Group 2          Group 3          Group 4
-----
2/1  -                provisioned      -                -
3/1  active          -                up               -
3/1  active          -                up               -
3/2  active          -                up               -
3/2  active          -                up               -
=====
A:SR12_PPP0E#

*A:SR12_PPP0E>config>isa>nat-group# show isa nat-group 1
=====
ISA NAT Group 1
=====
Admin state           : inService
Operational state    : inService
Active MDA limit     : 2
-----
NAT specific information for ISA group 1
-----
Reserved sessions     : 0
High Watermark (%)   : (Not Specified)
Low Watermark (%)    : (Not Specified)
Accounting policy     : my-acct-plcy
Last Mgmt Change     : 01/28/2012 14:47:59
-----
ISA Group 1 members
=====
Group Member      State           Mda  Addresses  Blocks    Se-% Hi Se-Prio
-----
1      1      active         3/1  3          3          < 1  N  0
1      2      active         3/2  4          4          < 1  N  0
-----
No. of members: 2
=====
A:SR12_PPP0E#

A:SR12_PPP0E# show isa nat-group 3 member 1 statistics
=====
ISA NAT Group 3 Member 1
=====
no resource           : 0
pkt rx on wrong port : 0
unsupported protocol  : 0
    
```

```

no host or host group           : 0
no ip or port                   : 0
no matching flow                : 3
max flow exceeded              : 0
TCP no flow for RST            : 0
TCP no flow for FIN            : 0
TCP no flow                    : 0
addr. dep. filtering           : 0
ICMP type unsupported          : 0
ICMP local unsupported         : 0
ICMP checksum error           : 0
ICMP embedded checksum error  : 0
ICMP unsupported L4           : 0
ICMP too short                 : 0
ICMP length error             : 0
Pkt not IPv4 or IPv6          : 0
Pkt rcv error                  : 0
Pkt error                      : 0
IPv4 header checksum violation : 0
IPv4 header malformed         : 0
IPv4 malformed packet         : 0
IPv4 ttl zero                  : 0
IPv4 opt /IPv6 ext headers    : 0
IPv4 undefined error          : 0
IPv6 fragments unsupported    : 0
TCP/UDP malformed            : 0
TCP/UDP checksum failure     : 0
TCP/UDP length error         : 0
Pkt send error                : 0
no buf to copy pkt            : 0
no policy                      : 0
locked by mgmt core           : 0
port range log failed         : 0
MTU exceeded                  : 0
DS Lite unrecognized next hdr : 0
DS Lite unknown AFTR         : 0
too many fragments for IP packet : 0
too many fragmented packets   : 0
too many fragment holes      : 0
too many frags buffered      : 0
fragment list expired         : 0
fragment rate too high        : 0
flow log failed               : 0
no multiple host or subscr. IPs allowed : 0
to local                      : 1
to local ignored              : 0
NAT64 disabled                : 0
NAT64 invalid src addr       : 0
NAT64 frag has zero checksum : 0
NAT64 v4 has zero checksum   : 0
NAT64 ICMP frag unsupported  : 0
CPM out of memory            : 0
new flow                      : 1
TCP closed                    : 1
TCP expired                   : 0
UDP expired                   : 0
ICMP expired                  : 0
ICMP local                    : 0
found flow                    : 34
ARPs ignored                  : 4
Fragments RX L2A              : 0
Fragments RX LSN              : 0
Fragments RX DSL              : 0
Fragments RX OUT              : 0
    
```

```

Fragments TX L2A : 0
Fragments TX LSN : 0
Fragments TX DSL : 0
Fragments TX NAT64 : 0
Fragments TX OUT : 0
flow create logged : 0
flow delete logged : 0
flow log pkt tx : 0
=====
A:SR12_PPPOE#

config>isa# show isa nat-group 1 member 1 statistics
=====
ISA NAT Group 1 Member 1
=====
no resource : 0
[eNatFlowNoResource] "no resource",\
->the default, all errors without more specific reason

[eNatFlowWrongPort] "pkt rx on wrong port",\
-> packet came in on wrong port on ISA

[eNatFlowWrongProt] "unsupported protocol",\
-> protocol is not UDMP/TCP/ICMP

[eNatFlowNoHostGrp] "no host or host group",\
-> cannot create new host group because out of resources, or
current host group is not usable at the moment (because in a transient
state)

[eNatFlowNoIpOrPort] "no ip or port",\
-> no Ip or port range available

[eNatFlowNoMatchingFlow] "no matching flow",\
-> no matching flow found

[eNatFlowMaxExceeded] "max flow exceeded",\
-> max flows for subscriber exceeded

[eNatFlowTcpUnexpectedRst] "TCP no flow for RST",\
[eNatFlowTcpUnexpectedFin] "TCP no flow for FIN",\
[eNatFlowTcpUnexpected] "TCP no flow",\
-> TCP state machine problem

[eNatFlowAddressDependentFiltering] "addr. dep. filtering",\
-> pkt dropped because of addr. dependent filtering

[eNatFlowUnsupportedICMP] "ICMP type unsupported",\
-> unsupported icmp type

[eNatFlowUnsupportedLocalICMP] "ICMP local unsupported",\
-> packet to ip address on ISA is not an echo request

[eNatFlowIcmpChecksumError] "ICMP checksum error",\
-> ICMP checksum error

[eNatFlowIcmpEmbeddedPktChecksumError] "ICMP embedded checksum
error",\
-> checksum error on embedded IP header

[eNatFlowIcmpEmbeddedPktUnsupportedL4] "ICMP unsupported L4",\
-> embedded IP packet is not UDP/TCP
    
```

```

[eNatFlowIcmpTooShort]          "ICMP too short",\
-> packet too short to include the ICMP header

[eNatFlowIcmpLengthError]      "ICMP length error",\
-> packet too short to include the embedded header

[eNatFlowPacketErrorNotIp]     "Pkt not IPv4 or IPv6",\
[eNatFlowPacketErrorRecv]     "Pkt rcv error",\
[eNatFlowPacketError]         "Pkt error",\
[eNatFlowPacketErrorIpv4HdrChk] "IPv4 header checksum
violation",\
[eNatFlowPacketErrorIpv4HdrMal] "IPv4 header malformed",\
[eNatFlowPacketErrorIpv4PktMal] "IPv4 malformed packet",\
[eNatFlowPacketErrorIpv4TtlZero] "IPv4 ttl zero",\
[eNatFlowPacketErrorIpv4Optv6Ext] "IPv4 opt /IPv6 ext headers",\
[eNatFlowPacketErrorIpv4Bad]   "IPv4 undefined error", \
[eNatFlowPacketErrorIpv6Frag]  "IPv6 fragments unsupported",\
[eNatFlowPacketErrorTcpUdpMal] "TCP/UDP malformed",\
[eNatFlowPacketErrorTcpUdpChk] "TCP/UDP checksum failure",\
[eNatFlowPacketErrorTcpUdpLen] "TCP/UDP length error",\
-> malformed incoming packet

[eNatFlowPacketSendError]      "Pkt send error",\
-> failed to tx the packet

[eNatFlowPacketNoCpyBuf]       "no buf to copy pkt",\
-> failed to copy the packet to another buffer needed for
correct processing

[eNatFlowLockedByMgmtCore]     "locked by mgmt core",\
-> resources temp. locked by the mgmt core

[eNatFlowPRLogFailed]         "port range log failed",\
-> port range log failed

[eNatFlowMtuExceeded]         "MTU exceeded",\
-> outgoing packet too big for DS-Lite tunnel or nat64 mtu

[eNatFlowDslUnrecNextHdr]     "DS Lite unrecognized next
hdr",\
-> ipv6 pkt has wrong next header

[eNatFlowDslUnknownAFTR]      "DS Lite unknown AFTR",\
-> AFTR address is unrecognized

[eNatFlowTooManyFrgsForIpPkt] "too many fragments for IP
packet",\
[eNatFlowTooManyFragmentedPkts] "too many fragmented
packets",\
[eNatFlowTooManyFragHoles]    "too many fragment holes",\
[eNatFlowFragListExpire]      "fragment list expired",\
[eNatFlowTooManyFragBufs]     "too many frags buffered",\
[eNatFlowFragRateTooHigh]     "fragment rate too high",\
-> various fragment problems

[eNatFlowNoPolicy]            "no policy",\
-> vrf not mapped to a policy

[eNatFlowLogFailed]           "flow log failed",\
-> flow logging cannot follow the setup rate

[eNatFlowMultiHostOrSubscrIp] "no multiple host or
subscr. IPs allowed",\
-> multiple hosts or subscribers on the inside in use without
    
```

```
port translation

[eNatFlowToLocalError]                "to local ignored",\
-> radius authentication failure (?)

[eNatFlow64Disabled]                  "NAT64 disabled",\
-> nat64 was disabled

[eNatFlow64InvalidSource]             "NAT64 invalid src addr",\
-> source address matches pref64

[eNatFlow64FragZeroChecksum]          "NAT64 frag has zero
checksum",\
-> v4 UDP frag has zero checksum

[eNatFlow64ZeroChecksum]              "NAT64 v4 has zero checksum",\
-> v4 UDP has zero checksum, and policy configured to drop

[eNatFlow64FragIcmp]                 "NAT64 ICMP frag unsupported"\
->v4 fragmented ICMP
```

```
show isa nat-group 3
=====
ISA NAT Group 3
=====
Description           : nat-group-3
Admin state           : inService
Operational state     : inService
Degraded              : false
Redundancy            : inter-chassis
Active MDA limit      : 1
Failed MDA limit      : 0
Scaling profile       : profile1
-----
NAT specific information for ISA group 3
-----
Reserved sessions     : 0
High Watermark (%)    : (Not Specified)
Low Watermark (%)     : (Not Specified)
Accounting policy     : (Not Specified)
UPnP mapping limit    : 524288
Suppress LsnSubBlksFree : false
LSN support           : enabled
Last Mgmt Change      : 05/28/2020 17:48:58
-----
=====
ISA Group 3 members
=====
Group Member State    MDA/VM  Addresses  Blocks    Se-% Hi Se-Prio
-----
3      1      active    esa-4/2  65536     262144    < 1  N  0
-----
No. of members: 1
=====
show isa nat-group 3 inter-chassis-redundancy
=====
NAT inter-chassis redundancy
=====
State                  : active
State changes         : 3
Time of last change    : 05/28/2020 17:49:06
In control             : true
```



```
Health : 1000
Peer health : 1000
Preferred : false
Peer preferred : false
=====
```

```
show isa nat-group 3 statistics inter-chassis-redundancy
=====
NAT inter-chassis redundancy statistics
=====
Transmitted frames : 1227
Transmission failures : 0
Received frames : 1206
Receive failures (wrong peer) : 0
Keepalive timeouts : 0
=====
```

Table 328: CPM Statistics Descriptions

Field	Description
Transmitted frames	Displays the total number of transmitted frames on the CPM level.
Transmission failures	Displays the transmission failures, for example due to missing route to the peer.
Received frames	Displays the total number of received frames on the CPM level.
Received failures (wrong peer)	Displays the received failures due to wrong peer.
Keepalive timeouts	Displays the total number of keepalive timeouts.

```
show isa nat-group 3 member 1 inter-chassis-redundancy
=====
NAT inter-chassis redundancy member state
=====
State : active
Peer state : standby
Local IP address : 12.12.1.1
Remote IP address : 12.12.0.1
Unsupported flows : 0
Tracked flows : 888074
Tracked flows not synced : 112
Tracked flows pending : 960
Flows synced : 887002
Flows marked to delete : 0
Flows delete pending : 0
Time of last failure : N/A
Failure cause : N/A
=====
```

Table 329: ISA Statistics Descriptions

Field	Description
State	Displays the state of the NAT inter-chassis redundancy member.
Peer state	Displays the state of the peer.
Local IP address	Displays the local IP address.
Remote IP address	Displays the IP address of the remote client.
Unsupported flows	Displays the flows other than TCP/UDP/ICMP in 1:1 NAT that are agnostic and by default created per subscriber by configuration on both nodes. There is no need to synchronize such flows.
Tracked flows	Displays the TCP/UDP/ICMP flows.
Tracked flows not synced	Displays the outstanding flows on the active node waiting to be synchronized (transient condition). On the standby node, all flows are in this state.
Tracked flows pending	Displays the flows waiting to be acknowledged.
Flows synced	Displays the flows that are synchronized.
Flows marked to delete	Displays the flows marked to be deleted due to a timeout, deleted pinhole or simply as a result of an invoked <b>clear</b> command.
Flows delete pending	Displays the flows waiting to be deleted due to a timeout, deleted pinhole or simply as a result of an invoked <b>clear</b> command.
Time of last failure	Displays the time of the last ISA failure.
Failure cause	Displays the cause of the ISA failure.

```
show isa nat-group 3 member 1 statistics inter-chassis-redundancy
```

```
=====
NAT inter-chassis redundancy member statistics
=====
```

```
Transmitted frames                : 16540
Retransmitted frames              : 0
Transmitted flow create messages  : 1823651
Transmitted flow delete messages  : 929264
Transmitted ALG frames            : 0
Received frames                   : 32745
Received flow create messages     : 0
Received flow delete messages    : 0
Received ALG frames               : 0
Dropped flow create messages (no policy) : 0
Dropped flow create messages (no port block) : 0
```

```
Received fragments : 0
=====
```

Table 330: ISA Level Statistics Descriptions

Field	Description
Transmitted frames	Displays all transmitted frames on the ISA level.
Retransmitted frames	Displays the retransmitted frames due to loss (lack of acknowledgment).
Transmitted flow create messages	Displays the transmitted flow create messages.
Transmitted flow delete messages	Displays the transmitted flow delete messages.
Transmitted ALG messages	Displays the transmitted application layer gateway messages.
Received frames	Displays all frames received.
Received flow create messages	Displays the received flow create messages.
Received flow delete messages	Displays the received flow delete messages.
Received ALG frames	Displays the received application layer gateway messages.
Dropped flow create messages (no policy)	Displays the dropped flow create messages due to lack of policy.
Dropped flow create messages (no port block)	Displays the dropped flow create messages due to block of port.
Received fragments	Displays all fragments received.

```
show isa nat-group <nat-group-id> members
ISA Group 1 members
=====
Group Member State Mda Addresses Blocks Se-% Hi Se-Prio
-----
1 1 active 1/2 17 2088 < 1 N 0
1 2 active 1/2 17 2088 < 1 N 0
1 3 bypass 1/2 17 2088 < 1 N 0
1 4 active 2/2 17 2088 < 1 N 0
1 5 active 2/2 17 2088 < 1 N 0
-----
No. of members: 5
=====
```

Table 331: Member State Descriptions

State	Descriptions
Active	The member is actively serving traffic.

State	Descriptions
Failed	The member is in a failed state where forwarding is not possible and L2-aware bypass redundancy mode is disabled. This event is normally associated with an MS-ISA failure.
failedBypass	The member is in failed state and the subscribers that it was serving before the failover occurred are in a bypass mode. In a bypass mode, subscribers are normally routed according to the routing table in the inside routing context (as opposed to steered to MS-ISA where NAT is performed). The operator should ensure that the routing leads those subscribers to a centralized CGN node that serve as a backup device.  This event is normally associated with an MS-ISA failure while the L2-aware bypass redundancy mode is enabled.
activeBypass	The member transitions in this state after a recovery while the L2-aware bypass mode of operation is enabled. Some subscribers that this member was serving before the failover are in bypass mode, while others that came on-line after the restoration are actively being served by this member.

## nat-group

### Syntax

**nat-group** *nat-group-id* **member** *member-number* **l2-aware-subscribers**

**nat-group** *nat-group-id* **statistics** **mda** *mda-id*

**nat-group** *nat-group-id* **statistics** **inter-chassis-redundancy**

**nat-group** *nat-group-id* **member** *member-number* **resource-peak-values**

**nat-group** *nat-group-id* **member** *member-number* **statistics**

**nat-group** *nat-group-id* **member** *member-number* **statistics** **inter-chassis-redundancy**

### Context

[\[Tree\]](#) (clear>nat>isa nat-group)

### Full Context

clear nat isa nat-group

### Description

This command clears ISA nat-group commands related statistics or removes all the subscribers that are associated with a specific NAT group member.

## Parameters

### ***nat-group-id***

Specifies the NAT group ID to clear.

**Values** 1 to 4

### ***member-number***

Specifies the member number.

**Values** 1 to 255

### ***mda-id***

Specifies the MDA for which to clear performance measurements in *slot/mda* format.

**Values** slot — 1  
mda — 1 to 4

### ***l2-aware-subscribers***

Specifies to clear the NAT group ID's l2-aware subscribers.

### ***statistics***

Specifies to clear the NAT group ID's statistics.

### ***resource-peak-values***

Specifies to reset the resource peak values to the current resource measurements.

### ***inter-chassis-redundancy***

Specifies to clear the inter-chassis redundancy data.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 16.3 nat-policy

### nat-policy

#### Syntax

**nat-policy** *nat-policy-name* **associations**

**nat-policy** *nat-policy-name*

**nat-policy** *nat-policy-name* **statistics**

**nat-policy**

#### Context

[\[Tree\]](#) (show>service>nat nat-policy)

## Full Context

```
show service nat nat-policy
```

## Description

This command displays NAT policy information.

## Parameters

### *nat-policy-name*

Specifies the NAT Policy name.

**Values** 32 chars max

### **associations**

Keyword; displays the router instances and/or subscriber profiles associated with the NAT policy.

### **statistics**

Keyword; displays statistics of the specified NAT policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of this command.

### Output Example

```
show service nat nat-policy
=====
NAT policies
=====
Policy Description
-----
outPolicy
outPolicy2
outPolicy3
-----
No. of NAT policies: 3
=====

*A:SR12_PPP0E>show>router>nat# show service nat nat-policy "priv-nat-policy"
=====
NAT Policy priv-nat-policy
=====
Pool                : privpool
Router              : Base
Filtering           : endpointIndependent
Block limit         : 4
Reserved ports      : 0
Port usage High Watermark (%) : (Not Specified)
Port usage Low Watermark (%)  : (Not Specified)
Port forwarding limit : 64
Session limit       : 65535
Reserved sessions   : 0
Session usage High Watermark (%) : (Not Specified)
```

```

Session usage Low Watermark (%)      : (Not Specified)
ALG enabled                          : ftp rtsp sip
Prioritized forwarding classes       : (Not Specified)
Timeout TCP established (s)          : 7440
Timeout TCP transitory (s)           : 240
Timeout TCP SYN (s)                  : 15
Timeout TCP TIME-WAIT (s)            : 0
Timeout UDP mapping (s)              : 300
Timeout UDP initial (s)              : 15
Timeout UDP DNS (s)                  : 15
Timeout ICMP Query (s)               : 60
Timeout SIP Inactive Media (s)       : 120
Subscriber retention (s)             : 0
UDP inbound refresh                   : false
TCP MSS Adjust                       : (Not Specified)
Destination-NAT IP                   : (Not Specified)
IPFIX export policy                   : (Not Specified)
Last Mgmt Change                      : 01/28/2012 14:47:59
=====
*A:SR12_PPP0E>show>router>nat#

show service nat nat-policy "outPolicy2" associations
=====
NAT Policy outPolicy2 Subscriber Profile Associations
=====
sub_prof_B_3
-----
No. of subscriber profiles: 1
=====

show service nat nat-policy "outPolicy2" statistics
=====
NAT Policy outPolicy2 Statistics
=====
mda 3/1
-----
hostsActive : 1
hostsPeak   : 1
sessionsTcpCreated : 0
sessionsTcpDestroyed : 0
sessionsUdpCreated : 0
sessionsUdpDestroyed : 0
sessionsIcmpQueryCreated : 0
sessionsIcmpQueryDestroyed : 0
=====
    
```

## 16.4 nat-system-resources

### nat-system-resources

#### Syntax

**nat-system-resources mda** *mda-id*

**nat-system-resources mda** *mda-id* **detail**

**nat-system-resources esa-vm** *vapp-id*

**nat-system-resources detail esa-vm vapp-id**  
**nat-system-resources nat-group nat-group-id member**

### Context

[\[Tree\]](#) (show>isa nat-system-resources)

### Full Context

show isa nat-system-resources

### Description

This command displays ISA NAT system resources.

### Parameters

#### **mda-id**

Specifies the card and slot identifying a provisioned ISA.

<b>Values</b>	<i>mda-id:</i>	<i>slot [xiom]/mda</i>
	slot	1 to 2 (7750 SR-2s) 1 to 5 (7750 SR-7) 1 to 6 (7750 SR-14s) 1 to 10 (7450 ESS, 7750 SR-12) 1 to 14 (VSR) 1 to 20 (VSR)
	xiom	x1 to x2
	mda	1 to 2 (7450 ESS, 7750 SR-1, SR-2s, SR-7, SR-12, SR-14s) 1 to 4 (VSR)

#### **nat-group-id**

Specifies the NAT group ID.

<b>Values</b>	
1 to 4 (7450 ESS, 7750 SR-1, SR-2s, SR-7, SR-12, SR-14s, VSR)	
1 to 8 (7750 SR-12)	
1 to 15 (VSR)	

#### **vapp-id**

Specifies the ID of the configured ESA and ESA VM.

<b>Values</b>	<i>vapp-id:</i>	<i>esa-id/vm-id</i>
	esa-id	1 to 16



vm-id

1 to 4

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 16.5 nat64-lsn-sub

### nat64-lsn-sub

#### Syntax

**nat64-lsn-sub** **router** *router-instance* **ipv6-address-prefix** *ipv6-prefix*

#### Context

[\[Tree\]](#) (clear>nat nat64-lsn-sub)

#### Full Context

clear nat nat64-lsn-sub

#### Description

This command clears NAT mappings for NAT64 LSN subscribers.

#### Parameters

##### **router-instance**

Specifies the router instance, up to 32 characters.

##### **ipv6-prefix**

Specifies the IPv6 prefix and length.

- Values**
- x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x: [0 to FFFF]H
  - d: [0 to 255]D

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 16.6 neighbor

### neighbor

#### Syntax

**neighbor** *service-id*

#### Context

[\[Tree\]](#) (clear>service>id neighbor)

#### Full Context

clear service id neighbor

#### Description

This command clears commands for a specific service. It clears the discovered IPv6 address of the neighboring CE associated with an Ipipe SAP. When IPv6CP comes back up following the execution of this command on an IPv6CP SAP, the node checks if an IPv6 address has been learned for the remote CE attached to the Ipipe service. If one has been learned, then this is used to bring up IPv6CP.

#### Parameters

##### ***service-id***

The ID that uniquely identifies a service.

**Values** service-id: 1 to 214748364  
svc-name: A string up to 64 characters long.

##### ***service-name***

Neighboring IPv6 address.

#### Platforms

All

### neighbor

#### Syntax

**neighbor** [{**sap** *sap-id* | **sdp** *sdp-id:vc-id*} [**address** *ip-address*]] [**detail**] [*family*]

#### Context

[\[Tree\]](#) (show>service>id>pim-snooping neighbor)

## Full Context

```
show service id pim-snooping neighbor
```

## Description

This command displays PIM neighbor information.

## Parameters

### *ip-int-name*

Only displays the interface information associated with the specified IP interface name

### *sap-id*

Displays the neighbor information associated with the specified SAP

### *sdp-id:vc-id*

Displays the neighbor information associated with the specified SDP

### *ip-address*

Displays information for the neighbor with the specified IP address

### *detail*

Displays detailed neighbor information

### *family*

Displays either IPv4 or IPv6 information for the specified neighbor

**Values**    ipv4 or ipv6

## Platforms

All

## Output

The following output is an example of service PIM snooping neighbor information.

### Output Example

```
*A:PE# show service id 1 pim-snooping neighbor
=====
PIM Snooping Neighbors ipv4
=====
Port Id           Nbr DR Prty    Up Time        Expiry Time    Hold Time
  Nbr Address
-----
SAP:1/1/9:1      1              0d 00:05:23    0d 00:01:23    105
  10.0.0.1
EVPN-MPLS        1              0d 00:05:02    0d 00:01:43    105
  10.0.0.2
EVPN-MPLS        1              0d 00:05:02    0d 00:01:43    105
  10.0.0.3
-----
Neighbors : 3
=====
```

## neighbor

### Syntax

```
neighbor [ip-address | evpn-mpls | sap sap-id | sdp sdp-id:vc-id | vxlan vtep ip-address vni vni-id]  
[family]
```

### Context

**[Tree]** (clear>service>id>pim-snooping neighbor)

### Full Context

```
clear service id pim-snooping neighbor
```

### Description

This command clears PIM snooping neighbor information.

### Parameters

#### *ip-address*

Clears information for the neighbor with the specified IP address

#### **sap** *sap-id*

Clears PIM snooping entries associated with the specified SAP

#### **sdp** *sdp-id:vc-id*

Clears PIM entries associated with the specified SDP. For a spoke-SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

#### *family*

Displays either IPv4 or IPv6 information

**Values** ipv4 or ipv6

#### **evpn-mpls**

Clears PIM snooping statistics for EVPN-MPLS destinations

### Platforms

All

## neighbor

### Syntax

```
neighbor [ip-address [detail]]
```

```
neighbor [as-number [detail]]
```

```
neighbor ip-address [family [type mvpn-type] [evpn-type]] routes [brief] [community comm-id]
```

**neighbor** *ip-address* [*family*] *damping*  
**neighbor** *as-number* [*family*] *damping*  
**neighbor** *ip-address* **orf** [*paths*]  
**neighbor** *ip-address* **graceful-restart**  
**neighbor** [**dynamic**]  
**neighbor** *ip-address* **epe-statistics**

## Context

[\[Tree\]](#) (show>router>bgp neighbor)

## Full Context

show router bgp neighbor

## Description

This command displays BGP neighbor information and can be entered with or without any parameters. Issuing the command without any parameters displays information for all BGP peers. When the command is issued with a specific IP address or ASN, information is displayed only for the specified peer or peers with the same AS.

When either **received-routes** or **advertised-routes** is specified, the routes exchanged with the specified peer are listed (see the second output example, below).

When either **history** or **suppressed** is specified, the routes learned from those peers that either have a history or are suppressed (respectively) are listed.

The "State" field displays the BGP peer's protocol state. In addition to the standard protocol states, this field can also display the "Disabled" operational state, which indicates the peer is operationally disabled and must be restarted by the operator.



### Note:

The information generated by this command is not available by SNMP.

## Parameters

### **as-number**

Displays information for the specified AS number.

**Values** 1 to 4294967295

### **brief**

Displays information in a brief format. This parameter is only supported with **received-routes** and **advertised-routes**.

### **community**

Displays all routes with the specified BGP community.

### **comm-id**

Specifies community IDs, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth**:*asnum:val-in-mbps*
  - **ext:4300**:*ovstate*
  - **ext**:*value1:value2*
  - **flowspec-set**:*ext-asnum:group-id*
- where:
  - *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **llgr-stale** | **no-llgr** | **blackhole**

#### **detail**

Displays detailed information.

#### **dynamic**

Displays information for dynamic BGP neighbors.

#### **evpn-type**

Displays information for the specified EVPN route type.

- Values**
- auto-disc** — Displays the auto discovery routes for this peer.
  - mac** — Displays the MAC routes for this peer.

**inclusive-mcast** — Displays the inclusive multicast routes for this peer.

**eth-seg** — Displays the Ethernet segment routes for this peer.

**ip-prefix** — Displays the IPv4 routes for this peer.

**ipv6-prefix** — Displays the IPv6 routes for this peer.

**smet** — Displays the Selective Multicast Ethernet Tag routes for this peer.

**mcast-join-synch** — Displays the Multicast Join Synch routes for this peer.

**mcast-leave-synch** — Displays the Multicast Leave Synch routes for this peer.

### **family**

Specifies the type of routing information to display.

- Values**
- evpn** — Displays the BGP EVPN routes for this peer.
  - flow-ipv4** — Displays the BGP IPv4 flow-spec routes for this peer.
  - flow-ipv6** — Displays the BGP IPv6 flow-spec routes for this peer.
  - ipv4** — Displays the BGP IPv4 routes for this peer.
  - ipv6** — Displays the BGP IPv6 routes for this peer.
  - l2-vpn** — Displays the BGP L2 VPN routes for this peer.
  - label-ipv4** — Displays the BGP IPv4 labeled unicast routes for this peer.
  - label-ipv6** — Displays the BGP IPv6 labeled unicast routes for this peer.
  - mcast-ipv4** — Displays the BGP multicast IPv4 routes for this peer.
  - mcast-ipv6** — Displays the BGP multicast IPv6 routes for this peer.
  - mcast-vpn-ipv4** — Displays the BGP multicast VPN IPv4 routes for this peer.
  - mcast-vpn-ipv6** — Displays the BGP multicast VPN IPv6 routes for this peer.
  - mdt-safi** — Displays the BGP multicast VPN MDT-SAFI routes for this peer.
  - ms-pw** — Displays the BGP Multi-segment PW routes for this peer.
  - mvpn-ipv4** — Displays the BGP NG-MVPN IPv4 routes for this peer.
  - mvpn-ipv6** — Displays the BGP NG-MVPN IPv6 routes for this peer.
  - route-target** — Displays the BGP route-target constrain routes for this peer.
  - vpn-ipv4** — Displays the BGP VPN IPv4 routes for this peer.
  - vpn-ipv6** — Displays the BGP VPN IPv6 routes for this peer.

### ***received-routes***

Displays the number of routes received from this peer.

### ***advertised-routes***

Displays the number of routes advertised to this peer.

### ***damping***

Displays damping information for the specified AS number or neighbor IP address.

- Values**
- history** — Display statistics for dampened routes.
  - suppressed** — Display the number of paths from this peer that have been suppressed by damping.

### ***paths***

Displays ORF path information for the specified neighbor IP address.

- Values**
- send** — Displays the number of paths sent to this peer.
  - receive** — Displays the number of paths received from this peer.

### ***graceful-restart***

Displays neighbors configured for graceful restart.

### ***ip-address***

Displays information for the specified neighbor IP address.

- Values**
- ipv4-address:
    - a.b.c.d (host bits must be 0)
  - ipv6-address:
    - x:x:x:x:x:x [-interface]
    - x:x:x:x:x:d.d.d.d [-interface]
    - x: [0 to FFFF]H
    - d: [0 to 255]D
    - interface: up to 32 characters, mandatory for link local addresses

### ***mvpn-type***

Displays information for the specified MVPN route type.

- Values**
- intra-ad** — Displays the intra-ad routes for this peer.
  - inter-ad** — Displays the inter-ad routes for this peer.
  - spmsi-ad** — Displays the spmsi-ad routes for this peer.
  - leaf-ad** — Displays the leaf-ad routes for this peer.
  - source-ad** — Displays the source-ad routes for this peer.
  - shared-join** — Displays the shared-join routes for this peer.
  - source-join** — Displays the source-join routes for this peer.



**orf**

Displays outbound route filtering for the BGP instance. Outbound Route Filtering (ORF) is used to inform a neighbor of targets (using **target-list**) that it is willing to receive. This mechanism helps lessen the update exchanges between neighbors and saves CPU cycles to process routes that could have been received from the neighbor only to be dropped or ignored.

**epe-statistics**

Displays egress peer engineering (EPE) statistics for the specified IP address.

**Platforms**

All

**Output**

[Table 332: BGP neighbor fields](#) describes the standard and detailed command output fields for a BGP neighbor.

The following outputs are examples of BGP neighbor information.

**Output Example**

```
A:node-2>show>router>bgp# neighbor
=====
BGP Neighbor
=====
-----
Peer : 10.0.0.5          Group : headquarters1
-----
Peer AS      : 300Peer Port      : 0
Peer Address : 10.0.0.5
Local AS     : 200Local Port     : 0
Local Address : 10.0.0.104
Peer Type    : External          Dynamic Peer    : Yes
State       : Active            Last State      : Idle
Last Event   : stop
Last Error   : Cease
Local Family : IPv4              Remote Family   : Unused
Hold Time    : 90                Keep Alive      : 30
Active Hold Time : 0            Active Keep Alive: 0
Cluster Id   : 0.0.0.100
Preference   : 170
Recd. Prefixes : 0                Num of Flaps    : 0
Recd. Paths   : 0                Active Prefixes : 0
Input Queue   : 0                Suppressed Paths : 0
i/p Messages  : 0                Output Queue    : 0
i/p Octets    : 0                o/p Messages    : 0
i/p Updates   : 0                o/p Octets      : 0
TTL Security  : Enabled          o/p Updates     : 0
Graceful Restart : Disabled      Min TTL Value   : 255
Egress Engineering : Enabled    Stale Routes Time: n/a
Local Capability : RouteRefresh MP-BGP
Remote Capability :
Import Policy  : None Specified - Default Accept
Export Policy  : None Specified - Default Accept
-----
Peer : 10.0.0.91          Group : Santa Clara
-----
Peer AS      : 100Peer Port      : 0
Peer Address : 10.0.0.91
```

```

Local AS      : 200Local Port      : 0
Local Address : 10.0.0.103
Peer Type     : External
State        : Connect           Last State      : Active
Last Event   : openFail
Last Error   : Cease
Local Family  : IPv4             Remote Family   : Unused
Hold Time    : 90               Keep Alive     : 30
Active Hold Time : 0           Active Keep Alive: 0
Cluster Id   : 0.0.0.100
Preference   : 170              Num of Flaps   : 0
Recd. Prefixes : 0             Active Prefixes : 0
Recd. Paths   : 0             Suppressed Paths : 0
Input Queue   : 0              Output Queue    : 0
i/p Messages  : 0             o/p Messages   : 1
i/p Octets    : 0             o/p Octets     : 0
i/p Updates   : 0             o/p Updates    : 0
TTL Security  : Disabled       Min TTL Value   : n/a
Graceful Restart : Disabled    Stale Routes Time: n/a
Local Capability : RouteRefresh MP-BGP
Remote Capability:
Import Policy : None Specified - Default Accept
Export Policy : None Specified - Default Accept
...
    
```

### Output Example

```

A:node-2>show>router>bgp# neighbor
=====
BGP Neighbor
=====
Peer : 3.3.3.3
Group : bgp_group_1 34567890123456789012
-----
Peer AS      : 20           Peer Port      : 0
Peer Address : 3.3.3.3
Local AS     : 100         Local Port     : 0
Local Address : 0.0.0.0
Peer Type    : Internal
State       : Active      Last State     : Idle
Last Event  : stop
Last Error  : Cease
Local Family : IPv4
Remote Family : Unused
Hold Time   : 10          Keep Alive     : 30
Active Hold Time : 0      Active Keep Alive : 0
Cluster Id  : 2.2.3.4
Preference  : 101         Num of Flaps   : 0
Recd. Paths : 0
IPv4 Recd. Prefixes : 0   IPv4 Active Prefixes : 0
IPv4 Suppressed Pfxs : 0   VPN-IPv4 Suppr. Pfxs : 0
VPN-IPv4 Recd. Pfxs : 0   VPN-IPv4 Active Pfxs : 0
Mc IPv4 Recd. Pfxs. : 0   Mc IPv4 Active Pfxs. : 0
Mc IPv4 Suppr. Pfxs : 0   IPv6 Suppressed Pfxs : 0
IPv6 Recd. Prefixes : 0   IPv6 Active Prefixes : 0
Input Queue  : 0          Output Queue   : 0
i/p Messages : 0          o/p Messages   : 0
i/p Octets   : 0          o/p Octets     : 0
i/p Updates  : 0          o/p Updates    : 0
TTL Security  : Disabled   Min TTL Value   : n/a
Graceful Restart : Enabled  Stale Routes Time : 360
Advertise Inactive : Disabled Peer Tracking    : Enabled
    
```

```

Advertise Label      : None           Bfd Enabled        : Yes
Auth key chain       : n/a
Bfd Enabled          : Disabled Layer 2 VPN Cisco Interop : Disabled
Egress Engineering   : Enabled
Local Capability     : RouteRefresh MP-BGP
Remote Capability    :
Import Policy        : test i1
                    : test i2
                    : test i3
                    : test i4
                    : test i5 890123456789012345678901
Export Policy        : test e1
                    : test e2
                    : test e3
                    : test e4
                    : test e5 890123456789012345678901
-----
Neighbors : 1
=====
    
```

The following output is an example of information for a specific BGP neighbor.

### Output Example

```

A:node-2>show>router>bgp# neighbor 10.20.1.3
=====
BGP Neighbor
=====
Peer : 10.20.1.3
Group : 1
-----
Peer AS           : 100           Peer Port         : 49725
Peer Address      : 10.20.1.3
Local AS          : 100           Local Port        : 179
Local Address     : 10.20.1.2
Peer Type         : Internal
State             : Established   Last State        : Established
Last Event        : recvKeepAlive
Last Error        : Cease
Local Family      : IPv4
Remote Family     : IPv4
Hold Time         : 3             Keep Alive        : 1
Active Hold Time  : 3             Active Keep Alive : 1
Cluster Id        : None
Preference        : 170          Num of Flaps      : 0
Recd. Paths       : 1
IPv4 Recd. Prefixes : 11         IPv4 Active Prefixes : 10
IPv4 Suppressed Pfxs : 0         VPN-IPv4 Suppr. Pfxs : 0
VPN-IPv4 Recd. Pfxs : 0         VPN-IPv4 Active Pfxs : 0
Mc IPv4 Recd. Pfxs. : 0         Mc IPv4 Active Pfxs. : 0
Mc IPv4 Suppr. Pfxs : 0         IPv6 Suppressed Pfxs : 0
IPv6 Recd. Prefixes : 0         IPv6 Active Prefixes : 0
Input Queue       : 0             Output Queue      : 0
i/p Messages      : 471          o/p Messages      : 473
i/p Octets        : 3241         o/p Octets        : 3241
i/p Updates       : 4             o/p Updates       : 4
TTL Security      : Disabled     Min TTL Value     : n/a
Advertise Inactive : Disabled   Peer Tracking     : Disabled
Advertise Label   : None
Auth key chain    : eta_keychain1
Bfd Enabled       : Enabled Layer 2 VPN Cisco Interop : Disabled
Egress Engineering : Enabled
Local Capability  : RouteRefresh MP-BGP
Remote Capability  : RouteRefresh MP-BGP
    
```

```

Import Policy      : None Specified - Default Accept
Export Policy     : static2bgp
-----
Neighbors : 1
=====
    
```

The following outputs are examples of ORF information for specific BGP neighbors.

**Output Example**

```

A:node-2>show>router>bgp# neighbor 10.0.0.11 orf
=====
BGP Neighbor 10.0.0.11 ORF
=====
Send List (Automatic)
-----
target:65535:10
target:65535:20
=====
    
```

```

A:node-2>show>router>bgp# neighbor 10.0.0.1 orf
=====
BGP Neighbor 10.0.0.1 ORF
=====
Receive List
-----
target:65535:10
target:65535:20
=====
    
```

The following outputs are examples of SR IPv6 policy route information for BGP neighbors in the BGP and BGP group contexts.

**Output Example**

```

A:node-2>show>router>bgp# neighbor 10.20.1.3 advertised-routes sr-policy-ipv6
=====
BGP Router ID:10.20.1.2      AS:2      Local AS:2
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP SR-POLICY-v6 Routes
=====
Flag  RD/Color/End Point      LocalPref  MED
      Nexthop (Router)      Path-Id    IGP Cost
      As-Path                Label
-----
i     2/20/3ffe::a14:102      100        None
      ::a14:102              None        N/A
      No As-Path
i     3/30/::                 100        None
      ::a14:102              None        N/A
      No As-Path
-----
Routes : 2
=====
    
```

### Output Example

```
A:node-2>show>router>bgp# neighbor 10.20.1.2 received-routes sr-policy-ipv6
=====
BGP Router ID:10.20.1.3      AS:2      Local AS:2
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
                l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP SR-POLICY-v6 Routes
=====
Flag  RD/Color/End Point      LocalPref  MED
      Nexthop (Router)      Path-Id    IGP Cost
      As-Path                Label
-----
u*>i  2/20/3ffe::a14:102      100        None
      ::a14:102              None        N/A
      No As-Path
u*>i  3/30/::                 100        None
      ::a14:102              None        N/A
      No As-Path
-----
Routes : 2
=====
```

The following output is an example of detailed BGP neighbor information.

### Output Example

```
# show router bgp neighbor detail
=====
BGP Neighbor (detail)
-----
Peer : 10.0.0.15      Group : To_AS_40000
-----
Peer AS      : 65205      Peer Port    : 0
Peer Address : 10.0.0.15
Local AS     : 65206      Local Port   : 0
Local Address : 10.0.0.16
Peer Type    : External
State        : Active      Last State    : Connect
Last Event   : openFail
Last Error   : Hold Timer Expire
Connect Retry : 20      Local Pref.  : 100
Min Route Advt. : 30      Min AS Orig. : 15

Damping      : Disabled      Loop Detect   : Ignore
MED Out      : No MED Out   Authentication : None
Next Hop Self : Disabled      AggregatorID Zero: Disabled
Remove Private : Disabled      Passive      : Disabled
Prefix Limit : No Limit
Hold Time    : 90
Active Hold Time : 0      Keep Alive   : 30
Cluster Id   : None      Active Keep Alive: 0
Preference   : 170      Client Reflect : Enabled
Recd. Prefixes : 0      Num of Flaps : 0
Recd. Paths  : 0      Active Prefixes : 0
Input Queue  : 0      Suppressed Paths : 0
i/p Messages : 0      Output Queue  : 0
i/p Octets   : 0      o/p Messages  : 0
i/p Updates  : 0      o/p Octets    : 0
              : 0      o/p Updates   : 0
```

```
Export Policy      : direct2bgp
=====
```

The following output is an example of detailed information for a specific BGP neighbor.

### Output Example

```
A:node-2>show>router>bgp# neighbor 1.101.201.201 detail
=====
BGP Neighbor
=====
-----
Peer          : 1.101.201.201
Description   : (Not Specified)
Group        : onegroup
-----
Peer AS       : 200           Peer Port      : 59126
Peer Address  : 1.101.201.201
Local AS     : 100           Local Port     : 179
Local Address : 1.101.201.101
Peer Type    : External      Dynamic Peer   : No
State        : Established   Last State     : Established
Last Event   : recvOpen
Last Error   : Cease (Connection Collision Resolution)
Local Family : IPv6 MCAST-IPv4 MVPN-IPv4 Route-Target MVPN-IPv6 EVPN
              MCAST-IPv6 LABEL-IPv4 BGP-LS SR-POLICY-IPV4 SR-POLICY-
              IPV6
Remote Family : IPv6 MCAST-IPv4 MVPN-IPv4 Route-Target MVPN-IPv6 EVPN
              MCAST-IPv6 LABEL-IPv4 BGP-LS SR-POLICY-IPV4 SR-POLICY-
              IPV6
Connect Retry : 1           Local Pref.    : 100
Min Route Advt. : 1
Multihop      : 0 (Default) AS Override      : Disabled
Damping       : Disabled   Loop Detect    : Ignore
MED Out       : No MED Out Authentication : None
Next Hop Self : Disabled   AggregatorID Zero : Disabled
Remove Private : Disabled
Passive       : Disabled
Peer Identifier : 10.20.1.201   Fsm Est. Trans : 19
Fsm Est. Time : 02d07h16m InUpd Elap. Time : 02d09h04m
Hold Time     : 90           Keep Alive     : 30
Min Hold Time : 0
Active Hold Time : 90       Active Keep Alive : 30
Cluster Id    : None        Client Reflect  : Enabled
Preference    : 170        Num of Update Flaps : 12
Input Queue   : 0           Output Queue    : 0
Input Messages : 6671       Output Messages : 6687
Input Octets  : 132830     Output Octets   : 148304
Input Updates : 35         Output Updates  : 51
Input RtRefresh : 0       Output RtRefresh : 0
Duplicate Prefixes : 0     Duplicate Withdrawals : 0
As-path Loops : 17        Cluster-list Loops : 0
Originator-id Loops : 0   As-confed Loops : 0
Upd Treat As Withdraw : 0  Pfx Treat As Withdraw : 0
TTL Security  : Disabled   Min TTL Value   : n/a
Graceful Restart : Enabled  Stale Routes Time : 364
Restart Time   : 299
Long-Lived GR  : Disabled
Advertise Inactive : Disabled Peer Tracking   : Enabled
Peer Tracking Policy : peerTracking
Nexthop Res Policy : pol-non-existing
Auth key chain : n/a
Disable Cap Nego : Disabled Bfd Enabled     : Enabled
Default Route Tgt : Disabled
```

```

Aigp Metric      : Enabled      Split Horizon    : Enabled
Damp Peer Oscillatio*: Disabled  Update Errors    : 0
GR Notification  : Enabled      Fault Tolerance  : Disabled
Rem Idle Hold Time : 00h00m00s
Next-Hop Unchanged : n/a
L2 VPN Cisco Interop : Disabled
sel-lbl-ipv4-install : Disabled
Egress Engineering : Enabled
SRv6             : Disabled      SRv6 Route Advertise*: Disabled
Local Capability  : RtRefresh MPBGP 4byte ASN BfdStrictMode
Remote Capability : RtRefresh MPBGP 4byte ASN BfdStrictMode
Local AddPath Capabi*: Send - evpn (5) ipv4 (5) ipv6 (5) label-ipv4 (5)
                  : label-ipv6 (5) vpn-ipv4 (5) vpn-ipv6 (5)
                  : Receive - ipv4 vpn-ipv4 ipv6 vpn-ipv6 label-ipv4
                  : label-ipv6 evpn
Remote AddPath Capab*: Send - ipv6 label-ipv4 evpn
                  : Receive - ipv6 label-ipv4 evpn
Import Policy     : bgpimp
Export Policy     : export_bgp_optionC
                  : Default Accept
Origin Validation : n/a
Add EBGp Link-Bw : n/a
Aggr EBGp Link-Bw : n/a
Send EBGp Link-Bw : n/a
Accept EBGp Link-Bw : n/a
Adv-ipv6-next-hop : n/a
Ext-nh-encoding   : n/a
Remote Ext-nh-encodi*: n/a
Convergence Sent-EOR : ipv6 label-ipv4
Convergence Recv-EOR : ipv6 label-ipv4
Exceeded min-wait  : Yes
Ebgp Pref         : 170          Ibgp Pref       : 170
Ebgp Label Pref   : 170          Ibgp Label Pref : 170
Tcp Mss           : 1024
Tcp Rcvd Mss     : 1024
Received Paths    : 30
Backup IPv4       : 0          Backup IPv6     : 0
Backup VPN-IPv4   : 0          Backup VPN-IPv6 : 0
Backup Label-IPv4 : 0          Backup Label-IPv6 : 0
-----
Ingress prefix counters per family.
IPv4 received     : 0          IPv6 received   : 70
IPv4 active       : 0          IPv6 active     : 0
IPv4 suppressed   : 0          IPv6 suppressed : 0
IPv4 rejected     : 0          IPv6 rejected   : 0
VPN-IPv4 received : 0          VPN-IPv6 received : 0
VPN-IPv4 active   : 0          VPN-IPv6 active  : 0
VPN-IPv4 suppressed : 0       VPN-IPv6 suppressed : 0
VPN-IPv4 rejected : 0          VPN-IPv6 rejected : 0
Label-IPv4 received : 59       Label-IPv6 received : 0
Label-IPv4 active   : 17       Label-IPv6 active  : 0
Label-IPv4 suppressed: 0       Label-IPv6 suppressed: 0
Label-IPv4 rejected : 0          Label-IPv6 rejected : 0
MVPN-IPv4 received : 0          MVPN-IPv6 received : 0
MVPN-IPv4 active   : 0          MVPN-IPv6 active  : 0
MVPN-IPv4 suppressed : 0       MVPN-IPv6 suppressed : 0
MVPN-IPv4 rejected : 0          MVPN-IPv6 rejected : 0
Mcast-IPv4 received : 16       Mcast-IPv6 received : 26
Mcast-IPv4 active   : 0          Mcast-IPv6 active  : 0
Mcast-IPv4 suppressed: 0       Mcast-IPv6 suppressed: 0
Mcast-IPv4 rejected : 0          Mcast-IPv6 rejected : 0
Mc-VPN-IPv4 received : 0          Mc-VPN-IPv6 received : 0
Mc-VPN-IPv4 active   : 0          Mc-VPN-IPv6 active  : 0
    
```

```

Mc-VPN-IPv4 suppress*: 0      Mc-VPN-IPv6 suppress*: 0
Mc-VPN-IPv4 rejected : 0      Mc-VPN-IPv6 rejected : 0
MDT-Safi received    : 0      RT-Constnt received : 0
MDT-Safi active      : 0      RT-Constnt active   : 0
MDT-Safi suppressed  : 0      RT-Constnt suppress*: 0
MDT-Safi rejected    : 0      RT-Constnt rejected : 0
L2-VPN received      : 0      EVPN received       : 0
L2-VPN active        : 0      EVPN active         : 0
L2-VPN suppressed    : 0      EVPN suppressed     : 0
L2-VPN rejected      : 0      EVPN rejected       : 0
Flow-IPv4 received    : 0      Flow-IPv6 received  : 0
Flow-IPv4 active     : 0      Flow-IPv6 active    : 0
Flow-IPv4 suppressed : 0      Flow-IPv6 suppressed : 0
Flow-IPv4 rejected   : 0      Flow-IPv6 rejected  : 0
MS-PW received       : 0      BGP-LS received    : 0
MS-PW active         : 0      BGP-LS active      : 0
MS-PW suppressed     : 0      BGP-LS suppressed  : 0
MS-PW rejected       : 0      BGP-LS rejected    : 0
SRPLCY-IPV4 received : 0      SRPLCY-IPV6 received : 0
SRPLCY-IPV4 active   : 0      SRPLCY-IPV6 active   : 0
SRPLCY-IPV4 suppress*: 0      SRPLCY-IPV6 suppress*: 0
SRPLCY-IPV4 rejected : 0      SRPLCY-IPV6 rejected : 0
Flow-VPN-IPv4 receiv*: 0      Flow-VPN-IPv6 receiv*: 0
Flow-VPN-IPv4 active : 0      Flow-VPN-IPv6 active : 0
Flow-VPN-IPv4 suppre*: 0      Flow-VPN-IPv6 suppre*: 0
Flow-VPN-IPv4 reject*: 0      Flow-VPN-IPv6 reject*: 0

=====
Prefix Limits Per Address Family
=====
Family      Limit      IdleTimeout  TH   LogOnly  PostImport  ExcessInact
-----
mcastIpv4   1          forever      90   Disabled Disabled    16
labelIpv4   100000    forever      90   Disabled Disabled     0
=====

=====
SRv6 Params per Family
=====
Family      Strip Tlv
-----
No SRv6 entries configur
=====
* indicates that the corresponding row element may have been truncated.
-----
Neighbors shown : 1
=====
* indicates that the corresponding row element may have been truncated.
    
```

Table 332: BGP neighbor fields

Label	Description
Peer	The IP address of the configured BGP peer.
Group	The BGP peer group to which this peer is assigned.
Peer AS	The configured or inherited peer AS for the peer group.
Peer Address	The configured address for the BGP peer.



Label	Description
Peer Port	The TCP port number used on the far-end system.
Local AS	The configured or inherited local AS for the peer group.
Local Address	The configured or inherited local address for originating peering for the peer group.
Local Port	The TCP port number used on the local system.
Peer Type	External — Peer type configured as external BGP peers. Internal — Peer type configured as internal BGP peers.
Bfd	Yes — BFD is enabled. No — BFD is disabled.
Dynamic Peer	Yes — The session is dynamic (unconfigured). No — The session is statically configured.
State	Idle — The BGP peer is not accepting connections. ( <i>Shutdown</i> ) is displayed in addition, if the peer is administratively disabled. Active — BGP is listening for and accepting TCP connections from this peer. Connect — BGP is attempting to establish a TCP connections from this peer. Open Sent — BGP has sent an OPEN message to the peer and is waiting for an OPEN message from the peer. Open Confirm — BGP has received a valid OPEN message from the peer and is awaiting a KEEPALIVE or NOTIFICATION. Established — BGP has successfully established a peering and is exchanging routing information.
Last State	Idle — The BGP peer is not accepting connections. Active — BGP is listening for and accepting TCP connections from this peer. Connect — BGP is attempting to establish a TCP connections from this peer. Open Sent — BGP has sent an OPEN message to the peer and is waiting for an OPEN message from the peer. Open Confirm — BGP has received a valid OPEN message from the peer and is awaiting a KEEPALIVE or NOTIFICATION.
Last Event	start — BGP has initialized the BGP neighbor. stop — BGP has disabled the BGP neighbor. open — BGP transport connection opened. close — BGP transport connection closed.

Label	Description
	openFail — BGP transport connection failed to open. error — BGP transport connection error. connectRetry — Connect retry timer expired. holdTime — Hold time timer expired. keepAlive — Keepalive timer expired. recvOpen — Receive an OPEN message. revKeepalive — Receive a KEEPALIVE message. recvUpdate — Receive an UPDATE message. recvNotify — Receive a NOTIFICATION message. None — No events have occurred.
Last Error	Displays the last BGP error and subcode to occur on the BGP neighbor.
Connect Retry	The configured or inherited connect retry timer value.
Local Pref.	The configured or inherited local preference value.
Min Route Advt.	The minimum amount of time that must pass between route updates for the same IP prefix.
Min AS Originate	The minimum amount of time that must pass between updates for a route originated by the local router.
Multihop	The maximum number of router hops a BGP connection can traverse.
Damping	Disabled — BGP neighbor is configured not to dampen route flaps. Enabled — BGP neighbor is configured to dampen route flaps.
Loop Detect	Ignore — The BGP neighbor is configured to ignore routes with an AS loop. Drop — The BGP neighbor is configured to drop the BGP peering if an AS loop is detected. Off — AS loop detection is disabled for the neighbor.
MED Out	The configured or inherited MED value assigned to advertised routes without a MED attribute.
Authentication	None — No authentication is configured. MD5 — MD5 authentication is configured.
Next Hop Self	Disabled — BGP is not configured to send only its own IP address as the BGP nexthop in route updates to the specified neighbor.

Label	Description
	Enabled — BGP will send only its own IP address as the BGP nexthop in route updates to the neighbor.
AggregatorID Zero	Disabled — The BGP Neighbor is not configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates. Enabled — The BGP Neighbor is configured to set the aggregator ID to 0.0.0.0 in all originated route aggregates.
Remove Private	Disabled — BGP will not remove all private AS numbers from the AS path attribute, in updates sent to the specified neighbor. Enabled — BGP will remove all private AS numbers from the AS path attribute, in updates sent to the specified neighbor.
Passive	Disabled — BGP will actively attempt to establish a BGP connection with the specified neighbor. Enabled — BGP will not actively attempt to establish a BGP connection with the specified neighbor.
Prefix Limit	No Limit — No route limit assigned to the BGP peer group. 1 to 4294967295 — The maximum number of routes BGP can learn from a peer.
Hold Time	The configured hold time setting.
Keep Alive	The configured keepalive setting.
Active Hold Time	The negotiated hold time, if the BGP neighbor is in an established state.
Active Keep Alive	The negotiated keepalive time, if the BGP neighbor is in an established state.
Cluster Id	The configured route reflector cluster ID. None — No cluster ID has been configured.
Client Reflect	Disabled — The BGP route reflector is configured not to reflect routes to this neighbor. Enabled — The BGP route reflector is configured to reflect routes to this neighbor.
Preference	The configured route preference value for the peer group.
Num of Flaps	The number of route flaps in the neighbor connection.
Recd. Prefixes	The number of routes received from the BGP neighbor.
Active Prefixes	The number of routes received from the BGP neighbor and active in the forwarding table.

Label	Description
Recd. Paths	The number of unique sets of path attributes received from the BGP neighbor.
Suppressed Paths	The number of unique sets of path attributes received from the BGP neighbor and suppressed due to route damping.
Input Queue	The number of BGP messages to be processed.
Output Queue	The number of BGP messages to be transmitted.
i/p Messages	Total number of packets received from the BGP neighbor.
o/p Messages	Total number of packets sent to the BGP neighbor.
i/p Octets	Total number of octets received from the BGP neighbor.
o/p Octets	Total number of octets sent to the BGP neighbor.
Export Policy	The configured export policies for the peer group.
Import Policy	The configured import policies for the peer group.
Egress Engineering	Enabled — EPE is enabled for the BGP neighbor. Disabled — EPE is disabled for the BGP neighbor.

**Table 333: Standard and detailed BGP neighbor output fields** describes the command output for both the standard and detailed information for a neighbor.

The following output is an example of information about routes received from a specific BGP neighbor.

### Output Example

```
A:node-2>show>router>bgp# neighbor 1.101.201.201 received-routes
=====
BGP Router ID:10.20.1.101      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes : i - IGP, e - EGP, ? - incomplete
=====
BGP Routes
=====
Flag  Network                LocalPref  MED
     Nexthop (Router)
     As-Path
-----
u*>i  10.20.1.201/32          n/a        None
     1.101.201.201
     200
*i    10.20.1.202/32          n/a        2000
     1.101.201.201
     200
u*>i  10.20.1.231/32          n/a        1000
     1.101.201.201
     200
-----
```

```
Routes : 3
=====
```

The following output is an example of information about routes advertised to a specific BGP neighbor.

**Output Example**

```
A:node-2>show>router>bgp# neighbor 1.101.201.201 advertised-routes
=====
BGP Router ID:10.20.1.101      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
                l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP Routes
=====
Flag  Network                               LocalPref  MED
      Nexthop (Router)                     Path-Id    Label
      As-Path
-----
i     10.20.1.101/32                         n/a        None
      1.101.201.101                         88         -
      100
i     10.20.1.102/32                         n/a        2000
      1.101.201.101                         1118       -
      100
i     10.20.1.131/32                        n/a        2000
      1.101.201.101                         790        -
      100
-----
Routes : 3
=====
```

The following output is an example of information about graceful restart for a specific BGP neighbor.

**Output Example**

```
A:node-2>show>router>bgp# neighbor 10.193.0.10 graceful-restart
=====
BGP Neighbor 10.193.0.10 Graceful Restart
=====
Graceful Restart locally configured for peer: Enabled
Peer's Graceful Restart feature           : Enabled
NLRI(s) that peer supports restart for    : IPv4-Unicast IPv4-MPLS IPv4-VPN
NLRI(s) that peer saved forwarding for    : IPv4-Unicast IPv4-MPLS IPv4-VPN
NLRI(s) that restart is negotiated for    : None
NLRI(s) of received end-of-rib markers    : IPv4-Unicast
NLRI(s) of all end-of-rib markers sent    : IPv4-Unicast
Restart time locally configured for peer  : 120 seconds
Restart time requested by the peer        : 390 seconds
Time stale routes from peer are kept for  : 360 seconds
Graceful restart status on the peer       : Not currently being helped
Number of Restarts                         : 328
Last Restart at                            : 08/20/2006 12:22:06
=====
```

The following output is an example of EPE statistics for a specific BGP neighbor.

### Output Example

```
A:node-2>show>router>bgp# neighbor 10.20.1.1 epe-statistics
=====
Label Type Pkt Count Byte Count
-----
524277 node-sid 0 0
524278 adj-sid 0 0
524276 adj-sid 0 0
=====
```

Table 333: Standard and detailed BGP neighbor output fields

Label	Description
BGP Router ID	The local BGP router ID.
AS	The configured autonomous system number.
Local AS	The configured local AS setting. If not configured, then it is the same value as the AS.
Flag	u — used s — suppressed h — history d — decayed * — valid i — igp e — egp ? — incomplete > — best
Network	Route IP prefix and mask length for the route.
Next Hop	BGP nexthop for the route.
LocalPref	BGP local preference path attribute for the route.
MED	BGP Multi-Exit Discriminator (MED) path attribute for the route.
AS Path	The BGP AS path for the route.
Egress Engineering	Enabled — EPE is enabled for the BGP neighbor. Disabled — EPE is disabled for the BGP neighbor.

## neighbor

### Syntax

**neighbor** [*ip-address* | *ip-int-name*] [**detail**] [**advertised-routes**]

### Context

[\[Tree\]](#) (show>router>rip neighbor)

### Full Context

show router rip neighbor

### Description

Displays RIP neighbor interface information.

### Parameters

#### *ip-address* | *ip-int-name*

Displays information for the specified IP interface.

**Values** ip-address: a.b.c.d  
ip-int-name: 32 chars max

**Default** all neighbor interfaces

#### **advertised-routes**

Displays the routes advertised to RIP neighbors. If no neighbors are specified, then all routes advertised to all neighbors are displayed. If a specific neighbor is given then only routes advertised to the given neighbor/interface are displayed.

**Default** displays RIP information

### Platforms

All

### Output

The following output is an example of standard RIP group information, and [Table 334: Standard Show RIP Neighbor Field Descriptions](#) describes the output fields.

#### Output Example

```
*A:ALA-12# show router 3 rip neighbor
=====
RIP Neighbors
=====
Interface                Adm  Opr  Primary IP      Send  Recv  Metric
                        Mode Mode              Mode  Mode  In
-----
router-21/1              Up   Up   10.0.3.12       None  Both  1
router-21/2              Up   Up   10.0.5.12       BCast Both  1
```

```

router-21/3      Up   Up   10.0.6.12      BCast Both 1
router-21/4      Up   Up   10.0.10.12     BCast Both 1
router-21/5      Up   Up   10.0.9.12      BCast Both 1
router-21/6      Up   Up   10.0.17.12     None  Both 1
router-21/7      Up   Up   10.0.16.12     None  Both 1
=====
*A:ALA-12#
    
```

Table 334: Standard Show RIP Neighbor Field Descriptions

Label	Description
Neighbor	The RIP neighbor interface name.
Adm	Down — The RIP neighbor interface is administratively down. Up — The RIP neighbor interface is administratively up.
Opr	Down — The RIP neighbor interface is operationally down. Up — The RIP neighbor interface is operationally up.
Primary IP	The primary IP address of the RIP neighbor interface.
Send Mode	Bcast — Specifies that RIPv2 formatted messages are sent to the broadcast address Mcast — Specifies that RIPv2 formatted messages are sent to the multicast address None — Specifies that no RIP messages are sent (i.e., silent listener). RIPv1 — Specifies that RIPv1 formatted messages are sent to the broadcast address.
Recv Mode	Both — Specifies that RIP updates in either version 1 or version 2 format will be accepted. None — Specifies that RIP updates will not be accepted. RIPv1 — Specifies that RIP updates in version 1 format only will be accepted. RIPv2 — Specifies that RIP updates in version 2 format only will be accepted.
Metric In	The metric added to routes received from a RIP neighbor.

**Detailed Show RIP Neighbor Output**

The following output is an example of detailed RIP group information, and [Table 335: Detailed Show RIP Neighbor Field Descriptions](#) describes the output fields.

**Output Example**

```

*A:ALA-12# show router 3 rip peers
=====
RIP Peers
=====
Peer IP Addr      Interface Name      Version      Last Update
    
```



```

-----
10.0.5.13      router-2/2      RIPv2      0
10.0.6.16      router-2/3      RIPv2      2
10.0.9.14      router-2/5      RIPv2      8
10.0.10.15     router-2/4      RIPv2      0
-----
No. of Peers: 4
=====
*A:ALA-12#

*A:ALA-12# show router 3 rip neighbor detail
=====
RIP Neighbors (Detail)
=====
Neighbor "router-2/7"
-----
Description    : No Description Available
Primary IP     : 10.0.16.12      Group       : seven
Admin State    : Up          Oper State  : Up
Send Mode      : None       Receive Mode: Both
Metric In      : 1          Metric Out  : 1
Split Horizon  : Enabled    Check Zero  : Disabled
Message Size   : 25         Preference  : 100
Auth. Type     : None       Update Timer: 3
Timeout Timer  : 6          Flush Timer : 6
Export Policies:
  Rip2Rip
  direct2Rip
  bgp2Rip
Import Policies:
  None
=====
*A:ALA-12#
    
```

Table 335: Detailed Show RIP Neighbor Field Descriptions

Label	Description
Neighbor	The RIP neighbor name.
Description	The RIP neighbor description. No Description Available indicates no description is configured.
Primary IP	The RIP neighbor interface primary IP address.
Group	The RIP group name of the neighbor interface.
Admin State	Down — The RIP neighbor interface is administratively down. Up — The RIP neighbor interface is administratively up.
Oper State	Down — The RIP neighbor interface is operationally down. Up — The RIP neighbor interface is operationally up.
Send Mode	Bcast — Specifies that RIPv2 formatted messages are sent to the broadcast address. Mcast — Specifies that RIPv2 formatted messages are sent to the multicast address. None — Specifies that no RIP messages are sent (i.e., silent listener).

Label	Description
	RIPv1 — Specifies that RIPv1 formatted messages are sent to the broadcast address.
Recv Mode	Both — Specifies that RIP updates in either version 1 or version 2 format will be accepted. None — Specifies that RIP updates will not be accepted. RIPv1 — Specifies that RIP updates in version 1 format only will be accepted. RIPv2 — Specifies that RIP updates in version 2 format only will be accepted.
Metric In	The metric value added to routes received from a RIP neighbor.
Metric Out	The value added to routes exported into RIP and advertised to RIP neighbors.
Split Horizon	Disabled — Split horizon disabled for the neighbor. Enabled — Split horizon and poison reverse enabled for the neighbor.
Check Zero	Disabled — Checking of the mandatory zero fields in the RIPv1 and RIPv2 specifications are not checked allowing receipt of RIP messages even if mandatory zero fields are non-zero for the neighbor. Enabled — Checking of the mandatory zero fields in the RIPv1 and RIPv2 specifications and rejecting noncompliant RIP messages is enabled for the neighbor.
Message Size	The maximum number of routes per RIP update message.
Preference	The preference of RIP routes from the neighbor.
Auth. Type	Specifies the authentication type.
Update Timer	The current setting of the RIP update timer value expressed in seconds.
Timeout Timer	The current RIP timeout timer value expressed in seconds.
Export Policies	The export route policy that is used to determine routes advertised to all peers.
Import Policies	The import route policy that is used to determine which routes are accepted from RIP neighbors.

### Output Example

```
*A:ALA-12# show router 3 rip neighbors interface advertised-routes
=====
RIP Advertised Routes
=====
Destination      Interface      NextHop      Metric  Tag      TTL
-----
10.0.0.2/32      10.1.8.12     0.0.0.0      10      0x2002   n/a
10.0.0.5/32      10.1.8.12     0.0.0.0      10      0x2002   n/a
10.0.0.8/32      10.1.8.12     0.0.0.0      10      0x2002   n/a
10.0.0.9/32      10.1.8.12     0.0.0.0      10      0x2002   n/a
10.0.0.10/32     10.1.8.12     0.0.0.0      10      0x2002   n/a
10.0.0.12/32     10.1.8.12     0.0.0.0      1       0x0000   n/a
10.0.0.13/32     10.1.8.12     0.0.0.0      10      0x2002   n/a
10.0.0.14/32     10.1.8.12     0.0.0.0      16      0x0000   n/a
10.0.0.15/32     10.1.8.12     0.0.0.0      2       0x0000   n/a
```

```

10.0.0.16/32      10.1.8.12      0.0.0.0      3      0x0000      n/a
-----
No. of Advertised Routes: 10
=====
*A:ALA-12#
    
```

## neighbor

### Syntax

**neighbor** {*ip-address* | **as** *as-number* | **external** | **all**} [**soft** | **soft-inbound** | **hard**]

**neighbor** {*ip-address* | **as** *as-number* | **external** | **all**} **soft-route-refresh** [*family*]

**neighbor** {*ip-address* | **as** *as-number* | **external** | **all**} **statistics**

**neighbor** *ip-address* **end-of-rib**

### Context

[\[Tree\]](#) (clear>router>bgp neighbor)

### Full Context

clear router bgp neighbor

### Description

This command resets the specified BGP peer or set of peers. By default, or when the hard option is specified, the TCP connection is brought down and the state of the BGP session returns to IDLE.

If the **soft-route-refresh** option is specified without an accompanying *family* parameter, then the session remains established and one ROUTE\_REFRESH message is transmitted to the peer for each address family active on the session. If the **soft-route-refresh** option is specified with an accompanying *family* parameter, the session remains established and a single ROUTE\_REFRESH message is transmitted to the peer requesting that it resend only its routes belonging to that one address family.

SR OS routers respond to route refresh requests for any supported AFI/SAFI.

### Parameters

#### *ip-address*

Resets the BGP neighbor with the specified IP address.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x [-interface]
- x:x:x:x:x:d.d.d.d [-interface]
- x: [0 to FFFF]H
- d: [0 to 255]D
- interface: up to 32 characters, mandatory for link local addresses

**as *as-number***

Resets all BGP neighbors with the specified peer AS.

**Values** 1 to 65535

**external**

Resets all EBGP neighbors.

**all**

Resets all BGP neighbors.

**soft**

Specifies that BGP neighbors re-evaluate all routes in the Local-RIB against the configured export policies.

**soft-inbound**

Specifies that BGP neighbors re-evaluate all routes in the RIB-In against the configured import policies.

**hard**

Initiates a hard reconfiguration.

**statistics**

Clears BGP neighbor statistics.

**end-of-rib**

Clears the routing information base (RIB). This command applies when the router is helping the BGP neighbor through a BGP graceful restart. When the **clear router bgp neighbor** command is issued without the end-of-rib option and the neighbor is in the process of restarting, stale routes from the neighbor will be retained until the stale-routes-time is reached or else the neighbor exits graceful restart. When the command is issued with the **end-of-rib** option, stale routes from the neighbor are deleted immediately and graceful restart procedures are aborted.

**soft-route-refresh**

Clears the session by sending one or more ROUTE\_REFRESH messages to the peer, but the session stays up.

**family**

Specifies the one address family that should be encoded in the ROUTE\_REFRESH request sent to the peer.

**Values** ipv4, vpn-ipv4, ipv6, mcast-ipv4, vpn-ipv6, l2-vpn, mvpn-ipv4, mdt-safi, flow-ipv4, ms-pw, route-target, mcast-vpn-ipv4, mvpn-ipv6, flow-ipv6, evpn, mcast-ipv6, label-ipv4, label-ipv6, mcast-vpn-ipv6, bgp-ls, sr-policy-ipv4, sr-policy-ipv6, flow-vpn-ipv4, flow-vpn-ipv6

**Platforms**

All

## neighbor

### Syntax

**neighbor** [*ip-address*] [*detail*]

### Context

[\[Tree\]](#) (show>router>rsvp neighbor)

### Full Context

show router rsvp neighbor

### Description

This command shows neighbor information.

### Parameters

#### *ip-address*

Displays RSVP information about the specified IP address.

#### *detail*

Displays detailed information.

### Platforms

All

### Output

The following output is an example of RSVP neighbor information.

#### Output Example

```
*A:Dut-A>config>router>mpls>lsp$ /show router rsvp neighbor
=====
RSVP Neighbors
=====
Legend :
  LR - Local Refresh Reduction          RR - Remote Refresh Reduction
  LD - Local Reliable Delivery          RM - Remote Node supports Message ID
  LG - Local Graceful Restart           RG - Remote Graceful Restart
=====
Neighbor      Interface                Hello  Last Oper   Flags
                               Change
=====
10.20.1.2     ip-10.10.1.1             N/A   0d 00:00:44
10.20.1.3     ip-10.10.2.1             N/A   0d 00:00:44
-----
Neighbors : 2
-----
*A:Dut-A>config>router>mpls>lsp$

*A:SR1# show router rsvp neighbor detail
=====
```

```

RSVP Neighbors (Detailed)
=====
Legend :
  LR - Local Refresh Reduction          RR - Remote Refresh Reduction
  LD - Local Reliable Delivery          RM - Remote Node supports Message ID
  LG - Local Graceful Restart          RG - Remote Graceful Restart
=====

Neighbor : 30.30.30.2
-----
Interface      : int_SR1_SR3          Hello State      : Up
Last Oper Change : 0d 00:01:02        Flags            :
Source Instance : 0x6c8b7             Dst. Instance   : 0x530f8e0
Hello Refresh Time : 2 secs           Hello Timeout Time : 8 secs
Hello Timeout Cnt : 0                 Inst. Mismatch Cnt : 0
Srefresh Time Rem. : 0 secs           Epoch Num Rx     : 0
Max Msg Id Rx     : 0                 Out of order Msgs : 0
Retransmitted Msgs : 0                GR Helper       : Disabled
GR Proc Invoked Cnt: 0                GR Helper State  : None
GR Helper Time Rem : N/A              GR Nbr Restart Cap : N/A
GR Nbr Restart Time: N/A              GR Nbr Recvry Time : N/A
=====

*B:edge13# show router rsvp neighbor
=====
RSVP Neighbors
=====
Legend :
  LR - Local Refresh Reduction          RR - Remote Refresh Reduction
  LD - Local Reliable Delivery          RM - Remote Node supports Message ID
  LG - Local Graceful Restart          RG - Remote Graceful Restart
=====
Neighbor      Interface      Hello Last Oper      Flags Change
=====
10.11.101.2   e13c2_1          Up    1d 00:52:56    LR RR LD RM
              LG RG
10.11.102.2   e13c2_2          Up    1d 00:52:56    LR RR LD RM
10.11.103.3   e13s1_1          Up    1d 00:52:54    LR RR LD RM
              LG
10.11.104.3   e13s1_2          Up    1d 00:52:56
10.11.105.4   e13s2_1          Up    1d 00:52:56
10.11.106.4   e13s2_2          Up    1d 00:52:56
-----
Neighbors : 6
    
```

## neighbor

### Syntax

**neighbor** [*ip-address*] [*detail*]

### Context

**[Tree]** (tools>dump>router>rsvp neighbor)

### Full Context

tools dump router rsvp neighbor

## Description

This command dumps RSVP neighbor information.

## Parameters

### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

### *detail*

Specifies detailed information.

## Platforms

All

## Output

The following output is an example of MPLS RSVP neighbor details.

### Output Example

```
*A:Dut-C# tools dump router rsvp neighbor
NEIGHBOR:
  nbrAddr 10.10.2.1 ifIndex 2
NEIGHBOR:
  nbrAddr 10.10.11.4 ifIndex 5
Total Neighbor Count: 2
```

```
*A:Dut-C# tools dump router rsvp neighbor detail
-----
NEIGHBOR:
  nbrAddr 10.10.2.1 ifIndex 2
  Current State RSVP_NBR_CREATED
  Hello Adjacency: UP   DownStream Sessions: 1   UpStream Sessions: 0   Flags: []
  SrcInstance: 0xddfe1 DstInstance: 0xde226 LastOperChange: 000 00:00:09.940
  NbrDownCount: 0 InstanceMismatchCount: 0 HelloTimeoutCount: 0 BFDDownCount: 0
  ProtectGroupId: 1026
  Refresh Reduction FSM State: NBR_RRS_DISABLED
  Refresh Reduction: Disabled
  Ack Desired: Disabled
  Remote Neighbor Message Id: Disabled
  Remote Neighbor Srefresh: Disabled
  RR Sequence Number: 0
  NeighborRREpoch: 0 Max Message Id received: 0
  Num Tx MsgIds present in the tree: 0
  Num Rx MsgIds present in the tree: 0
  Num Ack/Nacks Queued: 0
  Num Out of order Msgs: 0
  Num Retransmitted Msgs: 0
  Num Gshut PathErrs sent: 0 Psbs Skipped: 0
  Timer Off Gshut Started at 0(0 secs back)
  Graceful Helper Disabled
  Nbr Restart Cap Absent
-----
NEIGHBOR:
  nbrAddr 10.10.11.4 ifIndex 5
  Current State RSVP_NBR_CREATED
```

```

Hello Adjacency: UP   DownStream Sessions: 1   UpStream Sessions: 0   Flags: []
SrcInstance: 0xdcd58 DstInstance: 0xdcea3 LastOperChange: 000 00:00:57.310
NbrDownCount: 0 InstanceMismatchCount: 0 HelloTimeoutCount: 0 BFDDownCount: 0
ProtectGroupId: 1025
Refresh Reduction FSM State: NBR_RRS_DISABLED
Refresh Reduction: Disabled
Ack Desired: Disabled
Remote Neighbor Message Id: Disabled
Remote Neighbor Srefresh: Disabled
RR Sequence Number: 0
NeighborRREpoch: 0 Max Message Id received: 0
Num Tx MsgIds present in the tree: 0
Num Rx MsgIds present in the tree: 0
Num Ack/Nacks Queued: 0
Num Out of order Msgs: 0
Num Retransmitted Msgs: 0
Num Gshut PathErrs sent: 0 Psbs Skipped: 0
Timer Off Gshut Started at 0(0 secs back)
Graceful Helper Disabled
Nbr Restart Cap Absent
-----
Total Neighbor Count: 2
*A:Dut-C#
  
```

## neighbor

### Syntax

**neighbor** [*ip-address* | *ip-int-name* [**address** *neighbor-ip-address*]] [**detail**] [*family*]

### Context

[\[Tree\]](#) (show>router>pim neighbor)

### Full Context

show router pim neighbor

### Description

This command displays PIM neighbor information. This can be important if an interface has more than one adjacency. For example, a LAN-interface configuration with three routers connected and all are running PIM on their LAN interfaces. These routers then have two adjacencies on their LAN interface, each with different neighbors. If the **address** *ip-address* parameter is not defined in this example, then the **show** command output would display two adjacencies.

### Parameters

#### ***ip-int-name***

Displays interface information associated with the specified IP interface name.

#### ***ip-address***

Displays interface information associated with the specified IP address.

#### ***neighbor-ip-address***

Displays information about the IP address of the neighbor, on the other side of the interface.



**detail**

Displays detailed neighbor information.

**family**

Displays family information for the specified neighbor.

**Values** ipv4, ipv6

**Platforms**

All

**Output**

The following output is an example of a PIM neighbor configuration. [Table 336: PIM Neighbor Fields](#) provides PIM neighbor field descriptions.

**Output Example**

```
ALA-1# show router pim neighbor
=====
PIM Neighbors
=====
Interface          Nbr DR   Nbr Address   Up Time      Expiry Time  Hold
                   Priority
-----
ip-10.1.7.1        5        10.1.7.7      0d 00:10:39  0d 00:01:36  105
ip-10.1.2.1        5        10.1.2.2      0d 00:10:39  0d 00:01:35  105
ip-10.111.1.1      3        10.111.1.2    0d 00:09:31  0d 00:01:15  105
-----
Neighbors : 3
=====
ALA-1#
*A:Dut-C# show router 100 pim neighbor ipv6
=====
PIM Neighbor ipv6
=====
Interface          Nbr DR Prty   Up Time      Expiry Time  Hold Time
  Nbr Address
-----
vprn_itf_C_1100    1              0d 00:02:54  0d 00:01:43  105
  ff00:db8:4403:1ff:fe01:2
mpls-if-74456(W)   1              0d 00:02:10  never         65535
  ff00:db8:a14:104
mpls-if-74457(W)   1              0d 00:02:10  never         65535
  ff00:db8:a14:105
mpls-virt-if-1030145 1              0d 00:02:44  never         65535
  ff00:db8:a14:102
-----
Neighbors : 4
=====
ALA-1# show router pim neighbor detail
=====
PIM Neighbor
=====
Interface          : ip-10.1.7.1
Neighbor Addr      : 10.1.7.7      DR Priority        : 5
Tracking Support    : No            LAN Delay(ms)     : 500
Gen Id             : 26470        Override Intvl(ms) : 2500
```

```

Up Time       : 0d 00:10:41      Expiry Time   : 0d 00:01:34
Hold Time(sec) : 105
=====
PIM Neighbor
=====
Interface     : ip-10.1.2.1
Neighbor Addr : 10.1.2.2      DR Priority    : 5
Tracking Support : No          LAN Delay(ms) : 500
Gen Id        : 37928      Override Intvl(ms) : 2500
Up Time       : 0d 00:10:42      Expiry Time   : 0d 00:01:33
Hold Time(sec) : 105
=====
PIM Neighbor
=====
Interface     : ip-10.111.1.1
Neighbor Addr : 10.111.1.2   DR Priority    : 3
Tracking Support : No          LAN Delay(ms) : 500
Gen Id        : 742098371      Override Intvl(ms) : 2500
Up Time       : 0d 00:09:33      Expiry Time   : 0d 00:01:43
Hold Time(sec) : 105
-----
Neighbors : 3
=====
ALA-1#
    
```

Table 336: PIM Neighbor Fields

Label	Description
Interface	The neighbor's interface name. (W) indicates wildcard tunnels.
Nbr DR Priority	The value of the neighbor's DR priority which is received in the hello message.
Nbr Address	The neighbor's address.
Up Time	The time since this PIM neighbor (last) became a neighbor of the local router
Expiry Time	The minimum time remaining before this PIM neighbor is aged out  0 — Means that this neighbor never ages out. This happens when the PIM neighbor sends a Hello message with holdtime set to '0xffff'.
Hold Time	The value of the hold time present in the hello message
DR Priority	The value of the neighbor's DR priority which is received in the hello message
Tracking Support	Indicates if the T bit in the LAN prune delay option was present in the hello message. This indicates the neighbor's capability to disable join message suppression.
LAN Delay	The value of the LAN delay field present in the hello message received from the neighbor

Label	Description
Gen Id	A randomly generated 32-bit value that is regenerated each time PIM forwarding is started or restarted on the interface, including when the router itself restarts. When a hello message with a new GenID is received from a neighbor, any old hello information about that neighbor is discarded and superseded by the information from the new hello message.
Override Intvl (ms)	The value of the override interval present in the Hello message

## neighbor

### Syntax

**neighbor** [*ip-int-name* | *ip-address* | *mpls-if-name*] [*family*]

### Context

[\[Tree\]](#) (clear>router>pim neighbor)

### Full Context

clear router pim neighbor

### Description

This command clears PIM neighbor data on a specified interface or IP address.

### Parameters

#### *ip-int-name*

Clears PIM neighbor on the specified interface.

#### *ip-address*

Clears PIM neighbor on the specified IP address.

#### *mpls-if-name*

Clears information associated with the specified MPLS interface.

**Values** mpls-if-index

#### *family*

Clears neighbor family information.

**Values** ipv4, ipv6

### Platforms

All

## neighbor

### Syntax

```
neighbor [{{ip-int-name | ip-address} | mac ieee-mac-address | summary}] [{dynamic | static | managed}]
```

### Context

[\[Tree\]](#) (show>router neighbor)

### Full Context

```
show router neighbor
```

### Description

This command displays information about the IPv6 neighbor cache.

### Parameters

#### *ip-int-name*

Specifies the IP interface name.

#### *ip-address*

Specifies the address of the IPv6 interface address.

#### *ieee-mac-address*

Specifies the MAC address.

#### **summary**

Displays summary neighbor information.

#### **dynamic**

Displays dynamic neighbor information.

#### **static**

Displays static neighbor information.

#### **managed**

Displays managed neighbor information.

### Platforms

All

### Output

**Neighbor Output** — The following output is an example of IPv6 neighbor information, and [Table 337: Neighbor Fields](#) describes the fields.

#### Output Example

```
B:CORE2# show router neighbor
=====
Neighbor Table (Router: Base)
```

```

=====
IPv6 Address          Interface
MAC Address          State      Expiry      Type      RTR
-----
fe80::203:faff:fe78:5c88    net1_1_2
00:16:4d:50:17:a3          STALE      03h52m08s   Dynamic   Yes
fe80::203:faff:fe81:6888    net1_2_3
00:03:fa:1a:79:22          STALE      03h29m28s   Dynamic   Yes
-----
No. of Neighbor Entries: 2
=====
B: CORE2#
    
```

Table 337: Neighbor Fields

Label	Description
IPv6 Address	Displays the IPv6 address
Interface	Displays the name of the IPv6 interface name
MAC Address	Specifies the link-layer address
State	Displays the current administrative state
Exp	Displays the number of seconds until the entry expires
Type	Displays the type of IPv6 interface
Interface	Displays the interface name
Rtr	Specifies whether a neighbor is a router
Mtu	Displays the MTU size

## neighbor

### Syntax

**neighbor** {all | ipv6-address [ interface interface-name]}

**neighbor interface** {ip-int-name | ipv6-address}

### Context

[\[Tree\]](#) (clear>router neighbor)

### Full Context

clear router neighbor

### Description

This command clears IPv6 neighbor information.

## Parameters

### **all**

Clears all IPv6 neighbors.

### **ipv6-address**

Clears the specified IPv6 neighbors.

#### **Values**

ipv6-address:	x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

### **interface-name**

Specifies the interface name.

### **ip-int-name**

Clears the specified neighbor interface information, up to 32 characters.

## Platforms

All

## neighbor

## Syntax

**neighbor [detail]**

## Context

[\[Tree\]](#) (show>ospf neighbor)

[\[Tree\]](#) (show>ospf3 neighbor)

## Full Context

show ospf neighbor

show ospf3 neighbor

## Description

This command shows all OSPFv2 or OSPFv3 neighbor information.

## Parameters

### **detail**

Displays the detailed OSPF and OSPF3 neighbor status for all routers and all instances.

## Platforms

All

## Output

The following output is an example of OSPF and OSPF3 neighbor information.

### Output Example

```
*A:Dut-C# show ospf neighbor

=====
Rtr Base OSPFv2 Instance 0 Neighbors
=====
Interface-Name          Rtr Id      State      Pri  RetxQ  TTL
  Area-Id
-----
DUTC_TO_DUTB.1.0       10.20.1.2   Full       1    0      9
  0.0.0.0
DUTC_TO_DUTE.1.0       10.20.1.5   Full       1    0      9
  0.0.0.0
DUTC_TO_DUTB.2.0       10.20.1.2   Full       1    0      9
  0.0.0.0
DUTC_TO_DUTE.2.0       10.20.1.5   Full       1    0      9
  0.0.0.0
DUTC_TO_DUTA.13.0      10.20.1.1   Full       1    0      9
  0.0.0.0
DUTC_TO_DUTA.14.0      10.20.1.1   Full       1    0      9
  0.0.0.0
-----
No. of Neighbors: 6
=====

Rtr vprn1 OSPFv2 Instance 0 Neighbors
=====
Interface-Name          Rtr Id      State      Pri  RetxQ  TTL
  Area-Id
-----
DUTC_TO_DUTA.7.0       10.20.4.1   Full       1    0      9
  0.0.0.0
DUTC_TO_DUTD.7.0       10.20.4.4   Full       1    0     12
  0.0.0.0
DUTC_TO_DUTA.8.0       10.20.4.1   Full       1    0      9
  0.0.0.0
DUTC_TO_DUTD.8.0       10.20.4.4   Full       1    0     12
  0.0.0.0
-----
No. of Neighbors: 4
=====

*A:Dut-C# show ospf neighbor detail

=====
Rtr Base OSPFv2 Instance 0 Neighbors (detail)
=====
Neighbor Rtr Id : 10.20.1.2  Interface: DUTC_TO_DUTB.1.0
-----
Neighbor IP Addr : 1.0.23.2
Local IF IP Addr : 1.0.23.3
Area Id          : 0.0.0.0
Designated Rtr  : 0.0.0.0      Backup Desig Rtr : 0.0.0.0
Neighbor State   : Full        Priority          : 1
```

```

Retrans Q Length : 0           Options          : - E - - - - 0 --
Events           : 4           Last Event Time : 09/20/2018 14:38:42
Up Time          : 0d 00:02:34 Time Before Dead : 9 sec
GR Helper        : Not Helping GR Helper Age    : 0 sec
GR Exit Reason   : None       GR Restart Reason: Unknown (0)
Bad Nbr States   : 1           LSA Inst fails  : 0
Bad Seq Num      : 0           Bad MTUs        : 0
Bad Packets      : 0           LSA not in LSDB: 0
Option Mismatches: 0          Nbr Duplicates  : 0
Num Restarts     : 0           Last Restart at : Never
<snip>
=====
*A:Dut-C#
*A:Dut-C#
*A:Dut-C# show ospf3 neighbor
=====
Rtr Base OSPFv3 Instance 0 Neighbors
=====
Interface-Name          Rtr Id          State          Pri  RetxQ  TTL
  Area-Id
-----
DUTC_TO_DUTB.3.0       10.20.2.2       Full           1    0      8
  0.0.0.0
DUTC_TO_DUTE.3.0       10.20.2.5       Full           1    0      8
  0.0.0.0
DUTC_TO_DUTB.4.0       10.20.2.2       Full           1    0      8
  0.0.0.0
DUTC_TO_DUTE.4.0       10.20.2.5       Full           1    0      8
  0.0.0.0
DUTC_TO_DUTA.15.0      10.20.2.1       Full           1    0      8
  0.0.0.0
DUTC_TO_DUTA.16.0      10.20.2.1       Full           1    0      9
  0.0.0.0
-----
No. of Neighbors: 6
=====
Rtr Base OSPFv3 Instance 64 Neighbors
=====
Interface-Name          Rtr Id          State          Pri  RetxQ  TTL
  Area-Id
-----
DUTC_TO_DUTB.5.0       10.20.3.2       Full           1    0      9
  0.0.0.0
DUTC_TO_DUTE.5.0       10.20.3.5       Full           1    0      9
  0.0.0.0
DUTC_TO_DUTB.6.0       10.20.3.2       Full           1    0      9
  0.0.0.0
DUTC_TO_DUTE.6.0       10.20.3.5       Full           1    0      9
  0.0.0.0
DUTC_TO_DUTA.17.0      10.20.3.1       Full           1    0      9
  0.0.0.0
DUTC_TO_DUTA.18.0      10.20.3.1       Full           1    0      9
  0.0.0.0
-----
No. of Neighbors: 6
=====
<snip>
=====
*A:Dut-C# show ospf3 neighbor detail
    
```



```
=====
Rtr Base OSPFv3 Instance 0 Neighbors (detail)
=====
-----
Neighbor Rtr Id : 10.20.2.2 Interface: DUTC_TO_DUTB.3.0
-----
Neighbor IP Addr : fe80::200:ff:fe00:2-"DUTC_TO_DUTB.3.0"
Local IF IP Addr : fe80::200:ff:fe00:3-"DUTC_TO_DUTB.3.0"
Area Id          : 0.0.0.0
Designated Rtr  : 0.0.0.0 Backup Desig Rtr : 0.0.0.0
Neighbor State  : Full Priority           : 1
Retrans Q Length : 0 Options             : ----R--EV6
Events         : 4 Last Event Time   : 09/20/2018 14:38:43
Up Time        : 0d 00:03:01 Time Before Dead : 8 sec
GR Helper      : Not Helping GR Helper Age   : 0 sec
GR Exit Reason : None GR Restart Reason: Unknown (0)
Bad Nbr States : 1 LSA Inst fails  : 0
Bad Seq Nums   : 0 Bad MTUs         : 0
Bad Packets    : 0 LSA not in LSDB : 0
Option Mismatches: 0 Nbr Duplicates  : 0
Num Restarts   : 0 Last Restart at  : Never
-----
Neighbor Rtr Id : 10.20.2.5 Interface: DUTC_TO_DUTE.3.0
-----
Neighbor IP Addr : fe80::200:ff:fe00:5-"DUTC_TO_DUTE.3.0"
Local IF IP Addr : fe80::200:ff:fe00:3-"DUTC_TO_DUTE.3.0"
Area Id          : 0.0.0.0
Designated Rtr  : 0.0.0.0 Backup Desig Rtr : 0.0.0.0
Neighbor State  : Full Priority           : 1
Retrans Q Length : 0 Options             : ----R--EV6
Events         : 6 Last Event Time   : 09/20/2018 14:38:43
Up Time        : 0d 00:03:02 Time Before Dead : 9 sec
GR Helper      : Not Helping GR Helper Age   : 0 sec
GR Exit Reason : None GR Restart Reason: Unknown (0)
Bad Nbr States : 0 LSA Inst fails  : 0
Bad Seq Nums   : 0 Bad MTUs         : 0
Bad Packets    : 0 LSA not in LSDB : 0
Option Mismatches: 0 Nbr Duplicates  : 0
Num Restarts   : 0 Last Restart at  : Never
-----
Neighbor Rtr Id : 10.20.2.2 Interface: DUTC_TO_DUTB.4.0
-----
Neighbor IP Addr : fe80::200:ff:fe00:2-"DUTC_TO_DUTB.4.0"
Local IF IP Addr : fe80::200:ff:fe00:3-"DUTC_TO_DUTB.4.0"
Area Id          : 0.0.0.0
Designated Rtr  : 0.0.0.0 Backup Desig Rtr : 0.0.0.0
Neighbor State  : Full Priority           : 1
Retrans Q Length : 0 Options             : ----R--EV6
Events         : 4 Last Event Time   : 09/20/2018 14:38:43
Up Time        : 0d 00:03:02 Time Before Dead : 9 sec
GR Helper      : Not Helping GR Helper Age   : 0 sec
GR Exit Reason : None GR Restart Reason: Unknown (0)
Bad Nbr States : 1 LSA Inst fails  : 0
Bad Seq Nums   : 0 Bad MTUs         : 0
Bad Packets    : 0 LSA not in LSDB : 0
Option Mismatches: 0 Nbr Duplicates  : 0
Num Restarts   : 0 Last Restart at  : Never
-----
<snip>
=====
*A:Dut-C#
=====
```

## neighbor

### Syntax

**neighbor** [*ip-int-name* | *ip-address*] [**detail**]

**neighbor** [*ip-int-name*] [*router-id*] [**detail**]

**neighbor overview**

**neighbor** [**remote** *ip-address*] [**detail**]

### Context

[\[Tree\]](#) (show>router>ospf3 neighbor)

[\[Tree\]](#) (show>router>ospf neighbor)

### Full Context

show router ospf3 neighbor

show router ospf neighbor

### Description

This command displays neighbor information. To reduce the amount of output, the user can select the neighbors on a given interface by address or name.

The **detail** option produces a large amount of data. It is recommended to use **detail** only when requesting a specific neighbor.

### Parameters

#### *ip-int-name*

Displays neighbor information only for neighbors of the interface identified by the interface name.

#### *ip-address*

Displays neighbor information only for neighbors of the interface identified by the IP address.

#### *router-id*

Displays neighbor information for the neighbor identified by the specified router ID in the **show> router>ospf3** context.

#### **remote**

Displays neighbor information for the neighbor identified by the specified remote IP address in the **show>router>ospf** context.

### Platforms

All

### Output

Standard OSPF Neighbor Output

**Table 338: OSPF Neighbor Output Fields** describes the standard command output fields for an OSPF neighbor.

*Table 338: OSPF Neighbor Output Fields*

Label	Description
Nbr IP Addr	The IP address this neighbor is using in its IP Source Address. On addressless links, this will not be 0.0.0.0, but the address of another of the neighbor's interfaces.
Nbr Rtr Id	A 32-bit integer uniquely identifying the neighboring router in the Autonomous System.
Nbr State	<p>Down — This is the initial state of a neighbor conversation. It indicates that there has been no recent information received from the neighbor.</p> <p>Attempt — This state is only valid for neighbors attached to NBMA networks. It indicates that no recent information has been received from the neighbor, but that a more concerted effort should be made to contact the neighbor.</p> <p>Init — In this state, a Hello packet has recently been seen from the neighbor. However, bidirectional communication has not yet been established with the neighbor (the router itself did not appear in the neighbor's Hello packet).</p> <p>Two Way — In this state, communication between the two routers is bidirectional.</p> <p>ExchStart — This is the first step in creating an adjacency between the two neighboring routers. The goal of this step is to decide which router is the master, and to decide upon the initial Database Descriptor sequence number.</p> <p>Exchange — In this state the router is describing its entire link state database by sending Database Description packets to the neighbor.</p> <p>Loading — In this state, Link State Request packets are sent to the neighbor asking for the more recent LSAs that have been discovered (but not yet received) in the Exchange state.</p> <p>Full — In this state, the neighboring routers are fully adjacent. These adjacencies will now appear in router-LSAs and network-LSAs.</p>
Priority	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.
RetxQ Len	The current length of the retransmission queue.

Label	Description
Dead Time	The time until this neighbor is declared down, this timer is set to the dead router interval when a valid hello packet is received from the neighbor.
No. of Neighbors	The number of adjacent OSPF neighbors on this interface.

### Output Example

```
A:ALA-A# show router ospf 1 neighbor
=====
Rtr Base OSPFv2 Instance 1 Neighbors
=====
Interface-Name          Rtr Id          State    Pri  RetxQ  TTL
-----
pc157-2/1               10.13.8.158    Full     1    0      37
pc157-2/2               10.13.7.165    Full    100  0      33
pc157-2/3               10.13.6.188    Full     1    0      38
-----
No. of Neighbors: 3
=====
A:ALA-A#
```

### Detailed OSPF Neighbor Output

[Table 339: Detailed OSPF Neighbor Output Fields](#) describes the detailed command output fields for an OSPF neighbor.

*Table 339: Detailed OSPF Neighbor Output Fields*

Label	Description
Neighbor IP Addr	The IP address this neighbor is using in its IP source address. On addressless links, this will not be 0.0.0.0, but the address of another of the neighbor's interfaces.
Local IF IP Addr	The IP address of this OSPF interface.
Area Id	A 32-bit integer uniquely identifying the area to which this interface is connected. Area ID 0.0.0.0 is used for the OSPF backbone
Designated Rtr	The IP Interface address of the router identified as the Designated Router for the network in which this interface is configured. Set to 0.0.0.0 if there is no Designated router.
Neighbor Rtr Id	A 32-bit integer uniquely identifying the neighboring router in the AS.
Neighbor State	Down — This is the initial state of a neighbor conversation. It indicates that there has been no recent information received from the neighbor.  Attempt — This state is only valid for neighbors attached to NBMA networks. It indicates that no recent information has been

Label	Description
	<p>received from the neighbor, but that a more concerted effort should be made to contact the neighbor.</p> <p>Init — In this state, a Hello packet has recently been seen from the neighbor. However, bidirectional communication has not yet been established with the neighbor (the router itself did not appear in the neighbor's Hello packet).</p> <p>Two Way — In this state, communication between the two routers is bidirectional.</p> <p>Exchange start — This is the first step in creating an adjacency between the two neighboring routers. The goal of this step is to decide which router is the master, and to decide upon the initial Database Descriptor sequence number.</p> <p>Exchange — In this state the router is describing its entire link state database by sending Database Description packets to the neighbor.</p> <p>Loading — In this state, Link State Request packets are sent to the neighbor asking for the more recent LSAs that have been discovered (but not yet received) in the Exchange state.</p> <p>Full — In this state, the neighboring routers are fully adjacent. These adjacencies will now appear in router-LSAs and network-LSAs.</p>
Priority	The priority of this neighbor in the designated router election algorithm. The value 0 signifies that the neighbor is not eligible to become the designated router on this particular network.
Retrans Q Length	The current length of the retransmission queue.
Options	E — External Routes Support MC — Multicast Support N/P — Type 7 LSA Support EA — External Attribute LSA Support DC — Demand Circuit Support O — Opaque LSA Support
Backup Desig Rtr	The IP Interface address of the router identified as the Backup Designated Router for the network in which this interface is configured. Set to 0.0.0.0 if there is no backup designated router.
Events	The number of times this neighbor relationship has changed state, or an error has occurred.
Last Event Time	The time when the last event occurred that affected the adjacency to the neighbor.

Label	Description
Up Time	This value represents the uninterrupted time, in hundredths of seconds, the adjacency to this neighbor has been up. To evaluate when the last state change occurred see last event time.
Time Before Dead	The time until this neighbor is declared down, this timer is set to the dead router interval when a valid hello packet is received from the neighbor.
Bad Nbr States	The total number of OSPF packets received when the neighbor state was not expecting to receive this packet type since this interface was last enabled.
LSA Inst fails	The total number of times an LSA could not be installed into the LSDB due to a resource allocation issue since this interface was last enabled.
Bad Seq Nums	The total number of times when a database description packet was received with a sequence number mismatch since this interface was last enabled.
Bad MTUs	The total number of times when the MTU in a received database description packet was larger than the MTU of the receiving interface since this interface was last enabled.
Bad Packets	The total number of times when an LS update was received with an illegal LS type or an option mismatch since this interface was last enabled.
LSA not in LSDB	The total number of times when an LS request was received for an LSA not installed in the LSDB of this router since this interface was last enabled.
Option Mismatches	The total number of times when a LS update was received with an option mismatch since this interface was last enabled.
Nbr Duplicates	The total number of times when a duplicate database description packet was received during the exchange state since this interface was last enabled.

### Output Example

```
*A:Dut-C# show router ospf neighbor detail
=====
Rtr Base OSPFv2 Instance 0 Neighbors (detail)
=====
-----
Neighbor Rtr Id : 10.20.1.1 Interface: to_Dut-A
-----
Neighbor IP Addr : 1.1.3.1
Local IF IP Addr : 1.1.3.3
Area Id          : 0.0.0.1           Adj SR SID      : Label 262141
Designated Rtr  : 10.20.1.3         Backup Desig Rtr : 10.20.1.1
```

```

Neighbor State      : Full          Priority      : 1
Retrans Q Length   : 0             Options      : - E - - - - 0 --
Events            : 5             Last Event Time : 05/27/2015 08:36:02
Up Time           : 0d 00:11:01    Time Before Dead : 8 sec
GR Helper         : Not Helping    GR Helper Age  : 0 sec
GR Exit Reason    : None          GR Restart Reason: Unknown
Bad Nbr States    : 1             LSA Inst fails  : 0
Bad Seq Nums      : 0             Bad MTUs        : 0
Bad Packets       : 0             LSA not in LSDB : 0
Option Mismatches: 0             Nbr Duplicates  : 0
Num Restarts      : 0             Last Restart at : Never
-----
Neighbor Rtr Id    : 10.20.1.2    Interface: to_Dut-B1
-----
Neighbor IP Addr   : 1.2.3.2
Local IF IP Addr   : 1.2.3.3
Area Id            : 0.0.0.1      Adj SR SID      : Label 262139
Designated Rtr    : 10.20.1.3    Backup Desig Rtr : 10.20.1.2
Neighbor State     : Full          Priority        : 1
Retrans Q Length   : 0             Options        : - E - - - - 0 --
Events            : 6             Last Event Time : 05/27/2015 08:36:03
Up Time           : 0d 00:11:03    Time Before Dead : 10 sec
GR Helper         : Not Helping    GR Helper Age  : 0 sec
GR Exit Reason    : None          GR Restart Reason: Unknown
Bad Nbr States    : 1             LSA Inst fails  : 0
Bad Seq Nums      : 0             Bad MTUs        : 0
Bad Packets       : 0             LSA not in LSDB : 0
Option Mismatches: 0             Nbr Duplicates  : 0
Num Restarts      : 0             Last Restart at : Never
-----
Neighbor Rtr Id    : 10.20.1.2    Interface: to_Dut-B2
-----
Neighbor IP Addr   : 2.2.3.2
Local IF IP Addr   : 2.2.3.3
Area Id            : 0.0.0.0      Adj SR SID      : Label 262138
Designated Rtr    : 10.20.1.3    Backup Desig Rtr : 10.20.1.2
Neighbor State     : Full          Priority        : 1
Retrans Q Length   : 0             Options        : - E - - - - 0 --
Events            : 5             Last Event Time : 05/27/2015 08:36:03
Up Time           : 0d 00:11:01    Time Before Dead : 9 sec
GR Helper         : Not Helping    GR Helper Age  : 0 sec
GR Exit Reason    : None          GR Restart Reason: Unknown
Bad Nbr States    : 1             LSA Inst fails  : 0
Bad Seq Nums      : 0             Bad MTUs        : 0
Bad Packets       : 0             LSA not in LSDB : 0
Option Mismatches: 0             Nbr Duplicates  : 0
Num Restarts      : 0             Last Restart at : Never
-----
Neighbor Rtr Id    : 10.20.1.5    Interface: to_Dut-E
-----
Neighbor IP Addr   : 1.3.5.5
Local IF IP Addr   : 1.3.5.3
Area Id            : 0.0.0.0      Adj SR SID      : Label 262140
Designated Rtr    : 10.20.1.5    Backup Desig Rtr : 10.20.1.3
Neighbor State     : Full          Priority        : 1
Retrans Q Length   : 0             Options        : - E - - - - 0 --
Events            : 7             Last Event Time : 05/27/2015 08:36:04
Up Time           : 0d 00:11:01    Time Before Dead : 8 sec
GR Helper         : Not Helping    GR Helper Age  : 0 sec
GR Exit Reason    : None          GR Restart Reason: Unknown
Bad Nbr States    : 0             LSA Inst fails  : 0
Bad Seq Nums      : 0             Bad MTUs        : 0
Bad Packets       : 0             LSA not in LSDB : 0
Option Mismatches: 0             Nbr Duplicates  : 0
    
```

```
Num Restarts      : 0                Last Restart at   : Never
=====
*A:DLT-C#
A:ALA-A# show router ospf 1 neighbor detail
=====
Rtr Base OSPFv2 Instance 1 Neighbors (detail)
-----
Neighbor Rtr Id   : 10.13.8.158        Interface: pc157-2/1
-----
Neighbor IP Addr  : 10.16.1.8
Local IF IP Addr  : 10.16.1.7
Area Id           : 0.0.0.0
Designated Rtr   : 0.0.0.0            Backup Desig Rtr : 0.0.0.0
Neighbor State    : Full               Priority          : 1
Retrans Q Length  : 0                 Options           : -E--0-
Events            : 4                 Last Event Time  : 05/06/2006 00:11:16
Up Time           : 1d 18:20:20        Time Before Dead : 38 sec
GR Helper         : Not Helping        GR Helper Age    : 0 sec
GR Exit Reason    : None               GR Restart Reason: Unknown
Bad Nbr States    : 1                 LSA Inst fails   : 0
Bad Seq Nums      : 0                 Bad MTUs         : 0
Bad Packets       : 0                 LSA not in LSDB  : 0
Option Mismatches: 0                 Nbr Duplicates   : 0
Num Restarts      : 0                 Last Restart at  : Never
-----
Neighbor Rtr Id   : 10.13.7.165        Interface: pc157-2/2
-----
Neighbor IP Addr  : 10.12.1.3
Local IF IP Addr  : 10.12.1.7
Area Id           : 0.0.0.0
Designated Rtr   : 10.13.9.157        Backup Desig Rtr : 10.13.7.165
Neighbor State    : Full               Priority          : 100
Retrans Q Length  : 0                 Options           : -E--0-
Events            : 4                 Last Event Time  : 05/05/2006 01:39:13
Up Time           : 0d 16:52:27        Time Before Dead : 33 sec
GR Helper         : Not Helping        GR Helper Age    : 0 sec
GR Exit Reason    : None               GR Restart Reason: Unknown
Bad Nbr States    : 0                 LSA Inst fails   : 0
Bad Seq Nums      : 0                 Bad MTUs         : 0
Bad Packets       : 0                 LSA not in LSDB  : 0
Option Mismatches: 0                 Nbr Duplicates   : 0
Num Restarts      : 0                 Last Restart at  : Never
-----
Neighbor Rtr Id   : 10.13.6.188        Interface: pc157-2/3
-----
Neighbor IP Addr  : 10.14.1.4
Local IF IP Addr  : 10.14.1.7
Area Id           : 0.0.0.0
Designated Rtr   : 10.13.9.157        Backup Desig Rtr : 10.13.6.188
Neighbor State    : Full               Priority          : 1
Retrans Q Length  : 0                 Options           : -E--0-
Events            : 4                 Last Event Time  : 05/05/2006 08:35:18
Up Time           : 0d 09:56:25        Time Before Dead : 38 sec
GR Helper         : Not Helping        GR Helper Age    : 0 sec
GR Exit Reason    : None               GR Restart Reason: Unknown
Bad Nbr States    : 1                 LSA Inst fails   : 0
Bad Seq Nums      : 0                 Bad MTUs         : 0
Bad Packets       : 0                 LSA not in LSDB  : 0
Option Mismatches: 0                 Nbr Duplicates   : 0
Num Restarts      : 0                 Last Restart at  : Never
=====
A:ALA-A#
```



## neighbor

### Syntax

**neighbor** [*ip-int-name* | *ip-address*]

**neighbor** [*ip-int-name*] [*router-id*]

### Context

**[Tree]** (clear>router>ospf neighbor)

**[Tree]** (clear>router>ospf3 neighbor)

### Full Context

clear router ospf neighbor

clear router ospf3 neighbor

### Description

This command marks the neighbor as dead and re-initiates the affected adjacencies.

### Parameters

#### *ip-int-name*

Clears all neighbors for the interface specified by this interface name.

#### *ip-address*

Clears all neighbors for the interface specified by this IP address.

#### *router-id*

Clears all neighbors for the interface specified by this router ID.

### Platforms

All

## neighbor

### Syntax

**neighbor** [*ip-int-name* | *ipv6-address*] [**detail**]

**neighbor** [**detail**] **advertised-routes** [*ip-int-name* | *ipv6-link-local-address*]

### Context

**[Tree]** (show>router>ripng neighbor)

### Full Context

show router ripng neighbor

## Description

This command displays RIPng neighbor interface information. If no IPv6 interface or address is specified, this command displays information for all neighbor interfaces.

## Parameters

### *ip-int-name* | *ipv6-address*

Displays information for the specified IPv6 interface and address.

### *advertised-routes*

Displays the routes advertised to RIPng neighbors. If no neighbors are specified, all routes advertised to all neighbors are displayed. If a neighbor is specified, only routes advertised to that neighbor/interface are displayed.

### *ipv6-link-local-address*

Displays information about the of the IPv6 link local address for the neighbor.

### *detail*

Displays detailed information.

## Platforms

All

## Output

The following output is an example of RIPng neighbor information.

### Output Example

```
*A:Dut-C>config>router>if# show router ripng neighbor "one"
=====
RIP-NG Neighbors
=====
Interface                Adm  Opr  Primary IP          Send  Recv  Metric
                        Mode Mode                Mode  Mode  In
-----
one                       Up   Up   3ffe::10:10:3:*    RipNg RipNg 1
-----
No. of Neighbors: 1
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-C>config>router>if# show router ripng neighbor "one" detail
=====
RIP-NG Neighbors (Detail)
=====
Neighbor "one"
-----
Description      : n/a
Primary IP       : 3ffe::10:10:3:3/1*  Group       : A
Admin State      : Up           Oper State  : Up
Send Mode        : RipNg        Receive Mode : RipNg
Metric In        : 1           Metric Out   : 1
Split Horizon    : Enabled      Check Zero   : Disabled
Message Size     : 25          Preference   : 100
Timeout Timer    : 5           Update Timer : 1
BFD              : Enabled      Flush Timer  : 5
Export Policies:
```

```

    directToRipng
Import Policies:
    None
=====
* indicates that the corresponding row element may have been truncated.
    
```

```

*A:Dut-C>config>router>if# show router ripng neighbor 3ffe::10:10:12:3
=====
RIP-NG Neighbors
=====
Interface                Adm  Opr  Primary IP          Send  Recv  Metric
                        Mode Mode                Mode  Mode  In
-----
three                    Up   Up   3ffe::10:10:12*   RipNg RipNg  1
-----
No. of Neighbors: 1
    
```

```

* indicates that the corresponding row element may have been truncated.
*A:Dut-C>config>router>if# show router ripng neighbor 3ffe::10:10:12:3 detail
    
```

```

=====
RIP-NG Neighbors (Detail)
=====
Neighbor "three"
-----
Description      : n/a
Primary IP       : 3ffe::10:10:12:3/* Group      : B
Admin State      : Up                    Oper State  : Up
Send Mode        : RipNg                 Receive Mode: RipNg
Metric In        : 1                     Metric Out  : 1
Split Horizon    : Enabled                Check Zero  : Disabled
Message Size     : 25                     Preference : 100
Update Timer     : 1
Timeout Timer    : 5                       Flush Timer : 5
BFD              : Disabled
Export Policies:
    directToRipng
Import Policies:
    None
    
```

```

* indicates that the corresponding row element may have been truncated.
*A:Dut-C>config>router>if# show router ripng neighbor advertised-routes
    
```

```

=====
RIP-NG Advertised Routes
=====
Destination                Interface
Link-local-address         Metric TTL
-----
3ffe::103:800/120          one
    fe80::662d:ffff:fe00:0    1    n/a
3ffe::103:800/120          two
    fe80::662d:ffff:fe00:0    1    n/a
3ffe::103:800/120          three
    fe80::662d:ffff:fe00:0    1    n/a
3ffe::103:800/120          four
    fe80::662d:ffff:fe00:0    1    n/a
3ffe::10:10:3:0/120        one
    fe80::662d:ffff:fe00:0    1    n/a
3ffe::10:10:3:0/120        two
    fe80::662d:ffff:fe00:0    1    n/a
3ffe::10:10:3:0/120        three
    fe80::662d:ffff:fe00:0    1    n/a
3ffe::10:10:3:0/120        four
    
```

```

fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:12:0/120      one
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:12:0/120      two
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:12:0/120      three
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:12:0/120      four
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:103:0/120     one
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:103:0/120     two
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:103:0/120     three
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:103:0/120     four
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:112:0/120    one
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:112:0/120    two
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:112:0/120    three
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:10:112:0/120    four
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:20:1:2/128       one
fe80::662d:ffff:fe00:0     16     n/a
3ffe::10:20:1:2/128       two
fe80::662d:ffff:fe00:0     16     n/a
3ffe::10:20:1:2/128       three
fe80::662d:ffff:fe00:0     16     n/a
3ffe::10:20:1:2/128       four
fe80::662d:ffff:fe00:0     16     n/a
3ffe::10:20:1:3/128       one
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:20:1:3/128       two
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:20:1:3/128       three
fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:20:1:3/128       four
fe80::662d:ffff:fe00:0      1      n/a
-----
No. of Advertised Routes: 28
=====
*A:Dut-C>config>router>if# show router ripng neighbor advertised-routes "one"
=====
RIP-NG Advertised Routes
=====
Destination                               Interface
Link-local-address                        Metric TTL
-----
3ffe::103:800/120                          one
fe80::662d:ffff:fe00:0                      1      n/a
3ffe::10:10:3:0/120                          one
fe80::662d:ffff:fe00:0                      1      n/a
3ffe::10:10:12:0/120                          one
fe80::662d:ffff:fe00:0                      1      n/a
3ffe::10:10:103:0/120                         one
fe80::662d:ffff:fe00:0                      1      n/a
3ffe::10:10:112:0/120                         one
fe80::662d:ffff:fe00:0                      1      n/a
3ffe::10:20:1:2/128                           one
fe80::662d:ffff:fe00:0                      16     n/a
3ffe::10:20:1:3/128                           one

```

```

fe80::662d:ffff:fe00:0          1      n/a
-----
No. of Advertised Routes: 7
=====

*A:Dut-C>config>router>if# show router ripng neighbor advertised-routes fe80::662d:ffff:fe00:0
=====
RIP-NG Advertised Routes
=====
Destination                               Interface
Link-local-address                       Metric TTL
-----
3ffe::103:800/120                         one
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::103:800/120                         two
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::103:800/120                         three
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::103:800/120                         four
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:3:0/120                       one
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:3:0/120                       two
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:3:0/120                       three
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:3:0/120                       four
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:3:0/120                       one
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:12:0/120                      two
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:12:0/120                      three
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:12:0/120                      four
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:103:0/120                     one
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:103:0/120                     two
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:103:0/120                     three
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:103:0/120                     four
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:112:0/120                     one
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:112:0/120                     two
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:112:0/120                     three
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:10:112:0/120                     four
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:20:1:2/128                        one
fe80::662d:ffff:fe00:0                   16     n/a
3ffe::10:20:1:2/128                        two
fe80::662d:ffff:fe00:0                   16     n/a
3ffe::10:20:1:2/128                        three
fe80::662d:ffff:fe00:0                   16     n/a
3ffe::10:20:1:2/128                        four
fe80::662d:ffff:fe00:0                   16     n/a
3ffe::10:20:1:3/128                        one
fe80::662d:ffff:fe00:0                   1      n/a
3ffe::10:20:1:3/128                        two
fe80::662d:ffff:fe00:0                   1      n/a

```

```

3ffe::10:20:1:3/128          three
 fe80::662d:ffff:fe00:0      1      n/a
3ffe::10:20:1:3/128          four
 fe80::662d:ffff:fe00:0      1      n/a
-----
No. of Advertised Routes: 28
=====
    
```

## neighbor

### Syntax

**neighbor** *ip-addr* [*ip-addr*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>router>bgp neighbor)

### Full Context

monitor router bgp neighbor

### Description

This command displays statistical BGP neighbor information at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified neighbor(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *ip-addr*

Displays damping information for entries received from the BGP neighbor. Up to five IP addresses can be specified.

**Values** *a.b.c.d*

#### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

#### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

**Output**

The following output is an example of BGP neighbor information.

**Output Example**

```
A:ALA-12>monitor>router>bgp# neighbor 192.0.2.10 interval 3 repeat 3 absolute
=====
Monitor statistics for BGP Neighbor 192.0.2.10
=====
At time t = 0 sec
-----
Recd. Prefixes   : 2                Sent Prefixes   : 0
Recd. Paths      : 0                Suppressed Paths : 0
Num of Flaps     : 0
i/p Messages    : 916              o/p Messages    : 916
i/p Octets      : 17510            o/p Octets      : 17386
i/p Updates     : 2                o/p Updates     : 0
-----
At time t = 3 sec
-----
Recd. Prefixes   : 0                Sent Prefixes   : 0
Recd. Paths      : 0                Suppressed Paths : 0
Num of Flaps     : 0
i/p Messages    : 0                o/p Messages    : 0
i/p Octets      : 0                o/p Octets      : 0
i/p Updates     : 0                o/p Updates     : 0
-----
At time t = 6 sec
-----
Recd. Prefixes   : 0                Sent Prefixes   : 0
Recd. Paths      : 0                Suppressed Paths : 0
Num of Flaps     : 0
i/p Messages    : 0                o/p Messages    : 0
i/p Octets      : 0                o/p Octets      : 0
i/p Updates     : 0                o/p Updates     : 0
-----
At time t = 9 sec
-----
Recd. Prefixes   : 0                Sent Prefixes   : 0
Recd. Paths      : 0                Suppressed Paths : 0
Num of Flaps     : 0
i/p Messages    : 0                o/p Messages    : 0
i/p Octets      : 6                o/p Octets      : 0
i/p Updates     : 0                o/p Updates     : 0
=====
A:ALA-12>monitor>router>bgp#
```

## neighbor

### Syntax

**neighbor** *ip-address* [*ip-address*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>router>ospf neighbor)

### Full Context

monitor router ospf neighbor

### Description

This command displays statistical OSPF neighbor information at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified OSPF neighbors. The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *ip-address*

Specifies the IP address to display information for entries received from the specified OSPF neighbor. Up to five IP addresses can be specified.

**Values** a.b.c.d

#### *seconds*

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

#### *repeat*

Configures the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

#### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.



**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

**Output**

The following output is an example of OSPF neighbor information.

**Output Example**

```
A:ALA-12>monitor>router# ospf neighbor 10.0.0.104 interval 3 repeat 3 absolute
=====
Monitor statistics for OSPF Neighbor 10.0.0.104
=====
At time t = 0 sec (Base Statistics)
-----
Bad Nbr States      : 0                LSA Inst fails    : 0
Bad Seq Nums       : 0                Bad MTUs          : 0
Bad Packets        : 0                LSA not in LSDB  : 0
Option Mismatches : 0                Nbr Duplicates   : 0
-----
At time t = 3 sec (Mode: Absolute)
-----
Bad Nbr States      : 0                LSA Inst fails    : 0
Bad Seq Nums       : 0                Bad MTUs          : 0
Bad Packets        : 0                LSA not in LSDB  : 0
Option Mismatches : 0                Nbr Duplicates   : 0
-----
At time t = 6 sec (Mode: Absolute)
-----
Bad Nbr States      : 0                LSA Inst fails    : 0
Bad Seq Nums       : 0                Bad MTUs          : 0
Bad Packets        : 0                LSA not in LSDB  : 0
Option Mismatches : 0                Nbr Duplicates   : 0
-----
At time t = 9 sec (Mode: Absolute)
-----
Bad Nbr States      : 0                LSA Inst fails    : 0
Bad Seq Nums       : 0                Bad MTUs          : 0
Bad Packets        : 0                LSA not in LSDB  : 0
Option Mismatches : 0                Nbr Duplicates   : 0
=====
A:ALA-12>monitor>router#

A:ALA-12>monitor>router# ospf neighbor 10.0.0.104 interval 3 repeat 3 absolute
=====
Monitor statistics for OSPF Neighbor 10.0.0.104
=====
-----
At time t = 0 sec (Base Statistics)
-----
Bad Nbr States      : 0                LSA Inst fails    : 0
Bad Seq Nums       : 0                Bad MTUs          : 0
Bad Packets        : 0                LSA not in LSDB  : 0
Option Mismatches : 0                Nbr Duplicates   : 0
-----
At time t = 3 sec (Mode: Rate)
-----
Bad Nbr States      : 0                LSA Inst fails    : 0
```

```

Bad Seq Num  s      : 0          Bad MTUs       : 0
Bad Packets   : 0          LSA not in LSDB : 0
Option Mismatches: 0      Nbr Duplicates  : 0
-----
At time t = 6 sec (Mode: Rate)
-----
Bad Nbr States : 0          LSA Inst fails : 0
Bad Seq Num  s : 0          Bad MTUs       : 0
Bad Packets   : 0          LSA not in LSDB : 0
Option Mismatches: 0      Nbr Duplicates  : 0
-----
At time t = 9 sec (Mode: Rate)
-----
Bad Nbr States : 0          LSA Inst fails : 0
Bad Seq Num  s : 0          Bad MTUs       : 0
Bad Packets   : 0          LSA not in LSDB : 0
Option Mismatches: 0      Nbr Duplicates  : 0
=====
A:ALA-12>monitor>router#
    
```

## neighbor

### Syntax

**neighbor** *router-id interface-name* [**interval seconds**] [**repeat repeat**] [**absolute | rate**] **area area-id**

### Context

[\[Tree\]](#) (monitor>router>ospf3 neighbor)

### Full Context

monitor router ospf3 neighbor

### Description

This command displays statistical OSPF3 neighbor information at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified OSPF3 neighbor(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *router-id*

Specifies the IP address.

**Values** a.b.c.d

#### *interface-name*

Specifies the interface name, up to 32 characters.

### **seconds**

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

### **repeat**

Configures the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic instead of the delta.

### **area-id**

Specifies the OSPF area, up to 256 characters.

## **Platforms**

All

## **neighbor**

## **Syntax**

**neighbor** *neighbor* [*neighbor*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

## **Context**

**[Tree]** (monitor>router>rip neighbor)

**[Tree]** (monitor>router>ripng neighbor)

## **Full Context**

monitor router rip neighbor

monitor router ripng neighbor

## **Description**

This command displays statistical RIP neighbor information at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified RIP neighbor(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### ***neighbor***

Specifies the IP interface name or the IP address of the neighbor to be monitored. Up to five can be specified in a single statement.

**Values** *ip-int-name, ip-address*

### ***seconds***

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

### ***repeat***

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### ***absolute***

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### ***rate***

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## neighbor

## Syntax

**neighbor** *ieee-address*

## Context

**[Tree]** (clear>system>ptp>port neighbor)

## Full Context

clear system ptp port neighbor

## Description

This command clears PTP port neighbor information.

## Parameters

### *ieee-address*

Specifies the MAC address.

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xxx: [0 to FFFF]H

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 16.7 neighbor-table

### neighbor-table

## Syntax

**neighbor-table** [**ip6** *ipv6-address*] [**class** *class*] [**next-index** *index*]

## Context

[\[Tree\]](#) (tools>dump>wlan-gw>lanext>bd neighbor-table)

## Full Context

tools dump wlan-gw lanext bd neighbor-table

## Description

This command dumps neighbor table entries for the specified HLE BD.

## Parameters

### *ipv6-address*

Specifies the IPv6 address of the neighbor entry to be displayed.

### *class*

Specifies the source on which to filter the neighbor table entries.

**Values** access, network, remote

### *index*

Specify the **next-index** *index* parameter to display the next set of results If there are more results than the current output. The additional results are indicated at the bottom of the current output.

**Values** 0 to 4294967295

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 16.8 neighbors

### neighbors

#### Syntax

```
neighbors group [name] [ip-address]
```

#### Context

[\[Tree\]](#) (show>service>id>gsmp neighbors)

#### Full Context

```
show service id gsmp neighbors
```

#### Description

This command display GSMP neighbor information.

#### Parameters

##### group

A GSMP group defines a set of GSMP neighbors which have the same properties.

##### name

Specifies a GSMP group name is unique only within the scope of the service in which it is defined.

##### ip-address

Specifies the ip-address of the neighbor.

#### Platforms

All

#### Output

The following output is an example of service GSMP neighbor information.

##### Output Example

These commands show the configured neighbors per service, regardless that there exists an open TCP connection with this neighbor. The admin state is shown because for a neighbor to be admin enabled, the service, gsmp node, group node and the neighbor node in this service must all be in the **no shutdown** state. Session gives the number of session (open TCP connections) for each configured neighbor.

```
A:active>show>service>id>gsmp# neighbors
```

```
=====
GSMP neighbors
=====
```

```

Group                Neighbor                AdminState  Sessions
-----
dslam1              192.168.1.2           Enabled     0
dslam1              192.168.1.3           Enabled     0
-----
Number of neighbors shown: 2
=====
A:active>show>service>id>gsmp#

A:active>show>service>id>gsmp# neighbors group dslam1
=====
GSMP neighbors
=====
Group                Neighbor                AdminState  Sessions
-----
dslam1              192.168.1.2           Enabled     0
dslam1              192.168.1.3           Enabled     0
-----
Number of neighbors shown: 2
=====
A:active>show>service>id>gsmp#

A:active>show>service>id>gsmp# neighbors group dslam1 192.168.1.2
=====
GSMP neighbors
=====
Group                Neighbor                AdminState  Sessions
-----
dslam1              192.168.1.2           Enabled     0
-----
A:active>show>service>id>gsmp#
    
```

The following table describes show service-id gsmp neighbors group output fields:

*Table 340: Service-ID GSMP Neighbors Group Field Descriptions*

Label	Description
Group	The GSMP group name
Neighbor	The neighbor IP address
AdminState	The administrative state of the neighbor
Sessions	The number of sessions (open TCP connections) for each configured neighbor

## 16.9 netconf

### netconf

#### Syntax

**netconf**

**netconf connection**

**netconf counters**

**netconf schema-path**

### Context

[\[Tree\]](#) (show>system netconf)

### Full Context

show system netconf

### Description

This command displays NETCONF information.

### Parameters

#### connection

Keyword to display active NETCONF sessions.

#### counters

Keyword to display NETCONF counters.

#### schema-path

Keyword to display the operational schema-path state leaf, which indicates the current path of the SR OS schema files.

### Platforms

All

### Output

The following output is an example of NETCONF information, and [Table 341: NETCONF Output Fields](#) describes the NETCONF output fields.

#### Output Example

```
# show system netconf
=====
NETCONF Server
=====
Administrative State      : Enabled
Operational State       : Up
=====
```

Table 341: NETCONF Output Fields

Label	Description
Administrative State	Enabled — Indicates that NETCONF is enabled. Disabled — Indicates that NETCONF is disabled.
Operational State	Up — Indicates that NETCONF is operational.



Label	Description
	Down — Indicates that NETCONF has no connections present.
	Transition — Indicates that NETCONF is waiting for the <b>delay-on-boot</b> timer to expire.

The following output is an example of NETCONF connection information, and [Table 342: NETCONF Connection Output Fields](#) describes the NETCONF connection output fields.

### Output Example

```
# show system netconf connection
=====
NETCONF Server connections
=====
Connection      Username      Session Status      Running      Candidate
                Id           Id                   Locked?     Locked?
-----
135.121.197.102  admin        56    connected    no         no
-----
Number of NETCONF sessions : 1
=====
```

Table 342: NETCONF Connection Output Fields

Label	Description
Connection	The IP address of the connected routers (remote client).
Username	The name of the user.
Session ID	The NETCONF session ID.
Status	Connected or not connected.
Running Locked?	Yes — Indicates the <running> datastore is locked. No — Indicates the <running> datastore is not locked.
Candidate Locked?	Yes — Indicates the <candidate> datastore is locked. No — Indicates the <candidate> datastore is not locked.
Number of NETCONF sessions	Total NETCONF sessions

The following output is an example of NETCONF counter information, and [Table 343: NETCONF Counters Output Fields](#) describes the NETCONF counter output fields.

### Output Example

```
# show system netconf counters
=====
NETCONF counters:
=====
Rx Messages
-----
```

```

in gets          : 23
in get-configs  : 19
in edit-configs : 35
in copy-configs : 0
in delete-configs : 0
in validates    : 0
in close-sessions : 0
in kill-sessions : 0
in locks        : 0
in unlocks      : 0
in commits      : 2
in discards     : 1
-----
Rx Total        : 80
=====
Tx Messages
-----
out rpc-errors  : 4
-----
Tx Total        : 9
=====
Failed requests due to lock being taken by other sessions
-----
failed edit-configs: 1
failed locks       : 0
=====
    
```

Table 343: NETCONF Counters Output Fields

Label	Description
RX Messages	Types and numbers of received messages
RX Total	Total of all received messages
TX Messages	Types and numbers of sent messages
TX Total	Total of all sent messages
failed edit-configs	Number of failed <edit-config> requests due to a lock (including implicit ones) being taken by other netconf sessions
failed locks	Number of failed <lock> requests due to a lock (including implicit ones) being taken by other netconf sessions

The following output is an example of NETCONF schema path information, and [Table 344: NETCONF Schema Path Output Fields](#) describes the NETCONF schema path output fields.

**Output Example**

```

A:node-2# show system netconf schema-path
=====
NETCONF Schema Path
=====
Operational : cf3:\timos\yang.tim
=====
    
```

Table 344: NETCONF Schema Path Output Fields

Label	Description
Operational	Operational schema-path state leaf, indicating the current path of the SR OS schema files. This value is updated at boot time or at configuration time.

## 16.10 network

### network

#### Syntax

**network** [*policy-id*] [**detail**] [**match-criteria**]

#### Context

[\[Tree\]](#) (show>qos network)

#### Full Context

show qos network

#### Description

This command displays network policy information.

#### Parameters

##### *policy-id*

Displays information for the specific policy ID.

**Values** 1 to 65535

**Default** all network policies

##### **detail**

Includes information about ingress and egress DSCP and LSP EXP bit mappings and network policy interface associations.

##### **match-criteria**

Includes the match-criteria.

#### Platforms

All

## Output

The following output is an example of network QoS Policy information, and [Table 345: Show QoS Network Output Fields](#) describes the network QoS Policy output fields.

### Output Example

```
A:PE1# show qos network
=====
Network Policies
=====
Policy-Id  Name                Remark LerUseDscp Description
-----
1          default             False  False      Default network QoS policy.
=====
A:PE1#

A:PE1# show qos network 1
=====
QoS Network Policy
=====
-----
Network Policy (1)
-----
Policy-id      : 1                Remark           : False
Forward Class  : be                Profile          : Out
LER Use DSCP   : False          Scope            : Template
Description    : Default network QoS policy.
Name           : default
=====
A:PE1#

A:PE1# show qos network 1 detail
=====
QoS Network Policy
=====
-----
Network Policy (1)
-----
Policy-id      : 1                Remark           : False
Forward Class  : be                Profile          : Out
LER Use DSCP   : False          Scope            : Template
Description    : Default network QoS policy.
Name           : default
=====
-----
DSCP (Ingress)                Forwarding Class                Profile
-----
be                             be                               Out
ef                             ef                               In
cs1                            l2                              In
nc1                            h1                              In
nc2                            nc                              In
af11                           af                              In
af12                           af                              Out
af13                           af                              Out
af21                           l1                              In
af22                           l1                              Out
af23                           l1                              Out
af31                           l1                              In
af32                           l1                              Out
af33                           l1                              Out
af41                           h2                              In
af42                           h2                              Out
```

```

af43                                     h2                                     Out
-----
DSCP (Egress)                           Forwarding Class                       Profile
-----
No Matching Entries

-----
Prec (Egress)                             Forwarding Class                       Profile
-----
No Matching Entries

-----
LSP EXP Bit Map                          Forwarding Class                       Profile
-----
0                                         be                                     Out
1                                         l2                                     In
2                                         af                                     Out
3                                         af                                     In
4                                         h2                                     In
5                                         ef                                     In
6                                         h1                                     In
7                                         nc                                     In

-----
Dot1p Bit Map                             Forwarding Class                       Profile
-----
No Matching Entries

-----
Egress Forwarding Class Mapping
-----
FC Value      : 0                      FC Name      : be
- DSCP Mapping
Out-of-Profile : be                      In-Profile   : be

- Dot1p Mapping
Out-of-Profile : 0                      In-Profile   : 0

- LSP EXP Bit Mapping
Out-of-Profile : 0                      In-Profile   : 0

DE Mark       : None
Redirect Grp Q : None                      Redirect Grp Plcr: None

FC Value      : 1                      FC Name      : l2
- DSCP Mapping
Out-of-Profile : cs1                      In-Profile   : cs1

- Dot1p Mapping
Out-of-Profile : 1                      In-Profile   : 1

- LSP EXP Bit Mapping
Out-of-Profile : 1                      In-Profile   : 1

DE Mark       : None
Redirect Grp Q : None                      Redirect Grp Plcr: None

FC Value      : 2                      FC Name      : af
- DSCP Mapping
Out-of-Profile : af12                      In-Profile   : af11

- Dot1p Mapping
Out-of-Profile : 2                      In-Profile   : 2
    
```

```

- LSP EXP Bit Mapping
Out-of-Profile : 2 In-Profile : 3

DE Mark : None
Redirect Grp Q : None Redirect Grp Plcr: None

FC Value : 3 FC Name : l1
- DSCP Mapping
Out-of-Profile : af22 In-Profile : af21

- Dot1p Mapping
Out-of-Profile : 3 In-Profile : 3

- LSP EXP Bit Mapping
Out-of-Profile : 2 In-Profile : 3

DE Mark : None
Redirect Grp Q : None Redirect Grp Plcr: None

FC Value : 4 FC Name : h2
- DSCP Mapping
Out-of-Profile : af42 In-Profile : af41

- Dot1p Mapping
Out-of-Profile : 4 In-Profile : 4

- LSP EXP Bit Mapping
Out-of-Profile : 4 In-Profile : 4

DE Mark : None
Redirect Grp Q : None Redirect Grp Plcr: None

FC Value : 5 FC Name : ef
- DSCP Mapping
Out-of-Profile : ef In-Profile : ef

- Dot1p Mapping
Out-of-Profile : 5 In-Profile : 5

- LSP EXP Bit Mapping
Out-of-Profile : 5 In-Profile : 5

DE Mark : None
Redirect Grp Q : None Redirect Grp Plcr: None

FC Value : 6 FC Name : h1
- DSCP Mapping
Out-of-Profile : nc1 In-Profile : nc1

- Dot1p Mapping
Out-of-Profile : 6 In-Profile : 6

- LSP EXP Bit Mapping
Out-of-Profile : 6 In-Profile : 6

DE Mark : None
Redirect Grp Q : None Redirect Grp Plcr: None

FC Value : 7 FC Name : nc
- DSCP Mapping
Out-of-Profile : nc2 In-Profile : nc2

- Dot1p Mapping
    
```

```
Out-of-Profile : 7                               In-Profile : 7
- LSP EXP Bit Mapping
Out-of-Profile : 7                               In-Profile : 7

DE Mark : None
Redirect Grp Q : None                            Redirect Grp Plcr: None

-----
-----
Ingress Forwarding Class Mapping
-----
FC Value : 0                                     FC Name : be
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

FC Value : 1                                     FC Name : l2
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

FC Value : 2                                     FC Name : af
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

FC Value : 3                                     FC Name : l1
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

FC Value : 4                                     FC Name : h2
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

FC Value : 5                                     FC Name : ef
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

FC Value : 6                                     FC Name : h1
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

FC Value : 7                                     FC Name : nc
Redirect UniCast Plcr : None                    Redirect MultiCast Plcr : None
Redirect BroadCast Plcr : None                 Redirect Unknown Plcr : None

-----
-----
Match Criteria (Ingress)
-----
No Matching Entries
-----

-----
Match Criteria (Egress)
-----
No Matching Entries
-----

-----
Interface Association
-----
Interface : system
IP Addr. : n/a                               Port Id : system
```

```

Interface      : int
IP Addr.      : 20.0.0.1/24          Port Id       : 1/1/1
-----
Service Associations
-----
Service Id          Service Type          Direction
-----
No Matching Entries Found
-----
SDP Associations
-----
Service Id          Service Type          Sdp Id          Direction
-----
No Matching Entries Found
=====
*A:PE1#
    
```

Table 345: Show QoS Network Output Fields

Label	Description
Policy-Id	The ID that uniquely identifies the policy.
Remark	True — Remarking is enabled for all packets that egress this router where the network policy is applied. The remarking is based on the forwarding class to DSCP and LSP EXP bit mapping defined under the egress node of the network QoS policy.  False — Remarking is disabled.
Description	A text string that helps identify the policy context in the configuration file.
Forwarding Class/ FC Name	Specifies the default ingress forwarding class (configured using the <b>network ingress default-action</b> command) assigned to packets for which there is no other configured forwarding class classification.
Profile	Specifies the default ingress packet profile (configured using the <b>network ingress default-action</b> command) assigned to packets for which there is no other configured packet profile classification.
DSCP Mapping:	
Out-of-Profile	Displays the DSCP used for out-of-profile traffic.
In-Profile	Displays the DSCP used for in-profile traffic.
LSP EXP Bit Mapping:	
Out-of-Profile	Displays the LSP EXP value used for out-of-profile traffic.



Label	Description
In-Profile	Displays the LSP EXP value used for in-profile traffic.
Interface	Displays the interface name.
IP Addr	Displays the interface IP address.
Port-Id	Specifies the physical port identifier that associates the interface.

## 16.11 network-domains

### network-domains

#### Syntax

**network-domains** [**detail**] [*network-domain-name*]

**network-domains** *network-domain-name* **interface-association**

**network-domains** [*network-domain-name*] **mcast-association** [ **state** {**consistent** | **inconsistent**}]

**network-domains** *network-domain-name* **sdp-association**

#### Context

[\[Tree\]](#) (show>router network-domains)

#### Full Context

show router network-domains

#### Description

This command displays network-domains information.

#### Parameters

##### **detail**

Displays detailed network-domains information.

##### **network-domain-name**

Displays information for a specific network domain.

##### **interface-association**

Displays information for an interface network domain association.

##### **mcast-association**

Displays information for a multicast network domain association.

##### **state**

Displays information for the state of a network domain.

**Values** consistent, inconsistent

### sdp-association

Displays information for an SDP network domain association

### Platforms

All

### Output

The following output is an example of network domain information.

#### Output Example

```
*A:Dut-T>config>router# show router network-domains
=====
Network Domain Table
=====
Network Domain          Description
-----
net1                    Network domain 1
default                Default Network Domain
-----
Network Domains : 2
=====

*A:Dut-T>config>router#

*A:Dut-T>config>router# show router network-domains detail
=====
Network Domain Table (Router: Base)
=====
Network Domain          : net1
-----
Description              : Network domain 1
No. Of Ifs Associated    : 2
No. Of SDPs Associated   : 0
-----
Network Domain          : default
-----
Description              : Default Network Domain
No. Of Ifs Associated    : 3
No. Of SDPs Associated   : 0
=====

*A:Dut-T>config>router#

*A:Dut-T>config>router# show router network-domains "net1" interface-association
=====
Interface Network Domain Association Table
=====
Interface Name          Port          Network Domain
-----
intf1                   1/2/2        net1
intf2                   6/1/2        net1
-----
Interfaces : 2
=====

*A:Dut-T>config>router#
```

```
*A:Dut-T>config>service# show router network-domains "net1" sdp-association
=====
SDP Network Domain Association Table
=====
SDP Id          Network Domain
-----
100             net1
-----
SDPs : 1
=====
*A:Dut-T>config>service#
```

## 16.12 network-queue

### network-queue

#### Syntax

**network-queue** [*network-queue-policy-name*] [ **detail**]

#### Context

[\[Tree\]](#) (show>qos network-queue)

#### Full Context

show qos network-queue

#### Description

This command displays network queue policy information.

#### Parameters

##### ***network-queue-policy-name***

The name of the network queue policy.

**Values** Valid names consist of any string, up to 32 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

##### **detail**

Includes each queue's rates and adaptation-rule and cbs details. It also shows FC-to-queue mapping details.

#### Platforms

All

## Output

The following output is an example of network-queue information.

### Output Example

```
*A:PE# show qos network-queue
=====
Network Queue Policies
=====
Policy-Id          Description
-----
default           Default network queue QoS policy.
=====
*A:PE#
*A:PE# show qos network-queue "default"
=====
QoS Network Queue Policy
=====
Network Queue Policy (default)
-----
Policy             : default
Description        : Default network queue QoS policy.
Wrr Policy         : (Not Specified)
Pkt.Byte Offset   : 0
HS Attachment Policy: default
-----
Associations
-----
FP      : 1-1
Port-id : 1/1/2
Port-id : 1/1/3
Port-id : 1/1/4
Port-id : 1/1/5
Port-id : 1/1/6
Port-id : 1/1/7
Port-id : 1/1/8
=====
*A:PE#
*A:PE# show qos network-queue "default" detail
=====
QoS Network Queue Policy
=====
Network Queue Policy (default)
-----
Policy             : default
Description        : Default network queue QoS policy.
Wrr Policy         : (Not Specified)
Pkt.Byte Offset   : 0
HS Attachment Policy: default
-----
Queue Information
-----
Queue-Id          : 1           Queue-Type        : auto-expedite
PIR               : 100         CIR               : 0
PIR Rule          : closest     CIR Rule          : closest
FIR              : 0           FIR Rule          : closest
MBS              : 50.00       CBS               : 1.00
Avg Frame Overhead : 0.00
Parent            : No
PIR Level/Weight  : n/a        CIR Level/Weight  : n/a
```

```

Low Drop Tail      : def
Queue-Id          : 2           Queue-Type       : auto-expedite
PIR               : 100        CIR              : 25
PIR Rule         : closest    CIR Rule        : closest
FIR              : 0          FIR Rule        : closest
MBS              : 50.00      CBS             : 3.00
Avg Frame Overhead : 0.00
Parent           : No
PIR Level/Weight : n/a        CIR Level/Weight : n/a
Low Drop Tail    : def
Queue-Id        : 3           Queue-Type       : auto-expedite
PIR             : 100        CIR              : 25
PIR Rule       : closest    CIR Rule        : closest
FIR           : 0          FIR Rule        : closest
MBS           : 50.00      CBS             : 10.00
Avg Frame Overhead : 0.00
Parent         : No
PIR Level/Weight : n/a        CIR Level/Weight : n/a
Low Drop Tail  : def
Queue-Id      : 4           Queue-Type       : auto-expedite
PIR           : 100        CIR              : 25
PIR Rule     : closest    CIR Rule        : closest
FIR         : 0          FIR Rule        : closest
MBS         : 25.00      CBS             : 3.00
Avg Frame Overhead : 0.00
Parent         : No
PIR Level/Weight : n/a        CIR Level/Weight : n/a
Low Drop Tail  : def
Queue-Id      : 5           Queue-Type       : auto-expedite
PIR           : 100        CIR              : 100
PIR Rule     : closest    CIR Rule        : closest
FIR         : 0          FIR Rule        : closest
MBS         : 50.00      CBS             : 10.00
Avg Frame Overhead : 0.00
Parent         : No
PIR Level/Weight : n/a        CIR Level/Weight : n/a
Low Drop Tail  : def
Queue-Id      : 6           Queue-Type       : auto-expedite
PIR           : 100        CIR              : 100
PIR Rule     : closest    CIR Rule        : closest
FIR         : 0          FIR Rule        : closest
MBS         : 50.00      CBS             : 10.00
Avg Frame Overhead : 0.00
Parent         : No
PIR Level/Weight : n/a        CIR Level/Weight : n/a
Low Drop Tail  : def
Queue-Id      : 7           Queue-Type       : auto-expedite
PIR           : 100        CIR              : 10
PIR Rule     : closest    CIR Rule        : closest
FIR         : 0          FIR Rule        : closest
MBS         : 25.00      CBS             : 3.00
Avg Frame Overhead : 0.00
Parent         : No
PIR Level/Weight : n/a        CIR Level/Weight : n/a
Low Drop Tail  : def
Queue-Id      : 8           Queue-Type       : auto-expedite
PIR           : 100        CIR              : 10
PIR Rule     : closest    CIR Rule        : closest
FIR         : 0          FIR Rule        : closest
MBS         : 25.00      CBS             : 3.00
Avg Frame Overhead : 0.00
Parent         : No
PIR Level/Weight : n/a        CIR Level/Weight : n/a
Low Drop Tail  : def
    
```

```

Queue-Id      : 9          Queue-Type    : auto-expedite
PIR           : 100       CIR           : 0
PIR Rule      : closest  CIR Rule      : closest
FIR          : 0         FIR Rule      : closest
MBS          : 50.00     CBS          : 1.00
Avg Frame Overhead : 0.00
Parent        : No
PIR Level/Weight : n/a   CIR Level/Weight : n/a
Low Drop Tail : def
Queue-Id      : 10       Queue-Type    : auto-expedite
PIR           : 100       CIR           : 5
PIR Rule      : closest  CIR Rule      : closest
FIR          : 0         FIR Rule      : closest
MBS          : 50.00     CBS          : 1.00
Avg Frame Overhead : 0.00
Parent        : No
PIR Level/Weight : n/a   CIR Level/Weight : n/a
Low Drop Tail : def
Queue-Id      : 11       Queue-Type    : auto-expedite
PIR           : 100       CIR           : 5
PIR Rule      : closest  CIR Rule      : closest
FIR          : 0         FIR Rule      : closest
MBS          : 50.00     CBS          : 1.00
Avg Frame Overhead : 0.00
Parent        : No
PIR Level/Weight : n/a   CIR Level/Weight : n/a
Low Drop Tail : def
Queue-Id      : 12       Queue-Type    : auto-expedite
PIR           : 100       CIR           : 5
PIR Rule      : closest  CIR Rule      : closest
FIR          : 0         FIR Rule      : closest
MBS          : 25.00     CBS          : 1.00
Avg Frame Overhead : 0.00
Parent        : No
PIR Level/Weight : n/a   CIR Level/Weight : n/a
Low Drop Tail : def
Queue-Id      : 13       Queue-Type    : auto-expedite
PIR           : 100       CIR           : 100
PIR Rule      : closest  CIR Rule      : closest
FIR          : 0         FIR Rule      : closest
MBS          : 50.00     CBS          : 1.00
Avg Frame Overhead : 0.00
Parent        : No
PIR Level/Weight : n/a   CIR Level/Weight : n/a
Low Drop Tail : def
Queue-Id      : 14       Queue-Type    : auto-expedite
PIR           : 100       CIR           : 100
PIR Rule      : closest  CIR Rule      : closest
FIR          : 0         FIR Rule      : closest
MBS          : 50.00     CBS          : 1.00
Avg Frame Overhead : 0.00
Parent        : No
PIR Level/Weight : n/a   CIR Level/Weight : n/a
Low Drop Tail : def
Queue-Id      : 15       Queue-Type    : auto-expedite
PIR           : 100       CIR           : 10
PIR Rule      : closest  CIR Rule      : closest
FIR          : 0         FIR Rule      : closest
MBS          : 25.00     CBS          : 1.00
Avg Frame Overhead : 0.00
Parent        : No
PIR Level/Weight : n/a   CIR Level/Weight : n/a
Low Drop Tail : def
Queue-Id      : 16       Queue-Type    : auto-expedite
    
```

```

PIR           : 100           CIR           : 10
PIR Rule     : closest      CIR Rule     : closest
FIR         : 0             FIR Rule     : closest
MBS         : 25.00        CBS          : 1.00
Avg Frame Overhead : 0.00
Parent      : No
PIR Level/Weight : n/a      CIR Level/Weight : n/a
Low Drop Tail : def
-----
HS Queue Information
-----
Queue-Id     : 1
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 2
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 3
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 4
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 5
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 6
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 7
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 8
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False      HS MBS        : 100.00
Queue-Id     : 9
PIR          : 100
PIR Rule     : closest
HS Class Weight : 1           HS Wrr Weight : 1
    
```

```

HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
Queue-Id           : 10
PIR                 : 100
PIR Rule            : closest
HS Class Weight     : 1                 HS Wrr Weight    : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
Queue-Id           : 11
PIR                 : 100
PIR Rule            : closest
HS Class Weight     : 1                 HS Wrr Weight    : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
Queue-Id           : 12
PIR                 : 100
PIR Rule            : closest
HS Class Weight     : 1                 HS Wrr Weight    : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
Queue-Id           : 13
PIR                 : 100
PIR Rule            : closest
HS Class Weight     : 1                 HS Wrr Weight    : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
Queue-Id           : 14
PIR                 : 100
PIR Rule            : closest
HS Class Weight     : 1                 HS Wrr Weight    : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
Queue-Id           : 15
PIR                 : 100
PIR Rule            : closest
HS Class Weight     : 1                 HS Wrr Weight    : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
Queue-Id           : 16
PIR                 : 100
PIR Rule            : closest
HS Class Weight     : 1                 HS Wrr Weight    : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool   : False           HS MBS           : 100.00
    
```

-----  
 HS Wrr Group Information

```

-----
HS Wrr Group Id   : 1                 Class Weight     : 1
Percent Rate     : 100                 PIR Adaptation Rule: closest
HS Wrr Group Id   : 2                 Class Weight     : 1
Percent Rate     : 100                 PIR Adaptation Rule: closest
    
```

-----  
 FC UCastQ MCastQ

```

-----
be      1          9
l2      2          10
af      3          11
l1      4          12
h2      5          13
ef      6          14
h1      7          15
nc      8          16
    
```



```
-----  
Associations  
-----  
FP      : 1-1  
Port-id : 1/1/2  
Port-id : 1/1/3  
Port-id : 1/1/4  
Port-id : 1/1/5  
Port-id : 1/1/6  
Port-id : 1/1/7  
Port-id : 1/1/8  
=====
```

\*A:PE#

## 16.13 next-hop

### next-hop

#### Syntax

**next-hop** [*family* [**service-id** *service-id*]] [*ip-address*[**detail**]]

#### Context

[\[Tree\]](#) (show>router>bgp next-hop)

#### Full Context

show router bgp next-hop

#### Description

This command displays BGP next-hop information.

#### Parameters

##### *family*

Specifies the type of routing information to be distributed by the BGP instance.

**Values**    ipv4, mcast-ipv4, ipv6, mcast-ipv6, label-ipv4, label-ipv6, vpn-ipv4, vpn-  
              ipv6, evpn, mcast-vpn-ipv4, mcast-vpn-ipv6

##### *ip-address*

Displays the next hop information for the specified IP address.

**Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x[-interface]
	x:x:x:x:x:d.d.d.d[-interface]
	x - [0 to FFFF]H

d - [0 to 255]D

interface - 32 characters maximum,  
 mandatory for link local addresses

**detail**

Displays the longer, more detailed version of the output.

**service-id** *service-id*

Specifies the service ID.

**Values** 1 to 2147483647

**Platforms**

All

**Output**

[Table 346: BGP Next Hop Output Fields](#) describes the command output fields for a BGP next hop.

The following output is an example of BGP next-hop information.

**Output Example**

```
A:node-2>show>router>bgp# next-hop 10.20.1.2
=====
BGP Router ID:10.20.1.3      AS:2      Local AS:2
=====
BGP Next Hop
=====
Next Hop                    Pref    Owner
Resolving Prefix           FibProg Metric
Resolved Next Hop         Colored Ref. Count
Admin-tag-policy           FlexAlgo Last Mod.
-----
10.20.1.2                  10      OSPF
10.20.1.2/32              N       10
10.10.3.2                  N       0
--                          --      01h25m52s
-----
Next Hops : 1
=====
```

The following output is an example of detailed BGP next-hop information.

**Output Example**

```
A:node-2>show>router>bgp# next-hop 1.0.0.1 detail
=====
BGP Router ID:1.0.0.2      AS:1      Local AS:1
=====
BGP Next Hop
=====
Next Hop                    : 1.0.0.1
=====
```

```

Admin-tag-policy : --
Color           : --
Created        : 00h00m50s
Last-modified  : 00h00m50s
-----
Resolving Prefix : 1.0.0.1/32
Preference      : 10
Reference Count : 1
Fib Programmed  : N
Resolved Next Hop: 1.1.0.1
Egress Label    : 16777215
-----
Pending Next Hop Change
-----
Resolving Prefix : 1.0.0.1/32
Preference      : 10
Reference Count : 1
Fib Programmed  : Y
Resolved Next Hop: 1.2.0.3
Egress Label    : 16777216
-----
    
```

The following output is an example of BGP next-hop information for an EVPN service.

### Output Example

```

A:node-2>show>router>bgp# next-hop evpn service-id 202 10.20.1.3
=====
BGP Router ID:10.20.1.2      AS:200      Local AS:200
=====
BGP VPN Next Hop
=====
VPN Next Hop      Owner
Autobind          FibProg Reason
Labels (User-labels) FlexAlgo Metric
Admin-tag-policy (enforcement) Last Mod.
-----
10.20.1.3        LDP
  ldp bgp          Y
  rvpls (2)       --      10
  -- (N)          00h01m24s
-----
Next Hops : 1
=====
    
```

The following output is an example of detailed BGP next-hop information for an EVPN service.

### Output Example

```

A:node-2>show>router>bgp# next-hop evpn service-id 202 10.20.1.3 detail
=====
BGP Router ID:10.20.1.2      AS:200      Local AS:200
=====
BGP VPN Next Hop
=====
VPN Next Hop      : 10.20.1.3
Autobind          : ldp bgp
Labels            : rvpls
    
```

```

User-labels      : 2
Admin-tag-policy : --
Enforcement:    : strict-tagged strict-untagged
Color           : --
Created         : 00h01m26s
Last-modified   : 00h01m26s
-----
Resolving Prefix : 10.20.1.3/32
Preference       : 9                      Metric           : 10
Reference Count  : 102                    Owner             : LDP
Fib Programmed   : Y
Resolved Next Hop: 3.2.0.3
Egress Label     : 159997                 TunnelId          : 65563
-----
Next Hops : 1
=====
    
```

The following output is an example of detailed information for a BGP next hop that is unresolvable until a Strict-Mode BFD session to a peer with the same address comes back up after going down.

### Output Example

```

A:Dut-C>config>router>bgp# show router bgp next-hop 5.5.5.5 ipv4 detail
=====
BGP Router ID:3.3.3.3 AS:100 Local AS:100
=====
BGP Next Hop
=====
Next Hop : 5.5.5.5
Admin-tag-policy : --
Color : --
Bfd-strict-mode : Y
Created : 00h02m32s
Last-modified : 00h02m32s
-----
Unresolved
Reference Count : 1 Reason : BfdStrictDown
Fib Programmed : N
-----
Next Hop : 5.5.5.5
Admin-tag-policy : --
Color : --
Created : 00h38m09s
Last-modified : 00h38m09s
-----
Resolving Prefix : 5.5.5.5/32
Preference : 10 Metric : 10
Reference Count : 0 Owner : OSPF
Fib Programmed : N
Resolved Next Hop: 100.3.5.5
Egress Label : 16777215
-----
Next Hops : 2
=====
    
```

Table 346: BGP Next Hop Output Fields

Label	Description
BGP ID	The local BGP router ID
AS	The configured autonomous system number
Local AS	The configured local AS setting. If not configured, then the value is the same as the AS
Next Hop	The next-hop address
Resolving Prefix	The prefix of the best next hop
Owner	The routing protocol used to derive the best next hop
Preference	The BGP preference attribute for the routes
Reference Count	The number of routes using the resolving prefix
Resolved Next Hop	The IP address of the next hop
Last Modified	The time elapsed since the next hop was modified
Created (only visible in detailed output)	The time elapsed since the next hop was created
Bfd-strict-mode	Y — The next hop becomes unresolved when a Strict-Mode BFD session goes down.
Reason (if the next hop is unresolvable because the BFD session is down)	BfdStrictDown — The next hop is unresolvable until a Strict-Mode BFD session to a peer with the same address comes back up after going down.

## 16.14 node

node

### Syntax

node

### Context

[\[Tree\]](#) (show>router>bgp>routes>bgp-ls node)

### Full Context

show router bgp routes bgp-ls node

## Description

This command displays BGP-LS NLRIs for node types.

## Platforms

All

## 16.15 ntp

### ntp

## Syntax

```
ntp [{peers | peer [router router-instance | service-name service-name] peer-address} | {servers |  
server [router router-instance | service-name service-name] server-address} | [all]] [detail]
```

## Context

[\[Tree\]](#) (show>system ntp)

## Full Context

```
show system ntp
```

## Description

This command displays NTP protocol configuration and state.

## Parameters

### peers

Generates a list of known peers.

### peer-address

Specifies the address of a specific peer.

<b>Values</b>	ipv4-address: a.b.c.d ipv6-address: <ul style="list-style-type: none"><li>• x:x:x:x:x:x</li><li>• x:x:x:x:x:d.d.d.d</li><li>• x – [0 to FFFF] H</li><li>• d – [0 to 255] D</li></ul>
---------------	---

### servers

Generates a list of known servers.

### server-address

Specifies the address of a specific server.

**Values** ipv4-address: a.b.c.d  
 ipv6-address:

- x:x:x:x:x:x
- x:x:x:x:x:d.d.d.d
- x – [0 to FFFF] H
- d – [0 to 255] D

**ptp**: shows information about the internal PTP server.

**router-instance**

Specifies the routing context that contains the interface in the form of *router-name* or *service-id*.

**Values** *router-name* — Base | Management  
*service-id* — 1 to 2147483647

**Default** Base

**service name**

Specifies the service name for the VPRN. The name can be up to 64 characters in length. Note that CPM routing instances are not supported.

**all**

Generates information for all clients, servers, and peers.

**detail**

Provides detailed information.

**Platforms**

All

**Output**

The following output is an example of NTP information, and [Table 347: Show NTP Field Description](#) describes the output fields.

**Output Example**

```

show system ntp
=====
NTP Status
=====
Configured      : Yes           Stratum           : 4
Admin Status   : up             Oper Status      : up
Server Enabled  : No            Server Authenticate : No
Clock Source    : 2001:db8:3333:4444:5555:10:100:2
Auth Check     : Yes
Auth Keychain   : KeyChainName
Current Date & Time: 2015/07/10 12:46:30 UTC
=====

show system ntp all
=====
NTP Status
    
```

```

=====
Configured      : Yes           Stratum           : 4
Admin Status   : up             Oper Status       : up
Server Enabled  : No             Server Authenticate : No
Clock Source    : 2001:db8:3333:4444:5555:10:100:2
Auth Check     : Yes
Auth Keychain   : KeyChainName
Current Date & Time: 2015/07/10 12:46:32 UTC
=====
    
```

NTP Active Associations

```

=====
State           Reference ID      St Type A Poll Reach      Offset(ms)
Router          Remote
-----
invalid        192.168.193.198 2  srvr y 8      YYYYYYYY -35.396
  Base         2001:db8:3333:4444:5555:40:1:3
invalid        192.168.193.198 2  srvr y 8      YYYYYYYY -30.850
  Base         2001:db8:3333:4444:5555:40:2:3
invalid        192.168.193.198 2  srvr y 8      YYYYYYYY -35.654
  Base         2001:db8:3333:4444:5555:40:3:3
invalid        192.168.193.198 2  srvr y 8      YYYYYYYY -30.939
  Base         2001:db8:3333:4444:5555:40:4:3
invalid        192.168.193.198 2  srvr y 8      YYYYYYYY -35.206
  67890        2001:db8:3333:4444:5555:40:5:3
chosen         192.168.193.198 2  srvr y 8      YYYYYYYY -49.405
  67890        2001:db8:3333:4444:5555:70:1:4
candidate      192.168.193.198 2  srvr y 8      YYYYYYYY -49.054
  67890        2001:db8:3333:4444:5555:70:2:4
outlyer        192.168.193.198 2  srvr y 8      YYYYYYYY -48.682
  Base         2001:db8:3333:4444:5555:70:3:4
candidate      192.168.193.198 2  srvr y 8      YYYYYYYY -49.897
  Base         2001:db8:3333:4444:5555:70:4:4
candidate      192.168.193.198 2  srvr y 8      YYYYYYYY -48.991
  Base         2001:db8:3333:4444:5555:70:5:4
candidate      192.168.193.198 2  bclnt y 8      YYYYYYYY -48.991
  67890        2001:db8:3333:4444:5555:70:5:4
=====
    
```

NTP Clients

```

=====
vRouter          Time Last Request Rx
Address
-----
Base
  10.10.100.1    03/06/2013 21:32:35
  2001:db8:3333:4444:5555:10:100:1 03/06/2013 21:32:30
=====
    
```

show system ntp detail

NTP Status

```

=====
Configured      : Yes           Stratum           : 4
Admin Status   : up             Oper Status       : up
Server Enabled  : No             Server Authenticate : No
Clock Source    : 2001:db8:3333:4444:5555:10:100:2
Auth Check     : Yes
Auth Keychain   : KeyChainName
Auth Errors     : 0             Auth Errors Ignored : 0
Auth Key Id Errors : 0         Auth Key Type Errors : 0
Current Date & Time: 2015/07/10 12:46:34 UTC
=====
    
```



```
=====
NTP Configured Broadcast/Multicast Interfaces
=====
```

vRouter	Interface	Address	Type	Auth	Poll
-----	-----	-----	-----	-----	-----

```
=====
NTP Active Associations
=====
```

State	Router	Remote	Reference ID	St	Type	A	Poll	Reach	Offset(ms)
invalid	Base	2001:db8:3333:4444:5555:40:1:3	192.168.193.198	2	srvr	y	8	YYYYYYYY	-30.563
invalid	Base	2001:db8:3333:4444:5555:40:2:3	192.168.193.198	2	srvr	y	8	YYYYYYYY	-35.233
invalid	Base	2001:db8:3333:4444:5555:40:3:3	192.168.193.198	2	srvr	y	8	YYYYYYYY	-35.808
invalid	Base	2001:db8:3333:4444:5555:40:4:3	192.168.193.198	2	srvr	y	8	YYYYYYYY	-34.563
invalid	Base	2001:db8:3333:4444:5555:40:5:3	192.168.193.198	2	srvr	y	8	YYYYYYYY	-35.507
candidate	Base	2001:db8:3333:4444:5555:70:1:4	192.168.193.198	2	srvr	y	8	YYYYYYYY	-49.990
candidate	Base	2001:db8:3333:4444:5555:70:2:4	192.168.193.198	2	srvr	y	8	YYYYYYYY	-49.926
chosen	Base	2001:db8:3333:4444:5555:70:3:4	192.168.193.198	2	srvr	y	8	YYYYYYYY	-49.803
candidate	Base	2001:db8:3333:4444:5555:70:4:4	192.168.193.198	2	srvr	y	8	YYYYYYYY	-49.897
outlyer	Base	2001:db8:3333:4444:5555:70:5:4	192.168.193.198	2	srvr	y	8	YYYYYYYY	-50.180

```
=====
NTP Clients
=====
```

vRouter	Address	Time Last Request	Rx
Base	10.10.100.1	03/06/2013 21:33:31	
	2001:db8:3333:4444:5555:10:100:1	03/06/2013 21:33:32	

```
show system ntp all detail
```

```
=====
NTP Status
=====
```

```
Configured      : Yes          Stratum          : 4
Admin Status    : up            Oper Status      : up
Server Enabled  : No           Server Authenticate : No
Clock Source    : 2001:db8:3333:4444:5555:10:100:2
Auth Check      : Yes
Auth Keychain   : KeyChainName
Auth Errors     : 0             Auth Errors Ignored : 0
Auth Key Id Errors : 0         Auth Key Type Errors : 0
Current Date & Time: 2015/07/10 12:46:36 UTC
```

```
=====
NTP Configured Broadcast/Multicast Interfaces
=====
```

vRouter	Interface	Address	Type	Auth	Poll
-----	-----	-----	-----	-----	-----

```

-----
vprn16      ies-16-10.60.1.3      bcast  yes  8
vprn16      ies-16-10.60.2.3      bcast  yes  8
vprn16      ies-16-10.60.3.3      bcast  yes  8
vprn16      ies-16-10.60.4.3      bcast  yes  8
vprn16      ies-16-10.60.5.3      bcast  yes  8
vprn16      ies-16-10.60.6.3      bcast  yes  8
vprn16      ies-16-10.60.7.3      bcast  yes  8
vprn16      ies-16-10.60.8.3      bcast  yes  8
vprn16      ies-16-10.60.9.3      bcast  yes  8
vprn16      ies-16-10.60.10.3     bcast  yes  8
vprn17      ies-10.40.17.3        bcast  no   8
vprn18      ies-10.40.18.3        bcast  no   8
vprn19      ies-10.40.19.3        bcast  no   8
vprn20      ies-10.40.20.3        bcast  no   8
.....
vprn996     ies-10.43.228.3       bcast  no   8
vprn997     ies-10.43.229.3       bcast  no   8
vprn998     ies-10.43.230.3       bcast  no   8
vprn999     ies-10.43.231.3       bcast  no   8
vprn1000    ies-10.43.232.3       bcast  no   8
management management      192.0.2.1      mcast  yes  8
Base        ip-10.60.1.5          Host-ones     bclnt  yes  n/a
Base        ip-10.60.2.5          Host-ones     bclnt  yes  n/a
Base        ip-10.60.3.5          Host-ones     bclnt  yes  n/a
Base        ip-10.60.4.5          Host-ones     bclnt  yes  n/a
67890      ip-10.60.5.5          Host-ones     bclnt  yes  n/a
67890      ip-10.60.6.5          Host-ones     bclnt  yes  n/a
67890      ip-10.60.7.5          Host-ones     bclnt  yes  n/a
67890      ip-10.60.8.5          Host-ones     bclnt  yes  n/a
67890      ip-10.60.9.5          Host-ones     bclnt  yes  n/a
67890      ip-10.60.10.5         Host-ones     bclnt  yes  n/a
=====
NTP Active Associations
=====
State      Reference ID  St Type  A  Poll Reach  Offset(ms)
  Remote
-----
invalid    192.168.193.198 2  srvr  y  8  YYYYYYYY -30.563
  Base     2001:db8:3333:4444:5555:40:1:3
invalid    192.168.193.198 2  srvr  y  8  YYYYYYYY -35.233
  Base     2001:db8:3333:4444:5555:40:2:3
invalid    192.168.193.198 2  srvr  y  8  YYYYYYYY -35.808
  Base     2001:db8:3333:4444:5555:40:3:3
invalid    192.168.193.198 2  srvr  y  8  YYYYYYYY -34.563
  Base     2001:db8:3333:4444:5555:40:4:3
invalid    192.168.193.198 2  srvr  y  8  YYYYYYYY -35.507
  Base     2001:db8:3333:4444:5555:40:5:3
candidate  192.168.193.198 2  srvr  y  8  YYYYYYYY -49.990
  Base     2001:db8:3333:4444:5555:70:1:4
candidate  192.168.193.198 2  srvr  y  8  YYYYYYYY -49.926
  Base     2001:db8:3333:4444:5555:70:2:4
chosen     192.168.193.198 2  srvr  y  8  YYYYYYYY -49.803
  Base     2001:db8:3333:4444:5555:70:3:4
candidate  192.168.193.198 2  srvr  y  8  YYYYYYYY -49.897
  Base     2001:db8:3333:4444:5555:70:4:4
outlyer    192.168.193.198 2  srvr  y  8  YYYYYYYY -50.180
  Base     2001:db8:3333:4444:5555:70:5:4
=====
NTP Clients
=====
vRouter                                          Time Last Request Rx
    
```

```

Address
-----
Base
  10.10.100.1                03/06/2013 21:33:31
  2001:db8:3333:4444:5555:10:100:1  03/06/2013 21:33:32
=====

show system ntp peers
=====
NTP Active Associations
=====
State      Reference ID  St Type  A  Poll Reach  Offset(ms)
Router      Remote
-----
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY -20.918
Base      2001:db8:3333:4444:5555:50:1:4
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY. -19.940
Base      2001:db8:3333:4444:5555:50:2:4
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY -19.970
Base      2001:db8:3333:4444:5555:50:3:4
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY -20.505
Base      2001:db8:3333:4444:5555:50:4:4
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY. -21.143
Base      2001:db8:3333:4444:5555:50:5:4
candidate  192.168.193.198 2 paspr y 8  YYYYYYYY. -19.598
Base      2001:db8:3333:4444:5555:50:8:4
candidate  192.168.193.198 2 paspr y 8  YYYYYYYY. -19.038
Base      2001:db8:3333:4444:5555:50:7:4
candidate  192.168.193.198 2 paspr y 8  YYYYYYYY. -20.427
Base      2001:db8:3333:4444:5555:50:9:4
candidate  192.168.193.198 2 paspr y 8  YYYYYYYY -20.709
Base      2001:db8:3333:4444:5555:50:10:4
candidate  192.168.193.198 2 paspr y 8  YYYYYYYY. -19.729
Base      2001:db8:3333:4444:5555:50:6:4
=====

NTP Clients
=====
vRouter      Time Last Request Rx
Address
-----
vprn1
  2001:db8:3333:4444:5555:40:1:2  03/06/2013 21:35:22
vprn2
  2001:db8:3333:4444:5555:40:2:2  03/06/2013 21:35:27
vprn3
  2001:db8:3333:4444:5555:40:3:2  03/06/2013 21:35:30
vprn4
  2001:db8:3333:4444:5555:40:4:2  03/06/2013 21:35:24
=====

show system ntp peers detail
=====
NTP Active Associations
=====
State      Reference ID  St Type  A  Poll Reach  Offset(ms)
Router      Remote
-----
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY -20.918
Base      2001:db8:3333:4444:5555:50:1:4
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY. -19.940
Base      2001:db8:3333:4444:5555:50:2:4
candidate  192.168.193.198 2 actpr y 8  YYYYYYYY -19.970
Base      2001:db8:3333:4444:5555:50:3:4
    
```

```

candidate          192.168.193.198 2 actpr y 8  YYYYYYYY -20.505
  Base            2001:db8:3333:4444:5555:50:4:4
candidate          192.168.193.198 2 actpr y 8  YYYYYYYY. -21.143
  Base            2001:db8:3333:4444:5555:50:5:4
candidate          192.168.193.198 2 paspr y 8  YYYYYYYY. -19.598
  Base            2001:db8:3333:4444:5555:50:8:4
candidate          192.168.193.198 2 paspr y 8  YYYYYYYY. -19.038
  Base            2001:db8:3333:4444:5555:50:7:4
candidate          192.168.193.198 2 paspr y 8  YYYYYYYY. -20.427
  Base            2001:db8:3333:4444:5555:50:9:4
candidate          192.168.193.198 2 paspr y 8  YYYYYYYY. -20.709
  Base            2001:db8:3333:4444:5555:50:10:4
candidate          192.168.193.198 2 paspr y 8  YYYYYYYY. -19.729
  Base            2001:db8:3333:4444:5555:50:6:4
=====
NTP Clients
=====
vRouter           Time Last Request Rx
  Address
-----
vprn1
  2001:db8:3333:4444:5555:40:1:2      03/06/2013 21:35:22
vprn2
  2001:db8:3333:4444:5555:40:2:2      03/06/2013 21:35:27
vprn3
  2001:db8:3333:4444:5555:40:3:2      03/06/2013 21:35:30
vprn4
  2001:db8:3333:4444:5555:40:4:2      03/06/2013 21:35:24
=====

show system ntp peer router Base 2001:db8:3333:4444:5555:50:1:4
=====
NTP Peer
=====
State           Reference ID   St Type  A  Poll Reach   Offset(ms)
  Router       Remote
-----
candidate          192.168.193.198 2 actpr y 8  YYYYYYYY -24.164
  Base            2001:db8:3333:4444:5555:50:1:4
=====

show system ntp peer router Base 2001:db8:3333:4444:5555:50:1:4 detail
=====
NTP Peer
=====
State           Reference ID   St Type  A  Poll Reach   Offset(ms)
  Router       Remote
-----
candidate          192.168.193.198 2 actpr y 8  YYYYYYYY -24.164
  Base            2001:db8:3333:4444:5555:50:1:4
=====

show system ntp servers
=====
NTP Active Associations
=====
State           Reference ID   St Type  A  Poll Reach   Offset(ms)
  Router       Remote
-----
invalid          192.168.193.198 2 srvr  y 8  YYYYYYYY -25.124
  Base            2001:db8:3333:4444:5555:40:1:3
invalid          192.168.193.198 2 srvr  y 8  YYYYYYYY -19.409
  vprn20          2001:db8:3333:4444:5555:40:2:3
    
```

```

invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -26.174
  vprn20         2001:db8:3333:4444:5555:40:3:3
invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -25.193
  vprn20         2001:db8:3333:4444:5555:40:4:3
invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -19.499
  vprn20         2001:db8:3333:4444:5555:40:5:3
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -49.050
  vprn20         2001:db8:3333:4444:5555:70:1:4
chosen           192.168.193.198 2  srvr y 8  YYYYYYYY -48.754
  vprn20         2001:db8:3333:4444:5555:70:2:4
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -48.891
  vprn20         2001:db8:3333:4444:5555:70:3:4
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -48.562
  vprn20         2001:db8:3333:4444:5555:70:4:4
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -48.687
  vprn20         2001:db8:3333:4444:5555:70:5:4
=====
NTP Clients
=====
vRouter          Time Last Request Rx
  Address
-----
Base
  10.10.100.1          03/06/2013 21:39:27
  2001:db8:3333:4444:5555:10:100:1 03/06/2013 21:39:21
=====

show system ntp servers detail
=====
NTP Active Associations
=====
State           Reference ID      St Type A Poll Reach  Offset(ms)
  Router         Remote
-----
invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -25.124
  Base          2001:db8:3333:4444:5555:40:1:3
invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -19.409
  vprn20        2001:db8:3333:4444:5555:40:2:3
invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -26.174
  vprn20        2001:db8:3333:4444:5555:40:3:3
invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -25.193
  vprn20        2001:db8:3333:4444:5555:40:4:3
invalid          192.168.193.198 2  srvr y 8  YYYYYYYY -19.499
  vprn20        2001:db8:3333:4444:5555:40:5:3
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -49.050
  vprn20        2001:db8:3333:4444:5555:70:1:4
chosen           192.168.193.198 2  srvr y 8  YYYYYYYY -48.754
  vprn20        2001:db8:3333:4444:5555:70:2:4
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -48.891
  vprn20        2001:db8:3333:4444:5555:70:3:4
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -48.562
  vprn20        2001:db8:3333:4444:5555:70:4:4
candidate        192.168.193.198 2  srvr y 8  YYYYYYYY -48.687
  vprn20        2001:db8:3333:4444:5555:70:5:4
=====
NTP Clients
=====
vRouter          Time Last Request Rx
  Address
-----
Base
  10.10.100.1          03/06/2013 21:39:27
    
```

```

2001:db8:3333:4444:5555:10:100:1                                03/06/2013 21:39:21
=====
show system ntp server service-name vprn20 2001:db8:3333:4444:5555:40:1:3
=====
NTP Server
=====
State          Reference ID      St Type  A  Poll Reach  Offset(ms)
  Router          Remote
-----
invalid        192.168.193.198 2  srvr y  8    YYYYYYYY  -19.679
  vprn20        2001:db8:3333:4444:5555:40:1:3
=====
*
show system ntp server servicename vprn20 2001:db8:3333:4444:5555:40:1:3 detail
=====
NTP Server
=====
State          Reference ID      St Type  A  Poll Reach  Offset(ms)
  Router          Remote
-----
invalid        192.168.193.198 2  srvr y  8    YYYYYYYY  -19.679
  vprn20        2001:db8:3333:4444:5555:40:1:3
=====

show system ntp peer router 20 2001:db8:3333:4444:5555:50:1:4
=====
NTP Peer
=====
State          Reference ID      St Type  A  Poll Reach  Offset(ms)
  Router          Remote
-----
candidate      192.168.193.198 2  actpr y  8    YYYYYYYY  -24.164
  vprn20        2001:db8:3333:4444:5555:50:1:4
=====

show system ntp peer router 20 2001:db8:3333:4444:5555:50:1:4 detail
=====
NTP Peer
=====
State          Reference ID      St Type  A  Poll Reach  Offset(ms)
  Router          Remote
-----
candidate      192.168.193.198 2  actpr y  8    YYYYYYYY  -24.164
  vprn20        2001:db8:3333:4444:5555:50:1:4
=====

show system ntp server router 20 2001:db8:3333:4444:5555:40:1:3
=====
NTP Server
=====
State          Reference ID      St Type  A  Poll Reach  Offset(ms)
  Router          Remote
-----
invalid        192.168.193.198 2  srvr y  8    YYYYYYYY  -19.679
  vprn20        2001:db8:3333:4444:5555:40:1:3
=====

show system ntp server router 20 2001:db8:3333:4444:5555:40:1:3 detail
=====
NTP Server
=====
State          Reference ID      St Type  A  Poll Reach  Offset(ms)

```

```

Router      Remote
-----
invalid          192.168.193.198 2  srvr  y  8  YYYYYYYY  -19.679
vprn20          2001:db8:3333:4444:5555:40:1:3
=====
    
```

Table 347: Show NTP Field Description

Label	Description
Configured	Yes — NTP is configured No — NTP is not configured
Admin Status	up — Administrative state is enabled down — Administrative state is disabled
Server Enabled	Yes — This node is configured to serve external clients No — This node is not configured to server external clients
Stratum	Displays stratum level of this node
Oper Status	up — The operational state is enabled down — The operational state is disabled
Auth Check	Displays the authentication requirement
Auth KeyChain	Displays the authentication keychain name
Server Authenticate	Yes — Authentication is mandatory on received requests No — Authentication is not mandatory on received requests
Clock Source	Address of the chosen server
Auth Errors	Displays the number of authentication errors
Auth Errors Ignored	Displays the number of authentication errors ignored
Auth key Id Errors	Displays the number of key identification errors
Auth Key Type Errors	Displays the number of authentication key type errors
Current Date & Time	Current date and time as determined by the NTP process in the node
vRouter	The router instance containing the interface
Router	The router instance containing the address
Interface	The interface configured in NTP
Address	The address used for transmitted messages

Label	Description
Type	bcast — broadcast interface mcast — multicast interface bcInt — broadcast client svr — server actpr — active peer paspr — passive peer
Auth	yes — Authentication in use no — Authentication not in use
Poll	# — Current poll interval used on the interface
State	Reject — The peer is rejected and will not be used for synchronization. Rejection reasons could be the peer is unreachable, the peer is synchronized to this local server so synchronizing with it would create a sync loop, or the synchronization distance is too large. This is the normal startup state. Invalid — The peer is not maintaining an accurate clock. This peer will not be used for synchronization. Excess — The peer's synchronization distance is greater than ten other peers. This peer will not be used for synchronization. Outlier — The peer is discarded as an outlier. This peer will not be used for synchronization. Candidate — The peer is accepted as a possible source of synchronization. Selected — The peer is an acceptable source of synchronization, but its synchronization distance is greater than six other peers. Chosen — The peer is chosen as the source of synchronization. ChosenPPS — The peer is chosen as the source of synchronization, but the actual synchronization is occurring from a pulse-per-second (PPS) signal.
Remote	The IP address of the remote NTP server or peer with which this local host is exchanging NTP packets
Reference ID	When stratum is between 0 and 15 this field shows the IP address of the remote NTP server or peer with which the remote is exchanging NTP packets. For reference clocks, this field shows the identification assigned to the clock, such as, ".GPS." For an NTP server or peer, if the client has not yet synchronized to a server/peer, the status cannot be determined and displays the following codes: Peer Codes:



Label	Description
	<p>ACST — The association belongs to any cast server.</p> <p>AUTH — Server authentication failed. Wait while the association is restarted.</p> <p>AUTO — Autokey sequence failed. Wait while the association is restarted.</p> <p>BCST — The association belongs to a broadcast server.</p> <p>CRPT— Cryptographic authentication or identification failed. The details should be in the system log file or the cryptostats statistics file, if configured. No further messages will be sent to the server.</p> <p>DENY — Access denied by remote server. No further messages will be sent to the server.</p> <p>DROP — Lost peer in symmetric mode. Wait while the association is restarted.</p> <p>RSTR — Access denied due to local policy. No further messages are sent to the server.</p> <p>INIT — The association has not yet synchronized for the first time.</p> <p>MCST — The association belongs to a manycast server.</p> <p>NKEY — No key found. Either the key was never installed or is not trusted.</p> <p>RATE — Rate exceeded. The server has temporarily denied access because the client exceeded the rate threshold.</p> <p>RMOT — The association from a remote host running the ntpdc utility has had unauthorized attempted access.</p> <p>STEP — A step change in system time has occurred, but the association has not yet resynchronized.</p> <p>System Codes:</p> <p>INIT — The system clock has not yet synchronized for the first time.</p> <p>STEP — A step change in system time has occurred, but the system clock has not yet resynchronized.</p>
St	Stratum level of this node
A	<p>y — Authentication is enabled</p> <p>n — Authentication is disabled</p>
Poll	Polling interval
Reach	<p>Shows the reachability for the most recent polls (up to 8)</p> <p>Y — The NTP peer or server did respond in the indicated poll</p> <p>No — The NTP peer or server did not respond in the indicated poll</p>

Label	Description
Offset	The time between the local and remote UTC time, in milliseconds
Time Last Request Rx	The time at which the last request was received from the client

## 16.16 number-of-tunnels

### number-of-tunnels

#### Syntax

**number-of-tunnels** **tunnel-type** *tunnel-type* **isa** *mda*  
**number-of-tunnels** **tunnel-type** *tunnel-type* **esa-vm** *esa-id/vm-id*  
**number-of-tunnels** **tunnel-type** *tunnel-type* **system**  
**number-of-tunnels** **tunnel-type** *tunnel-type* **tunnel-group** *tunnel-group-id*

#### Context

[\[Tree\]](#) (show>isa>stats>ip-tunnel-stats number-of-tunnels)

#### Full Context

show isa statistics ip-tunnel-stats number-of-tunnels

#### Description

This command displays the number of tunnels that are operationally up for the specified tunnel and scope. The following scope types are supported:

- per ISA
- per tunnel group
- per system

Note that L2TPv2 does not have a per-ISA scope.

The system collects statistics every hour for the past 24 hours per wall clock. A current value is also included in the output.

#### Parameters

##### **tunnel-type**

Displays information about the tunnel type.

**Values** gre, ip-in-ip, l2tpv3

##### **mda**

Displays information about the ISA ID.

**Values** slot/mda

**system**

Displays information about the system.

**tunnel-group-id**

Displays information about the tunnel group ID.

**Values** 1 to 16

**esa-vm**

Displays the ID of the configured ESA and ESA VM.

<b>Values</b>	esa-vm:	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**number-of-tunnels**

**Syntax**

**number-of-tunnels gateway name** [history-stats-in-count *count*] [history-stats-in-min *minutes*] [current]

**number-of-tunnels** [history-stats-in-count *count*] [history-stats-in-min *minutes*] [current] **esa-vm** *esa-id/vm-id*

**number-of-tunnels tunnel-type tunnel-type** [ history-stats-in-count *count*] [history-stats-in-min *minutes*] [current] [show-oid] **esa-vm** *esa-id/vm-id*

**number-of-tunnels tunnel-type tunnel-type gateway name** [history-stats-in-count *count*] [history-stats-in-min *minutes*] [current] [show-oid]

**number-of-tunnels isa mda** [history-stats-in-count *count*] [history-stats-in-min *minutes*] [current]

**number-of-tunnels tunnel-type tunnel-type isa mda** [history-stats-in-count *count*] [history-stats-in-min *minutes*] [current] [show-oid]

**number-of-tunnels system** [history-stats-in-count *count*] [history-stats-in-min *minutes*] [current]

**number-of-tunnels tunnel-type tunnel-type system** [ history-stats-in-count *count*] [history-stats-in-min *minutes*] [current] [show-oid]

**number-of-tunnels tunnel-group tunnel-group-id** [ history-stats-in-count *count*] [history-stats-in-min *minutes*] [current]

**number-of-tunnels tunnel-type tunnel-type tunnel-group tunnel-group-id** [history-stats-in-count *count*] [history-stats-in-min *minutes*] [current] [show-oid]

## Context

[\[Tree\]](#) (show>isa>stats>ipsec-stats number-of-tunnels)

## Full Context

```
show isa statistics ipsec-stats number-of-tunnels
```

## Description

This command displays information for the number of IPsec tunnel statistics of the specified tunnel type and scope. The system collects statistics every hour for the last 24 hour according to the wall clock. The current value is also included in the output.

This command supports following scopes:

- per system
- per ISA
- per tunnel group
- per IPsec GW

The **start time** value in the output indicates the time when the results are collected.

## Parameters

### *tunnel-type*

Displays information about the specified the tunnel type.

**Values** all, sl2l, dl2l, ra

### *mda*

Displays information about the specified ISA ID.

**Values** slot/mda

### *tunnel-group-id*

Displays information about the specified tunnel group ID.

**Values** 1 to 16

### *name*

Displays information about the specified IPsec GW name up to 32 characters in length.

### *count*

Displays information for the number of statistics intervals to be displayed (starting with the most recent).

**Values** 1 to 96

### *minutes*

Displays information about the specified period covered by the statistics to be displayed (starting with the most recent).

**Values** 1 to 1440

**current**

Displays information about the current value. The values of count and minutes are ignored by the system once this parameter is specified.

**show-oid**

Displays information about the Object Identifier (OID) of the current statistical value.

**esa-vm**

Displays the ID of the configured ESA and ESA VM.

Values	esa-vm:	esa-id/vm-id
		<i>esa-id</i> 1 to 16
		<i>vm-id</i> 1 to 4

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of the **show isa statistics ipsec-stats number** of tunnels command.

**Output Example**

```
show>isa>stats>ipsec-stats# number-of-tunnels tunnel-group 1
=====
STATISTICS FOR ISA TUNNEL GROUP 1
=====
INDEX          VALUE          START TIME          SAMPLING DURATION
-----
NUMBER OF TOTAL IPSEC TUNNELS
1 (CURRENT)    1              2017/05/23 00:30:13 N/A
2              1              2017/05/23 00:00:00 N/A
3              1              2017/05/22 23:00:00 N/A
4              0              2017/05/22 22:00:00 N/A
5              0              2017/05/22 21:00:00 N/A
6              0              2017/05/22 20:00:00 N/A
7              0              2017/05/22 19:00:00 N/A
8              1              2017/05/22 18:00:00 N/A
NUMBER OF IPSEC STATIC LAN-TO-LAN (SL2L) TUNNELS
1 (CURRENT)    0              2017/05/23 00:30:13 N/A
2              0              2017/05/23 00:00:00 N/A
3              0              2017/05/22 23:00:00 N/A
4              0              2017/05/22 22:00:00 N/A
5              0              2017/05/22 21:00:00 N/A
6              0              2017/05/22 20:00:00 N/A
7              0              2017/05/22 19:00:00 N/A
8              0              2017/05/22 18:00:00 N/A
NUMBER OF IPSEC DYNAMIC LAN-TO-LAN (DL2L) TUNNELS
1 (CURRENT)    0              2017/05/23 00:30:13 N/A
2              0              2017/05/23 00:00:00 N/A
3              0              2017/05/22 23:00:00 N/A
4              0              2017/05/22 22:00:00 N/A
5              0              2017/05/22 21:00:00 N/A
6              0              2017/05/22 20:00:00 N/A
7              0              2017/05/22 19:00:00 N/A
8              0              2017/05/22 18:00:00 N/A
```

```
NUMBER OF IPSEC REMOTE ACCESS (RA) TUNNELS
1 (CURRENT) 1 2017/05/23 00:30:13 N/A
2 1 2017/05/23 00:00:00 N/A
3 1 2017/05/22 23:00:00 N/A
4 0 2017/05/22 22:00:00 N/A
5 0 2017/05/22 21:00:00 N/A
6 0 2017/05/22 20:00:00 N/A
7 0 2017/05/22 19:00:00 N/A
8 1 2017/05/22 18:00:00 N/A
-----
NO. OF ENTRIES: 32
=====
SHOW>ISA>STATS>IPSEC-STATS# NUMBER-OF-TUNNELS TUNNEL-GROUP 1 SHOW-OID TUNNEL-TYPE ALL
-----
CURRENT STATISTIC INFO
-----
OID: TMNXIPSECTNLGRPHISTSTATSVALUE10.1.1.2
-----
STATISTICS FOR ISA TUNNEL GROUP 1
=====
INDEX VALUE START TIME SAMPLING DURATION
-----
NUMBER OF TOTAL IPSEC TUNNELS
1 (CURRENT) 1 2017/05/23 00:32:04 N/A
2 1 2017/05/23 00:00:00 N/A
3 1 2017/05/22 23:00:00 N/A
4 0 2017/05/22 22:00:00 N/A
5 0 2017/05/22 21:00:00 N/A
6 0 2017/05/22 20:00:00 N/A
7 0 2017/05/22 19:00:00 N/A
8 1 2017/05/22 18:00:00 N/A
-----
NO. OF ENTRIES: 8
=====
```

# 17 o Commands

## 17.1 oam-config-summary

### oam-config-summary

#### Syntax

**oam-config-summary**

#### Context

[\[Tree\]](#) (show>test-oam oam-config-summary)

#### Full Context

show test-oam oam-config-summary

#### Description

This command displays the OAM configuration resources in use, as well as the percentage of available and per-system limits for the platform. The lines produced by the **show** command output vary by platform and may account for resource allocation in different ways. The resource accounting is tied to different resource pools across different platforms.

#### Platforms

All

#### Output

The following output is an example of OAM configuration information and [Table 348: Test OAM configuration limit fields](#) describes the output fields.

This example is for platforms that have separate resource pools for OAM-PM (tests and packet per second). OAM-PM resources are tracked separately from the background OAM and SAA tests and transmit capacity. The limits are platform-specific.

```
show test-oam oam-config-summary
```

#### Output Example

```
-----  
OAM-Managed Test Capacity (tests)  
-----  
Resource                                     InUse %InUse  Limit  
-----  
Background ICMP Bridged Residential Gateway tests      0    0.0  50000  
Background ICMP Interface Control tests                 0    0.0   4000
```

```

Background OAM and SAA tests                0    0.0  10000
Background Static Host CPE Check tests      0    0.0   5000
Background Static Route CPE Check tests     0    0.0  10000
LSP Self Ping tests                         0    0.0   1250
OAM-PM tests                               0    0.0  24000
-----
OAM-Managed Transmit Capacity (pps)
-----
Resource                                     InUse %InUse  Limit
-----
Shared Resource Pool Maximum                0    0.0  24000
  Background Shared Pool Maximum            0    0.0  10000
    Background OAM and SAA-continuous Tx capacity 0    0.0   6000
    Background Static Route CPE Check Tx capacity 0    0.0  10000
  OAM-PM Tx capacity                       0    0.0  18000
Dedicated Resources
  LSP Self Ping Tx capacity                 0    0.0   125
-----
    
```

The following output is an example of those platforms that have a common resource pool (tests and packet per second) for background OAM, OAM-PM and SAA and [Table 348: Test OAM configuration limit fields](#) describes the output fields.

```
show test-oam oam-config-summary
```

**Output Example**

```

-----
OAM-Managed Test Capacity (tests)
-----
Resource                                     InUse %InUse  Limit
-----
Background OAM, OAM-PM, and SAA tests        0    0.0
Background ICMP Interface Control tests      0    0.0
LSP Self Ping tests                          0    0.0
-----
OAM-Managed Transmit Capacity (pps)
-----
Resource                                     InUse %InUse  Limit
-----
Background OAM, OAM-PM, and SAA-continuous Tx capacity 0    0.2
LSP Self Ping Tx capacity                   0    0.0
-----
    
```

The following output is an example of CPE check information and [Table 348: Test OAM configuration limit fields](#) describes the output fields.

```
show test-oam oam-config-summary
```

**Output Example**

```

-----
OAM-Managed Test Capacity (tests)
-----
Resource                                     InUse %InUse  Limit
-----
Background ICMP Bridged Residential Gateway tests 0    0.0  50000
Background ICMP Interface Control tests          0    0.0   4000
Background OAM and SAA tests                   0    0.0  10000
    
```



```

Background Static Host CPE Check tests           0   0.0  5000
Background Static Route CPE Check tests         0   0.0 10000
LSP Self Ping tests                             0   0.0  1250
OAM-PM tests                                   0   0.0 24000
-----
OAM-Managed Transmit Capacity (pps)
-----
Resource                                         InUse %InUse  Limit
-----
Shared Resource Pool Maximum                   0   0.0 24000
  Background Shared Pool Maximum                0   0.0 10000
    Background OAM and SAA-continuous Tx capacity 0   0.0  6000
    Background Static Route CPE Check Tx capacity 0   0.0 10000
  OAM-PM Tx capacity                           0   0.0 18000
Dedicated Resources
  LSP Self Ping Tx capacity                     0   0.0   125
-----
    
```

The following table describes the test OAM configuration limit fields.

Table 348: Test OAM configuration limit fields

Label	Description
InUse	Indicates the number of resources in use
%InUse	Indicates the percentage of resources in use
Limit	Indicates the total number of available resources

## 17.2 oam-perf

### oam-perf

#### Syntax

**oam-perf** [detail]

#### Context

[\[Tree\]](#) (show>test-oam oam-perf)

#### Full Context

show test-oam oam-perf

#### Description

This command displays OAM performance information, including packet per second rates and the cumulative packets receive and transmitted. Statistics are cleared using the **clear>test-oam>oam-perf** command to properly interpret current data rate. The counts are displayed since the last clear and may be skewed because of irrelevant historical data.

## Parameters

### detail

Displays detailed information.

## Platforms

All

## Output

The following output is an example of OAM performance information.

### Output Example

```

show test-oam oam-perf
Current Time      : 12/20/2018 20:22:49
Last Clear       : 12/20/2018 20:21:08
Period Duration  : 0d 00:01:41 (101.43 seconds)
Local Tests (Tx) :      251 packets,      2.47 packets/second
Remote Tests (Rx) :         0 packets,      0.00 packets/second
show test-oam oam-perf detail
Current Time      : 12/20/2018 20:22:53
Last Clear       : 12/20/2018 20:21:08
Period Duration  : 0d 00:01:45 (105.29 seconds)
=====
OAM packets Tx by locally initiated tests and Rx from remotely initiated tests
=====

```

OAM Type	--- Local Tests ----		-- Remote Tests ----	
	TxPackets	Rate(pps)	RxPackets	Rate(pps)
Eth-CFM	0	0.00	0	0.00
ICMP	0	0.00	0	0.00
LSP	0	0.00	0	0.00
MAC CPE MFIB	0	0.00	0	0.00
MPLS DM	156	1.48	0	0.00
Multicast	0	0.00	0	0.00
SDP SVC	0	0.00	0	0.00
Twamp-Light	105	1.00	0	0.00
VCCV	0	0.00	0	0.00
VPRN	0	0.00	0	0.00
VXLAN	0	0.00	0	0.00
other	0	0.00	0	0.00
Total	261	2.48	0	0.00

```

=====

```

## oam-perf

## Syntax

**oam-perf**

## Context

[\[Tree\]](#) (clear>test-oam oam-perf)

## Full Context

clear test-oam oam-perf

## Description

This command clears OAM performance statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## oam-perf

## Syntax

```
oam-perf [interval seconds] [ repeat repeat] [{absolute | rate}]
```

## Context

[\[Tree\]](#) (monitor>test-oam oam-perf)

## Full Context

```
monitor test-oam oam-perf
```

## Description

This command monitors the OAM performance statistics.

## Parameters

### *seconds*

Specifies the time interval, in seconds.

**Values** 3 to 60

### *repeat*

Specifies the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Specifies that the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Specifies that the rate-per-second is displayed.

**Default** delta

## Platforms

All

## 17.3 oam-pm

### oam-pm

#### Syntax

**oam-pm**

#### Context

[\[Tree\]](#) (show oam-pm)

#### Full Context

show oam-pm

#### Description

Commands in this context show Operations, Administration, and Maintenance Performance Management information.

#### Platforms

All

### oam-pm

#### Syntax

**oam-pm session *session-name* {dm | dmm | lmm | slm | twamp-light}**

#### Context

[\[Tree\]](#) (clear oam-pm)

#### Full Context

clear oam-pm

#### Description

This command clears OAM performance statistics reported by the **show>test-oam >oam-perf [ detail]**.

#### Parameters

##### ***session-name***

Identifies the session name, up to 32 characters, that the test is associated with.

##### **dm**

Specifies the MPLS delay measurement test that is affected by the command.

**dmm**

Specifies the DMM test that is affected by the command.

**lmm**

Specifies the LMM test that is affected by the command.

**slm**

Specifies the SLM test that is affected by the command.

**twamp-light**

Specifies the TWAMP-light test that is affected by the command.

**Platforms**

All

**oam-pm**

**Syntax**

**oam-pm**

**Context**

[\[Tree\]](#) (monitor oam-pm)

**Full Context**

monitor oam-pm

**Description**

Commands in this context monitor Operations, Administration, and Maintenance Performance Management information.

**Platforms**

All

## 17.4 oam-template

**oam-template**

**Syntax**

**oam-template**

**Context**

[\[Tree\]](#) (show>router>mpls>mpls-tp oam-template)

## Full Context

```
show router mpls mpls-tp oam-template
```

## Description

This command displays MPLS-TP OAM template information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of MPLS OAM template detail information.

## Output Example

```
*A:mlstp-dutA# show router mpls mpls-tp oam-template

=====
MPLS-TP OAM Templates
=====
Template Name : privatebed-oam-template Router ID      : 1
BFD Template  : privatebed-bfd-template Hold-Down Time: 0 centiseconds
                                           Hold-Up Time  : 20 deciseconds
=====
```

## 17.5 ocsp-cache

### ocsp-cache

## Syntax

```
ocsp-cache [entry-id]
```

## Context

[\[Tree\]](#) (show>certificate ocsp-cache)

## Full Context

```
show certificate ocsp-cache
```

## Description

This command displays the current cached OCSP results. The output includes the following information:

Certificate issuer

Certificate serial number

OCSP result

Cache entry expire time

## Parameters

### *entry-id*

Specifies the local cache entry identifier of the certificate that was validated by the OCSP responder.

**Values** 1 to 2000

## Platforms

All

## 17.6 of-switch

### of-switch

## Syntax

### **of-switch**

**of-switch** *ofs-name* **controller** *ip-address:port* **detail**

**of-switch** *ofs-name* **status controller** [*ip-address:port*]

**of-switch** *ofs-name* **controller**

**of-switch** *ofs-name* **flowtable**

**of-switch** *ofs-name* **status**

**of-switch** *ofs-name* **port**

## Context

[\[Tree\]](#) (show>open-flow of-switch)

## Full Context

show open-flow of-switch

## Description

This command displays information related to H-OFS configuration and operations as per the parameters specified.

If no parameter is specified, this command displays a summary for H-OFS instances configured.

## Parameters

### *ofs-name*

Specifies the name of the configured H-OFS instance, up to 32 characters.

### *ip-address:port*

Displays information on the controller for the specified H-OFS instance.

**Values** ip-address: a.b.c.d  
port: 1 to 65535

**detail**

Displays detailed information.

**flowtable**

Displays information about flowtables for the specified H-OFS instance.

**status**

Displays status information for the specified H-OFS switch or its controller.

**port**

Displays information about the logical OpenFlow ports registered with the specified H-OFS instance.

**Platforms**

VSR

**Output**

**Output Example**

```
*A:Dut-A# show open-flow of-switch "s1" status
=====
Open Flow Switch Information
=====
Switch Name       : s1
Data Path ID      : 0
Admin Status      : Up
Echo Interval     : 10 seconds
Echo Multiple     : 3
Logical Port Type : all
Buffer Size       : 256
Num. of Tables    : 1
Description       : test-sw1
Capabilities Supp.: flow-stats table-stats port-stats
=====

*A:Dut-A# show open-flow of-switch "s1" controller
=====
Open Flow Controller Summary
=====
IP Address          Port
-----
10.20.1.2           6633
10.20.1.3           6633
-----
Number of Controllers : 2
=====

*A:Dut-A# show open-flow of-switch "s1" controller 10.20.1.2:6633 detail
=====
Open Flow Controller Information
=====
IP Address      : 10.20.1.2      Port      : 6633
Role            : equal        Generation ID : 0
-----
Open Flow Channel Information
```



```

-----
Channel ID          : 1          Version          : 4
Connection Type    : primary      Operational Status: Up
Operational Flags  : socketStateEstablished helloReceived helloTransmitted
                    handshake
Async Fltr Packet In
  (Master or Equal) : tableMiss applyAction
  (Slave)           : (Not Specified)
Async Fltr Port Status
  (Master or Equal) : portAdd portDelete portModify
  (Slave)           : portAdd portDelete portModify
Async Fltr Flow Rem
  (Master or Equal) : idleTimeOut hardTimeOut flowModDelete groupDelete
  (Slave)           : (Not Specified)

Echo Time Expiry   : 0d 00:00:10      Hold Time Expiry : 0d 00:00:30
Conn. Uptime       : 0d 00:00:00      Conn. Retry       : 0d 00:00:00
  
```

-----  
 Open Flow Channel Stats - Channel ID(1)  
 -----

Packet Type	Transmitted Packets	Received Packets	Error Packets
Hello	1	1	0
Error	0	0	0
Echo Request	0	70	0
Echo Reply	70	0	0
Experimenter	0	0	0
Feat. Request	0	1	0
Feat. Reply	1	0	0
Get Cfg Request	0	1	0
Get Cfg Reply	1	0	0
Set Config	0	1	0
Packet In	0	0	0
Flow Removed	0	0	0
Port Status	0	0	6
Packet Out	0	0	0
Flow Modify	0	0	0
Group Modify	0	0	0
Port Modify	0	0	0
Table Modify	0	0	0
Multipart Req	0	0	0
Multipart Reply	0	0	0
Barrier Request	0	0	0
Barrier Reply	0	0	0
Get Q Cfg Req	0	0	0
Get Q Cfg Reply	0	0	0
Role Request	0	0	0
Role Reply	0	0	0
Get Async Req	0	0	0
Get Async Reply	0	0	0
Set Async	0	0	0
Meter Modify	0	0	0

-----  
 \*A:Dut-A# show open-flow of-switch "s1" flowtable  
 =====

Flow Table Information  
 =====

```

Flow Table ID      : 0          Max-Size          : 1000
No-Match Action    : fall-through  Curr Num. of Entries : 1
                                      Max. Num. of Entries : 54
  
```

```

=====
*A:Dut-A# show open-flow of-switch "s1" port
=====
Open Flow Port Stats
=====
Port ID      Port Name          Transmitted Packets  Transmitted Bytes
-----
1073741825  to_B               0                    0
1073741826  to_C               0                    0
1073741827  to_D               0                    0
1073741828  to_E               0                    0
1073741829  to_F               0                    0
1073742824  1                  0                    0
=====

*A:Dut-C# show open-flow of-switch "ofs" controller 1.3.8.8:6633 detail
=====
Open Flow Controller Information
=====
IP Address      : 1.3.8.8          Port          : 6633
Role            : equal
Generation ID   : 0
-----
Open Flow Channel Information - Channel ID(2)
-----
Channel ID      : 2                Version       : 4
Connection Type : primary          Operational Status: Up
Auxiliary ID    : 0
Source Address  : 10.20.1.3       Source Port    : 49722
Operational Flags : socket-state-established hello-received hello-transmitted
                    handshake
Async Fltr Packet In
(Master or Equal): table-miss apply-action
(Slave)          : (Not Specified)
Async Fltr Port Status
(Master or Equal): port-add port-delete port-modify
(Slave)          : port-add port-delete port-modify
Async Fltr Flow Rem
(Master or Equal): idle-time-out hard-time-out flow-mod-delete group-delete
(Slave)          : (Not Specified)
Echo Time Expiry : 0d 00:00:04      Hold Time Expiry : 0d 00:00:24
Conn. Uptime     : 0d 01:27:53    Conn. Retry       : 0d 00:00:00
-----
Open Flow Channel Stats - Channel ID(2)
-----
Packet Type      Transmitted Packets  Received Packets  Error Packets
-----
Hello            0                    0                 0
Error            0                    0                 0
Echo Request     348                  174               0
Echo Reply       174                  348               0
Experimenter     0                    0                 0
Feat. Request    0                    0                 0
Feat. Reply      0                    0                 0
Get Cfg Request  0                    0                 0
Get Cfg Reply    0                    0                 0
Set Config       0                    0                 0
Packet In        0                    0                 0
Flow Removed     0                    0                 0
Port Status      0                    0                 0
Packet Out       0                    0                 0
Flow Modify      0                    0                 0
Group Modify     0                    0                 0
    
```

```

Port Modify      0          0          0
Table Modify    0          0          0
Multipart Req   0          0          0
Multipart Reply 0          0          0
Barrier Request 0          0          0
Barrier Reply   0          0          0
Get Q Cfg Req   0          0          0
Get Q Cfg Reply 0          0          0
Role Request    0          0          0
Role Reply      0          0          0
Get Async Req   0          0          0
Get Async Reply 0          0          0
Set Async       0          0          0
Meter Modify    0          0          0
-----
-----
Open Flow Channel Information - Channel ID(3)
-----
Channel ID      : 3          Version      : 4
Connection Type : auxiliary   Operational Status: Up
Auxiliary ID    : 1
Source Address  : 10.20.1.3   Source Port   : 49748
Operational Flags : socket-state-established hello-received hello-transmitted
                    handshake
Async Fltr Packet In
(Master or Equal): table-miss apply-action
(Slave)          : (Not Specified)
Async Fltr Port Status
(Master or Equal): port-add port-delete port-modify
(Slave)          : port-add port-delete port-modify
Async Fltr Flow Rem
(Master or Equal): idle-time-out hard-time-out flow-mod-delete group-delete
(Slave)          : (Not Specified)
Echo Time Expiry : 0d 00:00:02   Hold Time Expiry : 0d 00:00:22
Conn. Uptime     : 0d 01:27:47   Conn. Retry       : 0d 00:00:00
-----
Open Flow Channel Stats - Channel ID(3)
-----
Packet Type      Transmitted Packets  Received Packets    Error Packets
-----
Hello            0                    0                    0
Error            0                    0                    0
Echo Request     348                  174                  0
Echo Reply       174                  348                  0
Experimenter     0                    0                    0
Feat. Request    0                    0                    0
Feat. Reply      0                    0                    0
Get Cfg Request  0                    0                    0
Get Cfg Reply    0                    0                    0
Set Config       0                    0                    0
Packet In        0                    0                    0
Flow Removed     0                    0                    0
Port Status      0                    0                    0
Packet Out       0                    0                    0
Flow Modify      0                    0                    0
Group Modify     0                    0                    0
Port Modify      0                    0                    0
Table Modify     0                    0                    0
Multipart Req    0                    0                    0
Multipart Reply  0                    0                    0
Barrier Request  0                    0                    0
Barrier Reply    0                    0                    0
Get Q Cfg Req    0                    0                    0
    
```

```

Get Q Cfg Reply 0 0 0
Role Request 0 0 0
Role Reply 0 0 0
Get Async Req 0 0 0
Get Async Reply 0 0 0
Set Async 0 0 0
Meter Modify 0 0 0
-----
-----
Open Flow Channel Information - Channel ID(4)
-----
Channel ID : 4 Version : 4
Connection Type : auxiliary Operational Status: Up
Auxiliary ID : 2
Source Address : 10.20.1.3 Source Port : 49749
Operational Flags : socket-state-established hello-received hello-transmitted
handshake
Async Fltr Packet In
(Master or Equal): table-miss apply-action
(Slave) : (Not Specified)
Async Fltr Port Status
(Master or Equal): port-add port-delete port-modify
(Slave) : port-add port-delete port-modify
Async Fltr Flow Rem
(Master or Equal): idle-time-out hard-time-out flow-mod-delete group-delete
(Slave) : (Not Specified)
Echo Time Expiry : 0d 00:00:01 Hold Time Expiry : 0d 00:00:21
Conn. Uptime : 0d 01:27:49 Conn. Retry : 0d 00:00:00
-----
Open Flow Channel Stats - Channel ID(4)
-----
Packet Type Transmitted Packets Received Packets Error Packets
-----
Hello 0 0 0
Error 0 0 0
Echo Request 348 174 0
Echo Reply 174 348 0
Experimenter 0 0 0
Feat. Request 0 0 0
Feat. Reply 0 0 0
Get Cfg Request 0 0 0
Get Cfg Reply 0 0 0
Set Config 0 0 0
Packet In 104420 0 0
Flow Removed 0 0 0
Port Status 0 0 0
Packet Out 0 0 0
Flow Modify 0 0 0
Group Modify 0 0 0
Port Modify 0 0 0
Table Modify 0 0 0
Multipart Req 0 0 0
Multipart Reply 0 0 0
Barrier Request 0 0 0
Barrier Reply 0 0 0
Get Q Cfg Req 0 0 0
Get Q Cfg Reply 0 0 0
Role Request 0 0 0
Role Reply 0 0 0
Get Async Req 0 0 0
Get Async Reply 0 0 0
Set Async 0 0 0
Meter Modify 0 0 0
    
```

```
-----  
-----  
=====  
*A: Dut - C#
```

## of-switch

### Syntax

**of-switch** *ofs-name* [**flowtable** *of-table-id*] [**controller** *ip-address:port*] [{**grt** | **system** | **service-id** *service-id*}] [**cookie** *hex-string*] [**priority** *priority*]

**of-switch** *ofs-name* [**flowtable** *of-table-id*] [**controller** *ip-address:port*] **service-id** *service-id* **sap** *sap-id* [**cookie** *hex-string*] [**priority** *priority*]

**of-switch** *ofs-name* [**flowtable** *of-table-id*] [**controller** *ip-address:port*] **summary**

### Context

**[Tree]** (tools>dump>open-flow of-switch)

### Full Context

tools dump open-flow of-switch

### Description

This command can be used to dump information for a given OpenFlow switch or its flowtable. Priority and cookie filters are provided no focus on part of a flow table.

Usage examples:

- tools>dump>open-flow>of-switch ofs-test** — This command displays detailed flow information for a given OpenFlow switch. If the switch has **switch-defined-cookie** enabled, the flows with all cookie-types are displayed.
- tools>dump>open-flow>of-switch ofs summary** — This command displays a summary of each cookie context and the number of flows in it for the switch that has **switch-defined-cookie** enabled. If **switch-defined-cookie** is disabled, then the total number of entries is displayed (single context).
- Options like **grt**, **system**, **service-id**, **sap-id**, **cookie**, and **priority** can be used to limit display entries to the specified options.

### Parameters

#### **ofs-name**

Specifies the name of the OFS instance, up to 32 characters.

#### **of-table-id**

Specifies the identifier for the OpenFlow table.

**Values** 0

#### **ip-address:port**

Specifies the IP address and TCP port for the OpenFlow channel to the controller.

**Values** ip-address: a.b.c.d  
 port: 1 to 65535

**grt**

Flowtable rules applicable to GRT instance (IES, Router).

**system**

Flowtable rules applicable to system filters.

**service-id**

Specifies the identifier for the service.

**Values** 1 to 2148007978 | *svc-name*: 64 characters max

**hex-string**

Specifies the identifier for the OpenFlow cookies.

**Values** 0x0 to 0xFFFFFFFFFFFFFFFF

**priority**

Specifies the priority for the OpenFlow switch.

**Values** 0 to 65535

**sap-id**

Specifies the identifier for the Ethernet SAP.

**Values**

null	port-id   bundle-id   bpgrp-id   lag-id   aps-id>	
dot1q	port-id   bundle-id   bpgrp-id   lag-id   aps-id   pw-id>:qtag1	
qinq	port-id   bundle-id   bpgrp-id   lag-id   pw-id>:qtag1.qtag2	
cem	slot/mda/port.channel	
ima-grp	bundle-id>[:vpi/vci   vpi   vpi1.vpi2   cp.conn-prof-id]	
	cp	keyword
	conn-prof-id	1..8000
port-id	slot/mda/port[.channel]	
aps-id	aps-<group-id>[.channel]	
	aps	keyword
	group-id	1..64
ccag-id	<i>ccag-id.path-id</i> [ <i>cc-type</i> ]< <i>cc-id</i>	
	ccag	keyword
	id	1..8

	path-id	a, b
	cc-type	.sap-net, .net-sap
	cc-id	0..4094
eth-tunnel	eth-tunnel- <i>id</i> [:eth-tun-sap-id]	
	id	1..1024
	eth-tun-sap-id	0..4094
lag-id	lag-id	
	lag	keyword
	id	1..800
pw-id	pw- <i>id</i>	
	pw	keyword
	id	1..10239
qtag1	*, 0..4094	
qtag2	*   0..4094	
tunnel-id	tunnel- <i>id</i> .private   public: <i>tag</i>	
	tunnel	keyword
	id	1..16
	tag	0..4094

**summary**

Keyword to summarize output.

**Platforms**

VSR

**Output**

**Output Example**

```

=====
Switch: ofs
=====
Table      : 0                      Flow Pri  : 0
Cookie     : 0x0000000000000000    CookieType: grt
Controller: :::0
Filter Hnd: 0xC30000010000FFFF
Filter     : _tmnx_ofs_ofs:1 entry 65535
    
```

```
In Port : *
VID : *
EthType : *
Src IP : *
Dst IP : *
IP Proto : *
Src Port : *
ICMP Type : *
Label : *
IPv6ExtHdr: (Not Specified)

Action : Fall-through

Flow Flags: IPv4/6 [!E] [R0] [DEF]
Up Time : 0d 00:03:51
Mod TS : 0
#Packets : 0
Add TS : 680828
Stats TS : 703820
#Bytes : 0
-----
Table : 0
Cookie : 0x0000000000000000
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000010000FFEF
Filter : _tmnx_ofs_ofs:1 entry 65519
Flow Pri : 16
CookieType: grt

In Port : *
VID : *
EthType : 0x0800
Src IP : *
Dst IP : 22.22.22.1/32
IP Proto : *
Src Port : *
ICMP Type : *
Label : *
Outer VID : *
DSCP : *
Dst Port : *
ICMP Code : *

Action : Forward On Svc 99

Flow Flags: IPv4
Up Time : 0d 00:01:15
Mod TS : 0
#Packets : 0
Add TS : 696581
Stats TS : 703820
#Bytes : 0
-----
Table : 0
Cookie : 0xC000006300000000
Controller: 1.3.8.8:6633
Filter Hnd: 0x8300000D0000FFEE
Filter : _tmnx_ofs_ofs:13 entry 65518
Flow Pri : 17
CookieType: service 99

In Port : *
VID : *
EthType : 0x0800
Src IP : *
Dst IP : 22.22.22.2/32
IP Proto : *
Src Port : *
ICMP Type : *
Label : *
Outer VID : *
DSCP : *
Dst Port : *
ICMP Code : *

Action : Forward On GRT

Flow Flags: IPv4
Up Time : 0d 00:01:10
Mod TS : 0
#Packets : 0
Add TS : 697095
Stats TS : 703820
#Bytes : 0
-----
```



```
Table      : 0                               Flow Pri   : 4
Cookie     : 0xC00007E200000000           CookieType: service 2018
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000050000FFFB
Filter     : _tmnx_ofs_ofs:5 entry 65531
SAP        : 1/1/3:0
```

```
In Port    : 0x2218000
VID        : 0x1000                         Outer VID  : *
EthType    : 0x0800
Src IP     : *
Dst IP     : *
IP Proto   : *                             DSCP      : *
Src Port   : *                             Dst Port  : *
ICMP Type  : *                             ICMP Code : *
Label     : *
```

```
Action     : Forward On Sap
              Sap 1/1/3:0
```

```
Flow Flags: IPv4
Up Time    : 0d 00:02:13                   Add TS    : 690788
Mod TS     : 0                             Stats TS  : 703820
#Packets   : 0                             #Bytes   : 0
```

```
-----
Table      : 0                               Flow Pri   : 3
Cookie     : 0xC00007E200000000           CookieType: service 2018
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000040000FFFC
Filter     : _tmnx_ofs_ofs:4 entry 65532
SAP        : 1/1/3:4094
```

```
In Port    : 0x2218000
VID        : 0x1ffe                         Outer VID  : *
EthType    : 0x0800
Src IP     : *
Dst IP     : *
IP Proto   : *                             DSCP      : *
Src Port   : *                             Dst Port  : *
ICMP Type  : *                             ICMP Code : *
Label     : *
```

```
Action     : Forward On Sap
              Sap 1/1/3:4094
```

```
Flow Flags: IPv4
Up Time    : 0d 00:02:18                   Add TS    : 690274
Mod TS     : 0                             Stats TS  : 703820
#Packets   : 0                             #Bytes   : 0
```

```
-----
Table      : 0                               Flow Pri   : 5
Cookie     : 0xC00007E200000000           CookieType: service 2018
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000060000FFFA
Filter     : _tmnx_ofs_ofs:6 entry 65530
SAP        : lag-800:4094
```

```
In Port    : 0x50000320
VID        : 0x1ffe                         Outer VID  : *
EthType    : 0x0800
Src IP     : *
Dst IP     : *
IP Proto   : *                             DSCP      : *
Src Port   : *                             Dst Port  : *
```

```

ICMP Type : *
Label      : *

Action     : Forward On Sap
            Sap lag-800:4094

Flow Flags: IPv4
Up Time    : 0d 00:02:09
Mod TS     : 0
#Packets   : 0
Add TS     : 691201
Stats TS   : 703821
#Bytes     : 0
-----
Table      : 0
Cookie     : 0xC00007E300000000
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000090000FFF7
Filter     : _tmnx_ofs_ofs:9 entry 65527
SAP        : 2/1/3:1.0
Flow Pri   : 8
CookieType: service 2019

In Port    : 0x4218000
VID        : 0x1000
EthType    : 0x0800
Src IP     : *
Dst IP     : *
IP Proto   : *
Src Port   : *
ICMP Type  : *
Label      : *
DSCP       : *
Dst Port   : *
ICMP Code  : *

Action     : Forward On Sap
            Sap 2/1/3:1.0

Flow Flags: IPv4
Up Time    : 0d 00:01:56
Mod TS     : 0
#Packets   : 0
Add TS     : 692448
Stats TS   : 703821
#Bytes     : 0
-----
Table      : 0
Cookie     : 0xC00007E300000000
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000080000FFF8
Filter     : _tmnx_ofs_ofs:8 entry 65528
SAP        : 2/1/3:4094.4094
Flow Pri   : 7
CookieType: service 2019

In Port    : 0x4218000
VID        : 0x1ffe
EthType    : 0x0800
Src IP     : *
Dst IP     : *
IP Proto   : *
Src Port   : *
ICMP Type  : *
Label      : *
DSCP       : *
Dst Port   : *
ICMP Code  : *

Action     : Forward On Sap
            Sap 2/1/3:4094.4094

Flow Flags: IPv4
Up Time    : 0d 00:02:01
Mod TS     : 0
#Packets   : 0
Add TS     : 692032
Stats TS   : 703821
#Bytes     : 0
-----
Table      : 0
Cookie     : 0xC00007E300000000
Controller: 1.3.8.8:6633
Flow Pri   : 10
CookieType: service 2019
    
```

```
Filter Hnd: 0x8300000B0000FFF5
Filter   : _tmnx_ofs_ofs:11 entry 65525
SAP     : lag-799:4094.4094

In Port  : 0x5000031f
VID      : 0x1ffe                Outer VID : 0x1ffe
EthType  : 0x0800
Src IP   : *
Dst IP   : *
IP Proto : *                    DSCP       : *
Src Port : *                    Dst Port  : *
ICMP Type : *                  ICMP Code : *
Label    : *

Action   : Forward On Sap
          Sap lag-799:4094.4094

Flow Flags: IPv4
Up Time  : 0d 00:01:46          Add TS   : 693483
Mod TS   : 0                   Stats TS : 703821
#Packets : 0                   #Bytes  : 0
-----
Table    : 0                   Flow Pri  : 1
Cookie   : 0xC00007E400000000 CookieType: service 2020
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000020000FFFE
Filter   : _tmnx_ofs_ofs:2 entry 65534
SAP     : 2/1/4

In Port  : 0x4220000
VID      : 0x0                  Outer VID : *
EthType  : 0x0800
Src IP   : *
Dst IP   : *
IP Proto : *                    DSCP       : *
Src Port : *                    Dst Port  : *
ICMP Type : *                  ICMP Code : *
Label    : *

Action   : Forward On Sap
          Sap 2/1/4

Flow Flags: IPv4
Up Time  : 0d 00:02:27          Add TS   : 689443
Mod TS   : 0                   Stats TS : 703821
#Packets : 0                   #Bytes  : 0
-----
Table    : 0                   Flow Pri  : 12
Cookie   : 0xC00007E400000000 CookieType: service 2020
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000020000FFF3
Filter   : _tmnx_ofs_ofs:2 entry 65523
SAP     : 2/1/4

In Port  : 0x4220000
VID      : 0x0                  Outer VID : *
EthType  : 0x0800
Src IP   : *
Dst IP   : *
IP Proto : *                    DSCP       : *
Src Port : *                    Dst Port  : *
ICMP Type : *                  ICMP Code : *
Label    : *
```

```
Action      : Forward Sdp 12:4294967295

Flow Flags: IPv4
Up Time    : 0d 00:01:36          Add TS     : 694524
Mod TS     : 0                   Stats TS   : 703821
#Packets   : 0                   #Bytes     : 0
-----

Table      : 0                   Flow Pri   : 13
Cookie     : 0xC00007E400000000 CookieType: service 2020
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000020000FFF2
Filter     : _tmnx_ofs_ofs:2 entry 65522
SAP       : 2/1/4

In Port    : 0x4220000
VID        : 0x0                 Outer VID  : *
EthType    : 0x0800
Src IP     : *
Dst IP     : *
IP Proto   : *                   DSCP      : *
Src Port   : *                   Dst Port  : *
ICMP Type  : *                   ICMP Code  : *
Label     : *

Action     : Forward On Nhop(Indirect)
           : Nhop: 200.180.200.180

Flow Flags: IPv4
Up Time    : 0d 00:01:31          Add TS     : 695037
Mod TS     : 0                   Stats TS   : 703821
#Packets   : 0                   #Bytes     : 0
-----

Table      : 0                   Flow Pri   : 15
Cookie     : 0xC00007E400000000 CookieType: service 2020
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000020000FFF0
Filter     : _tmnx_ofs_ofs:2 entry 65520
SAP       : 2/1/4

In Port    : 0x4220000
VID        : 0x0                 Outer VID  : *
EthType    : 0x0800
Src IP     : *
Dst IP     : *
IP Proto   : *                   DSCP      : *
Src Port   : *                   Dst Port  : *
ICMP Type  : *                   ICMP Code  : *
Label     : *

Action     : Forward LspId 1
           : Lsp lsp1

Flow Flags: IPv4
Up Time    : 0d 00:01:21          Add TS     : 696067
Mod TS     : 0                   Stats TS   : 703822
#Packets   : 0                   #Bytes     : 0
-----

Table      : 0                   Flow Pri   : 14
Cookie     : 0xC00007E400000000 CookieType: service 2020
Controller: 1.3.8.8:6633
Filter Hnd: 0x430000020000FFF1
Filter     : _tmnx_ofs_ofs:2 entry 65521
SAP       : 2/1/4
```

```
In Port : 0x4220000
VID : 0x0                                Outer VID : *
EthType : 0x86dd
Src IP : *
Dst IP : *
IP Proto : *                               DSCP : *
Src Port : *                               Dst Port : *
ICMP Type : *                             ICMP Code : *
Label : *
IPv6ExtHdr: (Not Specified)

Action : Forward On Nhop(Indirect)
        Nhop: 3ffe:1111:1111:2222:2222:3333:3333:4444

Flow Flags: IPv6
Up Time : 0d 00:01:26                      Add TS : 695551
Mod TS : 0                                 Stats TS : 703822
#Packets : 0                               #Bytes : 0
-----
Table : 0                                  Flow Pri : 2
Cookie : 0xC00007E400000000              CookieType: service 2020
Controller: 1.3.8.8:6633
Filter Hnd: 0x830000030000FFFD
Filter : _tmnx_ofs_ofs:3 entry 65533
SAP : lag-798

In Port : 0x5000031e
VID : 0x0                                Outer VID : *
EthType : 0x0800
Src IP : *
Dst IP : *
IP Proto : *                               DSCP : *
Src Port : *                               Dst Port : *
ICMP Type : *                             ICMP Code : *
Label : *

Action : Forward On Sap
        Sap lag-798

Flow Flags: IPv4
Up Time : 0d 00:02:23                      Add TS : 689857
Mod TS : 0                                 Stats TS : 703822
#Packets : 0                               #Bytes : 0
-----
Table : 0                                  Flow Pri : 19
Cookie : 0x8000000000000000              CookieType: system
Controller: 1.3.8.8:6633
Filter Hnd: 0x4300000E0000FFEC
Filter : _tmnx_ofs_ofs:14 entry 65516

In Port : *
VID : *                                  Outer VID : *
EthType : 0x86dd
Src IP : *
Dst IP : 3ffe::1616:1601/128
IP Proto : *                               DSCP : *
Src Port : *                               Dst Port : *
ICMP Type : *                             ICMP Code : *
Label : *
IPv6ExtHdr: (Not Specified)

Action : Forward On Nhop(Indirect)
        Nhop: 3ffe:1111:1111:2222:2222:3333:3333:4444
```

```
Flow Flags: IPv6
Up Time   : 0d 00:01:01          Add TS    : 698121
Mod TS    : 0                   Stats TS  : 703822
#Packets  : 0                   #Bytes   : 0
-----
Table     : 0                   Flow Pri  : 18
Cookie    : 0x8000000000000000 CookieType: system
Controller: 1.3.8.8:6633
Filter Hnd: 0x8300000E0000FFED
Filter    : _tmnx_ofs_ofs:14 entry 65517

In Port   : *
VID       : *                   Outer VID : *
EthType   : 0x0800
Src IP    : *
Dst IP    : 22.22.22.1/32
IP Proto  : *                   DSCP     : *
Src Port  : *                   Dst Port : *
ICMP Type : *                   ICMP Code: *
Label     : *

Action    : Forward On Nhop(Indirect)
           Nhop: 200.180.200.180

Flow Flags: IPv4
Up Time   : 0d 00:01:06          Add TS    : 697608
Mod TS    : 0                   Stats TS  : 703822
#Packets  : 0                   #Bytes   : 0
-----
Number of flows: 17
=====
*A:Dut-C#
```

## 17.7 omcr

### omcr

#### Syntax

omcr

#### Context

[\[Tree\]](#) (show>redundancy>multi-chassis omcr)

#### Full Context

show redundancy multi-chassis omcr

#### Description

Commands in this context display OMCR information for subscribers.

#### Platforms

7750 SR

## 17.8 on-change-paths

### on-change-paths

#### Syntax

**on-change-paths**

**on-change-paths** {**open-config** | **nokia**}

#### Context

[\[Tree\]](#) (tools>dump>system>telemetry on-change-paths)

#### Full Context

tools dump system telemetry on-change-paths

#### Description

This command lists all paths supporting on-change notifications. The keywords **open-config** and **nokia** indicate which model should be used as a reference for the output.

#### Parameters

##### **open-config**

Indicates that the open-config model will be used as the output reference.

##### **nokia**

Indicates that the Nokia model will be used as the output reference.

#### Platforms

All

#### Output

##### Output Example

```
A:node-6# tools dump system telemetry on-change-paths nokia
=====
Nokia on-change state paths
=====
/state/log/log-id/oper-state
/state/port/ethernet/lldp/dest-mac/remote-system/chassis-id
/state/port/ethernet/lldp/dest-mac/remote-system/chassis-id-subtype
/state/port/ethernet/lldp/dest-mac/remote-system/remote-port-id
/state/port/ethernet/lldp/dest-mac/remote-system/remote-port-id-subtype
/state/port/ethernet/lldp/dest-mac/remote-system/port-description
/state/port/ethernet/lldp/dest-mac/remote-system/system-enabled-capabilities
/state/port/ethernet/lldp/dest-mac/remote-system/system-supported-capabilities
/state/port/ethernet/lldp/dest-mac/remote-system/system-description
/state/port/ethernet/lldp/dest-mac/remote-system/system-name
/state/port/ethernet/lldp/dest-mac/remote-system/mgmt-address/interface-subtype
/state/port/ethernet/lldp/dest-mac/remote-system/mgmt-address/interface-id
```

```
/state/port/ethernet/lldp/dest-mac/remote-system/mgmt-address/object-identifier
/state/router/interface/if-oper-status
/state/router/isis/interface/level/oper-metric/ipv4-unicast
/state/router/isis/interface/level/oper-metric/ipv6-unicast
/state/router/isis/interface/level/oper-metric/ipv4-multicast
/state/router/isis/interface/level/oper-metric/ipv6-multicast
/state/router/mpls/lsp/oper-state
/state/router/mpls/lsp/primary/mbb/last-mbb/type
/state/router/mpls/lsp/primary/mbb/last-mbb/end-time
/state/router/mpls/lsp/primary/mbb/last-mbb/metric
/state/router/mpls/lsp/primary/mbb/last-mbb/state
/state/router/mpls/lsp/primary/mbb/last-mbb/signaled-bw
/state/router/mpls/lsp/secondary/mbb/last-mbb/type
/state/router/mpls/lsp/secondary/mbb/last-mbb/end-time
/state/router/mpls/lsp/secondary/mbb/last-mbb/metric
/state/router/mpls/lsp/secondary/mbb/last-mbb/state
/state/router/mpls/lsp/secondary/mbb/last-mbb/signaled-bw
/state/service/ies/interface/if-oper-status
/state/service/vprn/interface/if-oper-status
/state/service/vprn/log/log-id/oper-state
/state/system/lldp/chassis-id
/state/system/lldp/chassis-id-subtype
/state/system/lldp/system-name
/state/system/lldp/system-description
/state/system/telemetry/grpc/subscription/path/deferred-collection-count
=====
```

## 17.9 opaque-database

### opaque-database

#### Syntax

```
opaque-database [area area-id | as] [ adv-router router-id] [ls-id] [detail]
```

#### Context

[\[Tree\]](#) (show>router>ospf opaque-database)

#### Full Context

```
show router ospf opaque-database
```

#### Description

This command displays OSPF opaque database information.

#### Parameters

**area** *area-id*

Displays all opaque databases configured in this area.

**Values** ip-address — a.b.c.d  
area — 0 to 4294967295



**as**

Displays opaque databases configured in the autonomous system (AS).

**adv-router *router-id* [*ls-id*]**

Displays opaque database information associated with the specified advertising router. To further narrow the number of items displayed, the *ls-id* can optionally be specified.

**Platforms**

All

**Output**

OSPF Opaque Database Output

[Table 349: OSPF Opaque Database Output Fields](#) describes the OSPF opaque database output fields.

*Table 349: OSPF Opaque Database Output Fields*

Label	Description
Area Id	A 32-bit integer uniquely identifying an area. Area ID 0.0.0.0 is used for the OSPF backbone.
Type	NSSA — This area is configured as an NSSA area. Area — This area is configured as a standard area (not NSSA or stub). Stub — This area is configured as an NSSA area.
Link State Id	The link state ID is an LSA type specific field containing either a Router-Id or an IP Address; it identifies the piece of the routing domain being described by the advertisement.
Adv Rtr Id	The router identifier of the router advertising the LSA.
Age	The age of the link state advertisement in seconds.
Sequence	The signed 32-bit integer sequence number.
Cksum	The 32-bit unsigned sum of the link-state advertisements' LS checksums.

**Output Example**

```
*A:Dut-C# show router ospf opaque-database
=====
Rtr Base OSPFv2 Instance 0 Opaque Link State Database (type : All)
=====
Type Id Link State Id Adv Rtr Id Age Sequence Cksum
-----
Area 0.0.0.0 4.0.0.0 10.20.1.2 740 0x80000002 0x5653
Area 0.0.0.0 7.0.0.2 10.20.1.2 745 0x80000001 0xee35
Area 0.0.0.0 7.16.0.6 10.20.1.2 725 0x80000002 0xe434
Area 0.0.0.0 8.0.0.6 10.20.1.2 730 0x80000002 0x5f1d
Area 0.0.0.0 8.0.0.7 10.20.1.2 731 0x80000002 0xbeb8
Area 0.0.0.0 4.0.0.0 10.20.1.3 739 0x80000002 0x6dd6
```

Area 0.0.0.0	7.0.0.2	10.20.1.3	744	0x80000001	0x1601
Area 0.0.0.0	7.16.0.2	10.20.1.3	734	0x80000001	0x914
Area 0.0.0.0	8.0.0.6	10.20.1.3	728	0x80000002	0x8ac1
Area 0.0.0.0	8.0.0.7	10.20.1.3	729	0x80000002	0xf57b
Area 0.0.0.0	4.0.0.0	10.20.1.4	740	0x80000002	0x15ba
Area 0.0.0.0	7.0.0.2	10.20.1.4	745	0x80000001	0x3dcc
Area 0.0.0.0	7.16.0.3	10.20.1.4	736	0x80000001	0xda04
Area 0.0.0.0	8.0.0.4	10.20.1.4	732	0x80000002	0xfe4a
Area 0.0.0.0	8.0.0.5	10.20.1.4	732	0x80000002	0x4f1f
Area 0.0.0.0	4.0.0.0	10.20.1.5	738	0x80000002	0x746e
Area 0.0.0.0	7.0.0.2	10.20.1.5	744	0x80000001	0x6498
Area 0.0.0.0	7.16.0.6	10.20.1.5	730	0x80000001	0xb624
Area 0.0.0.0	8.0.0.4	10.20.1.5	729	0x80000002	0x50f1
Area 0.0.0.0	8.0.0.5	10.20.1.5	730	0x80000002	0xc279
Area 0.0.0.1	4.0.0.0	10.20.1.1	740	0x80000002	0xf5a0
Area 0.0.0.1	7.0.0.2	10.20.1.1	745	0x80000001	0xc769
Area 0.0.0.1	8.0.0.4	10.20.1.1	730	0x80000002	0x3f46
Area 0.0.0.1	8.0.0.5	10.20.1.1	731	0x80000002	0x7e02
Area 0.0.0.1	4.0.0.0	10.20.1.2	739	0x80000002	0x5653
Area 0.0.0.1	7.16.0.1	10.20.1.2	744	0x80000001	0x46cc
Area 0.0.0.1	7.16.0.2	10.20.1.2	735	0x80000001	0x9663
Area 0.0.0.1	7.16.0.3	10.20.1.2	734	0x80000001	0xe6f9
Area 0.0.0.1	7.16.0.4	10.20.1.2	725	0x80000002	0xad3d
Area 0.0.0.1	7.16.0.5	10.20.1.2	725	0x80000002	0x49b8
Area 0.0.0.1	8.0.0.4	10.20.1.2	730	0x80000002	0x3324
Area 0.0.0.1	8.0.0.5	10.20.1.2	731	0x80000002	0x89f3
Area 0.0.0.1	4.0.0.0	10.20.1.3	739	0x80000002	0x6dd6
Area 0.0.0.1	7.16.0.1	10.20.1.3	743	0x80000001	0x6d98
Area 0.0.0.1	7.16.0.3	10.20.1.3	723	0x80000002	0xdef8
Area 0.0.0.1	7.16.0.4	10.20.1.3	729	0x80000001	0xa941
Area 0.0.0.1	7.16.0.5	10.20.1.3	724	0x80000002	0x7084
Area 0.0.0.1	7.16.0.6	10.20.1.3	724	0x80000002	0xcff
Area 0.0.0.1	8.0.0.4	10.20.1.3	730	0x80000002	0xada2
Area 0.0.0.1	8.0.0.5	10.20.1.3	730	0x80000002	0x9bb2

-----  
 No. of Opaque LSAs: 40  
 =====

A:ALA-A# show router ospf 1 opaque-database

-----  
 Rtr Base OSPFv2 Instance 1 Opaque Link State Database (type : All)  
 =====

Area Id	Type	Link State Id	Adv Rtr Id	Age	Sequence	Cksum
0.0.0.0	Area	1.0.0.1	180.0.0.2	205	0x8000007e	0xb1b2
0.0.0.0	Area	1.0.0.1	180.0.0.5	617	0x80000084	0xb1a6
0.0.0.0	Area	1.0.0.1	180.0.0.8	1635	0x80000081	0xc391
0.0.0.0	Area	1.0.0.1	180.0.0.9	1306	0x80000082	0xc58c
0.0.0.0	Area	1.0.0.1	180.0.0.10	53	0x80000082	0xc986
0.0.0.0	Area	1.0.0.1	180.0.0.11	577	0x8000007e	0xd57c
0.0.0.0	Area	1.0.0.1	180.0.0.12	1628	0x80000080	0xd578
0.0.0.0	Area	1.0.0.1	180.0.0.13	581	0x80000080	0xd972
0.0.0.0	Area	1.0.0.1	180.0.0.22	1006	0x80000080	0xfd3c
0.0.0.0	Area	1.0.0.1	180.0.0.23	1238	0x80000083	0xfb39
0.0.0.0	Area	1.0.0.1	180.0.0.27	55	0x80000083	0xc21
0.0.0.0	Area	1.0.0.1	180.0.0.28	389	0x80000083	0x101b
0.0.0.0	Area	1.0.0.1	180.0.0.29	1658	0x80000082	0x1614
0.0.0.0	Area	1.0.0.1	180.0.0.30	976	0x80000083	0x180f
0.0.0.0	Area	1.0.0.2	180.0.0.2	45	0x800000a0	0x2f60
0.0.0.0	Area	1.0.0.2	180.0.0.5	1357	0x80000084	0x7038
0.0.0.0	Area	1.0.0.2	180.0.0.8	1960	0x80000084	0x3472
...						

-----  
 No. of Opaque LSAs: 88  
 =====

```

=====
A:ALA-A#
*A:Dut-C# show router ospf opaque-database adv-router 10.20.1.5
=====
Rtr Base OSPFv2 Instance 0 Opaque Link State Database (type : All)
=====
Type  Id                Link State Id      Adv Rtr Id      Age  Sequence  Cksum
-----
Area  0.0.0.0              4.0.0.0           10.20.1.5      750  0x80000002 0x746e
Area  0.0.0.0              7.0.0.2           10.20.1.5      756  0x80000001 0x6498
Area  0.0.0.0              7.16.0.6          10.20.1.5      742  0x80000001 0xb624
Area  0.0.0.0              8.0.0.4           10.20.1.5      741  0x80000002 0x50f1
Area  0.0.0.0              8.0.0.5           10.20.1.5      742  0x80000002 0xc279
-----
No. of Opaque LSAs: 5
=====
*A:Dut-C# show router ospf opaque-database adv-router 10.20.1.5 detail
=====
Rtr Base OSPFv2 Instance 0 Opaque Link State Database (type : All) (detail)
=====
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id   : 10.20.1.5
Link State Id : 4.0.0.0             LSA Type        : Area Opaque
Sequence No   : 0x80000002         Checksum        : 0x746e
Age           : 752                Length          : 52
Options       : E
Advertisement  : Router Info
  Capabilities (1) Len 4 :
    0x14
  SR algorithm (8) Len 1 :
    0x0
  SR label range (9) Len 12 :
    Range-size=1001
    Sub-TLV SID/label(1) len 3 :
      label=25000
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id   : 10.20.1.5
Link State Id : 7.0.0.2             LSA Type        : Area Opaque
Sequence No   : 0x80000001         Checksum        : 0x6498
Age           : 758                Length          : 44
Options       : E
Advertisement  : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=1 pfxLen=32 AF=0 pfx=10.20.1.5
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=55
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id   : 10.20.1.5
Link State Id : 7.16.0.6            LSA Type        : Area Opaque
Sequence No   : 0x80000001         Checksum        : 0xb624
Age           : 744                Length          : 44
Options       : E
Advertisement  : Extended Prefix
  TLV Extended prefix (1) Len 20 :

```

```

rtType=3 pfxLen=32 AF=0 pfx=10.20.1.6
  Flags=Node (0x40)
Sub-TLV Prefix SID (2) len 8 :
  Flags=noPHP (0x40)
  MT-ID=0 Algorithm=0 SID/Index/Label=66
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id   : 10.20.1.5
Link State Id : 8.0.0.4           LSA Type       : Area Opaque
Sequence No   : 0x80000002       Checksum        : 0x50f1
Age          : 743              Length         : 52
Options       : E
Advertisement : Extended Link
  TLV Extended link (1) Len 28 :
    link Type=Transit (2) Id=1.3.5.5 Data=1.3.5.5
  Sub-TLV LAN-Adj-SID (3) len 11 :
    Flags=Value Local (0x60)
    MT-ID=0 Weight=0 Neighbor-ID=10.20.1.3
    SID/Index/Label=262139
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id   : 10.20.1.5
Link State Id : 8.0.0.5           LSA Type       : Area Opaque
Sequence No   : 0x80000002       Checksum        : 0xc279
Age          : 744              Length         : 52
Options       : E
Advertisement : Extended Link
  TLV Extended link (1) Len 28 :
    link Type=Transit (2) Id=1.4.5.5 Data=1.4.5.5
  Sub-TLV LAN-Adj-SID (3) len
=====
*A:Dut-A# show router ospf 1 opaque-database adv-router 10.20.1.1 detail
=====
Rtr Base OSPFv2 Instance 1 Opaque Link State Database (type : All) (detail)
=====
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id   : 10.20.1.1
Link State Id : 1.0.0.1           LSA Type       : Area Opaque
Sequence No   : 0x80000028       Checksum        : 0xb136
Age          : 192              Length         : 28
Options       : E
Advertisement :
  ROUTER-ID TLV (0001) Len 4 : 10.20.1.1
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id   : 10.20.1.1
Link State Id : 1.0.0.2           LSA Type       : Area Opaque
Sequence No   : 0x8000000d       Checksum        : 0x17f3
Age          : 678              Length         : 164
Options       : E
Advertisement :
  LINK INFO TLV (0002) Len 140 :
    Sub-TLV: 1   Len: 1   LINK_TYPE   : 2
    Sub-TLV: 2   Len: 4   LINK_ID     : 10.10.1.2
    Sub-TLV: 3   Len: 4   LOC_IP_ADDR  : 10.10.1.1
    Sub-TLV: 4   Len: 4   REM_IP_ADDR  : 0.0.0.0
    Sub-TLV: 5   Len: 4   TE_METRIC    : 1000
    Sub-TLV: 6   Len: 4   MAX_BDWTH   : 100000 Kbps
    
```

```

Sub-TLV: 7      Len: 4      RSRVBL_BDWTH : 800000 Kbps
Sub-TLV: 8      Len: 32     UNRSRVD_CLS0 :
P0: 80000 Kbps P1: 320000 Kbps P2: 320000 Kbps P3: 320000 Kbps
P4: 400000 Kbps P5: 400000 Kbps P6: 400000 Kbps P7: 80000 Kbps
Sub-TLV: 9      Len: 4      ADMIN_GROUP : 0 None
Sub-TLV: 17     Len: 36     TELK_BW_CONST:
BW Model : MAM
BC0: 80000 Kbps BC1: 0 Kbps BC2: 320000 Kbps BC3: 0 Kbps
BC4: 0 Kbps BC5: 400000 Kbps BC6: 0 Kbps BC7: 0 Kbps

=====
*A:Dut-A#

*A:Dut-F# show router ospf opaque-database adv-router 10.20.1.6 detail
=====
Rtr Base OSPFv2 Instance 0 Opaque Link State Database (type: All) (detail)
=====
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id : 10.20.1.6
Link State Id : 4.0.0.0           LSA Type      : Area Opaque
Sequence No   : 0x80000002       Checksum      : 0x590e
Age          : 288              Length       : 52
Options       : E
Advertisement : Router Info
Capabilities (1) Len 4 :
0x14
SR algorithm (8) Len 2 :
0x0          0x2
SR label range (9) Len 12 :
Range-size=1000
Sub-TLV SID/Label(1) len 3 :
label=70000
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id : 10.20.1.6
Link State Id : 7.0.0.7           LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0x899a
Age          : 292              Length       : 44
Options       : E
Advertisement : Extended Prefix
TLV Extended prefix (1) Len 20 :
rtType=1 pfxLen=32 AF=0 pfx=10.20.1.6
Flags=Node (0x40)
Sub-TLV Prefix SID (2) len 8 :
Flags=noPHP (0x40)
MT-ID=0 Algorithm=0 SID/Index/Label=9
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id : 10.20.1.6
Link State Id : 7.16.0.2          LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0x6d0b
Age          : 292              Length       : 44
Options       : E
Advertisement : Extended Prefix
TLV Extended prefix (1) Len 20 :
rtType=3 pfxLen=32 AF=0 pfx=1.0.66.6
Flags=Att Node (0xc0)
Sub-TLV Prefix SID (2) len 8 :
Flags=noPHP (0x40)
    
```

```
MT-ID=0 Algorithm=0 SID/Index/Label=3
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id  : 10.20.1.6
Link State Id : 7.16.0.9           LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0xfale
Age           : 288              Length        : 44
Options       : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=1.0.33.3
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=0
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id  : 10.20.1.6
Link State Id : 7.16.0.10        LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0x40d4
Age           : 288              Length        : 44
Options       : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=10.20.1.3
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=6
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id  : 10.20.1.6
Link State Id : 7.16.0.11        LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0xcb52
Age           : 288              Length        : 44
Options       : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=1.0.22.2
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=5
-----
Opaque LSA
-----
Area Id       : 0.0.0.0           Adv Router Id  : 10.20.1.6
Link State Id : 7.16.0.12        LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0x7898
Age           : 288              Length        : 44
Options       : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=10.20.1.1
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=10
-----
Opaque LSA
-----
```

```
Area Id       : 0.0.0.0           Adv Router Id  : 10.20.1.6
Link State Id : 7.16.0.13          LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0xff29
Age           : 288              Length       : 44
Options       : E
Advertisement  : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=1.0.11.1
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=4
```

-----  
Opaque LSA

```
Area Id       : 0.0.0.0           Adv Router Id  : 10.20.1.6
Link State Id : 8.0.0.2          LSA Type      : Area Opaque
Sequence No   : 0x80000002       Checksum      : 0x3098
Age           : 289              Length       : 48
Options       : E
Advertisement  : Extended Link
  TLV Extended link (1) Len 24 :
    link Type=P2P (1) Id=10.20.1.2 Data=1.0.26.6
  Sub-TLV Adj-SID (2) len 7 :
    Flags=Backup Value Local (0xe0)
    MT-ID=0 Weight=0 SID/Index/Label=262143
```

-----  
Opaque LSA

```
Area Id       : 0.0.0.0           Adv Router Id  : 10.20.1.6
Link State Id : 8.0.0.4          LSA Type      : Area Opaque
Sequence No   : 0x80000002       Checksum      : 0xc9b
Age           : 289              Length       : 48
Options       : E
Advertisement  : Extended Link
  TLV Extended link (1) Len 24 :
    link Type=P2P (1) Id=10.20.1.5 Data=1.0.56.6
  Sub-TLV Adj-SID (2) len 7 :
    Flags=Backup Value Local (0xe0)
    MT-ID=0 Weight=0 SID/Index/Label=262141
```

-----  
Opaque LSA

```
Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 4.0.0.0          LSA Type      : Area Opaque
Sequence No   : 0x80000002       Checksum      : 0x590e
Age           : 290              Length       : 52
Options       : E
Advertisement  : Router Info
  Capabilities (1) Len 4 :
    0x14
  SR algorithm (8) Len 2 :
    0x0 0x2
  SR label range (9) Len 12 :
    Range-size=1000
    Sub-TLV SID/label(1) len 3 :
    label=70000
```

-----  
Opaque LSA

```
Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 7.0.0.6          LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0xf214
Age           : 295              Length       : 44
```

```

Options      : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=1 pfxLen=32 AF=0 pfx=1.0.66.6
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=3
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id   : 10.20.1.6
Link State Id : 7.16.0.1          LSA Type        : Area Opaque
Sequence No   : 0x80000001      Checksum        : 0x7cc6
Age          : 290              Length          : 44
Options      : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=1 pfxLen=32 AF=0 pfx=1.0.22.2
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP Backup (0x42)
    MT-ID=0 Algorithm=2 SID/Index/Label=996
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id   : 10.20.1.6
Link State Id : 7.16.0.3          LSA Type        : Area Opaque
Sequence No   : 0x80000001      Checksum        : 0x491
Age          : 296              Length          : 44
Options      : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=10.20.1.6
    Flags=Att Node (0xc0)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=9
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id   : 10.20.1.6
Link State Id : 7.16.0.4          LSA Type        : Area Opaque
Sequence No   : 0x80000001      Checksum        : 0x9c67
Age          : 291              Length          : 44
Options      : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=1.0.55.5
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=2
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id   : 10.20.1.6
Link State Id : 7.16.0.5          LSA Type        : Area Opaque
Sequence No   : 0x80000001      Checksum        : 0xc253
Age          : 291              Length          : 44
Options      : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=10.20.1.5
    
```



```
Flags=Node (0x40)
Sub-TLV Prefix SID (2) len 8 :
Flags=noPHP (0x40)
MT-ID=0 Algorithm=0 SID/Index/Label=8
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id : 10.20.1.6
Link State Id : 7.16.0.6        LSA Type      : Area Opaque
Sequence No   : 0x80000001     Checksum      : 0xd03e
Age          : 291            Length        : 44
Options       : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=1.0.44.4
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=1
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id : 10.20.1.6
Link State Id : 7.16.0.7        LSA Type      : Area Opaque
Sequence No   : 0x80000001     Checksum      : 0x868f
Age          : 291            Length        : 44
Options       : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=10.20.1.4
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=7
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id : 10.20.1.6
Link State Id : 7.16.0.8        LSA Type      : Area Opaque
Sequence No   : 0x80000001     Checksum      : 0xc84a
Age          : 291            Length        : 44
Options       : E
Advertisement : Extended Prefix
  TLV Extended prefix (1) Len 20 :
    rtType=3 pfxLen=32 AF=0 pfx=10.20.1.2
    Flags=Node (0x40)
  Sub-TLV Prefix SID (2) len 8 :
    Flags=noPHP (0x40)
    MT-ID=0 Algorithm=0 SID/Index/Label=11
-----
Opaque LSA
-----
Area Id      : 0.0.0.1          Adv Router Id : 10.20.1.6
Link State Id : 8.0.0.3        LSA Type      : Area Opaque
Sequence No   : 0x80000002     Checksum      : 0xc1fb
Age          : 292            Length        : 48
Options       : E
Advertisement : Extended Link
  TLV Extended link (1) Len 24 :
    link Type=P2P (1) Id=10.20.1.3 Data=1.0.36.6
  Sub-TLV Adj-SID (2) len 7 :
    Flags=Backup Value Local (0xe0)
    MT-ID=0 Weight=0 SID/Index/Label=262142
-----
```

```
Opaque LSA
-----
Area Id       : 0.0.0.1           Adv Router Id  : 10.20.1.6
Link State Id : 8.0.0.5           LSA Type      : Area Opaque
Sequence No   : 0x80000001       Checksum      : 0xbc0d
Age           : 298              Length        : 48
Options       : E
Advertisement  : Extended Link
  TLV Extended link (1) Len 24 :
    link Type=P2P (1) Id=10.20.1.2 Data=1.0.26.6
  Sub-TLV Adj-SID (2) len 7 :
    Flags=Backup Value Local (0xe0)
    MT-ID=0 Weight=0 SID/Index/Label=262140
=====
*A:Dut-F#
```

## 17.10 open-flow

### open-flow

#### Syntax

**open-flow**

#### Context

[\[Tree\]](#) (show open-flow)

#### Full Context

show open-flow

#### Description

Displays OpenFlow switch hybrid information.

#### Platforms

VSR

### open-flow

#### Syntax

**open-flow of-switch** *ofs-name* **controller** *ip-address:port* [**channel** *channel-id*] **statistics**  
**open-flow of-switch** *ofs-name* **controller** *ip-address:port* [**vprn** *service-id* **ofc-loopback** *ip-address*]  
**statistics**

#### Context

[\[Tree\]](#) (clear open-flow)

## Full Context

clear open-flow

## Description

This command clears the OpenFlow statistics.

## Parameters

### *ofs-name*

Specifies the name of the OFS instance, up to 32 characters.

### *ip-address:port*

Specifies the IP address and TCP port for the OpenFlow channel to the controller.

Values		
ipv4-address:	a.b.c.d:port	
ipv6-address:	[x:x:x:x:x:x]:port (eight 16-bit pieces)	
	x:x:x:x:x.d.d.d.d	
	x:	[0 to FFFF]H
	d:	[0 to 255]D
	port	1 to 65535

### *channel-id*

Specifies the channel ID.

**Values** 1 to 65535

### *service-id*

Specifies the service ID.

**Values** 1 to 2147483647

### *ip-address*

Specifies the IP address for the OpenFlow channel to the controller.

Values		
ipv4-address:	a.b.c.d	
ipv6-address:	x:x:x:x:x:x (eight 16-bit pieces)	
	x:x:x:x:x.d.d.d.d	
	x:	[0 to FFFF]H
	d:	[0 to 255]D

## Platforms

VSR

## open-flow

### Syntax

**open-flow**

### Context

**[Tree]** (tools>dump open-flow)

### Full Context

tools dump open-flow

### Description

This command enables dumping of the OpenFlow information.

### Platforms

VSR

## 17.11 oper-group

## oper-group

### Syntax

**oper-group** [*group-name*]

**oper-group** [*group-name*] **detail**

**oper-group** [*group-name*] **members** [**sap**] [ **sdp**] [**site**] [**bgp-evpn**]

**oper-group** [*group-name*] **monitoring** [**sap**] [ **sdp**] [**site**] [**mvrp**]

### Context

**[Tree]** (show>service oper-group)

### Full Context

show service oper-group

### Description

This command displays oper-group information, member count, monitor-client count, and status in a single line for each of the configured oper-groups.

## Parameters

### **group-name**

Displays oper-group information.

### **detail**

Displays detailed information for each of the configured oper-groups.

### **members**

Displays the members of the specified oper-group, or all oper-groups. A filter can be applied on the output to display only required member type, by specifying an optional parameter.

**Values** sap, sdp, site, bgp-evpn

### **monitoring**

displays the clients that are monitoring the specified oper-group, or all oper-groups. A filter can be applied on the output to display only required client type, by specifying an optional parameter.

**Values** sap, sdp, site, mvrp

## Platforms

All

## Output

The following output is an example of server oper group information. [Table 350: oper-group detail Field Descriptions](#) describes the output fields.

### Output Example

```
*A:Dut-B# show service oper-group
=====
Service Oper Group Information
=====
Name                Oper  Creation Hold   Hold  Members Monitor
                  Status Origin  UpTime DnTime
                  (secs) (secs)
-----
og-test              up    manual   4     0     4     4
-----
Entries found: 1
=====
*A:Dut-B#

*A:Dut-B# show service oper-group detail
=====
Service Oper Group Information
=====
Oper Group          : og-test
Creation Origin     : manual           Oper Status       : up
Hold DownTime      : 0 secs           Hold UpTime       : 4 secs
Members            : 4                Monitoring        : 4
=====
Member SDP-Binds for OperGroup: og-test
=====
```

```

SdpId          SvcId      Type IP address      Adm   Opr
-----
201:1          1          Spok 10.20.1.1      Up    Up
201:2          1          Spok 10.20.1.1      Up    Up
-----
SDP Entries found: 4
=====
Monitoring SDP-Binds for OperGroup: og-test
=====
SdpId          SvcId      Type IP address      Adm   Opr
-----
205:1          1          Spok 10.20.1.5      Up    Up
205:2          1          Spok 10.20.1.5      Up    Up
-----
SDP Entries found: 4
=====
    
```

A:admin@PE-2# show service oper-group "llf-1" detail

=====  
 Service Oper Group Information  
 =====

```

Oper Group      : llf-1
Creation Origin : manual           Oper Status: down
Hold DownTime  : 0 secs         Hold UpTime: 4 secs
Members        : 1             Monitoring  : 1
    
```

=====  
 Member BGP-EVPN for OperGroup: llf-1  
 =====

```

SvcId:Instance (Type)      Status
-----
500:1 (mpls)                Inactive
    
```

BGP-EVPN Entries found: 1  
 =====

=====  
 Monitoring LAG for OperGroup: llf-1  
 =====

```

Lag-Id      Adm   Opr   Weighted Threshold Up-Count Act/Stdby
-----
1           up    down  No         0         0       N/A
    
```

LAG Entries found: 1  
 =====

\*A:ALA-12>config# show service oper-group "test" monitoring

=====  
 Monitoring Ports for OperGroup: test  
 =====

```

PortId          Admin-state Oper-state
-----
1/1/1           down       down
    
```

Port Entries found: 1  
 =====

Table 350: oper-group detail Field Descriptions

Label	Description
PortId	The port ID being monitored.
Adm Admin-state	Displays the administrative state.
Opr Oper-state	Displays the operational state.
Oper Group	The name of the operational group being monitored.
Creation Origin	Displays how the operational group was created.
Oper Status	Displays the operational status.
Hold Downtime	Displays the time, in seconds, that the system waits before declaring the status as "down".
Hold UpTime	Displays the time, in seconds, that the system waits before declaring the status as "up".
Members	Displays the number of members.
Monitoring	Displays the number of objects monitoring the operational group.
Sdpld	Displays the SDP ID.
Svcld	Displays the SVC ID.
Type	Displays the type of SDP binding.
IP address	Displays the IP address
Svcld:Instance	Displays the SVC ID and EVPN instance number.
(Type)	Displays the instance type.
Status	Displays the status of the EVPN instance.
Lag-Id	Displays the monitoring LAG ID.
Weighted	Displays whether or not the LAG is weighted.
Threshold	Displays the threshold number.
Up-Count	Displays the up-count number.
Act/Stdby	Displays whether the LAG is active or standby.

## 17.12 optimal-route-reflection

### optimal-route-reflection

#### Syntax

**optimal-route-reflection**

#### Context

[\[Tree\]](#) (show>router>bgp optimal-route-reflection)

#### Full Context

show router bgp optimal-route-reflection

#### Description

Commands in this context display optimal route reflection (ORR) information.

#### Platforms

All

## 17.13 origin-validation

### origin-validation

#### Syntax

**origin-validation**

#### Context

[\[Tree\]](#) (show>router origin-validation)

#### Full Context

show router origin-validation

#### Description

Commands in this context display origin validation information.

#### Platforms

All



## origin-validation

### Syntax

**origin-validation rpk-session** *ip-address*

### Context

**[Tree]** (clear>router origin-validation)

### Full Context

clear router origin-validation

### Description

This command creates the context to clear and reset origin validation entities.

### Parameters

#### *ip-address*

Clears the origin validation entities associated with the specified IP address.

#### Values

ipv4-address:	a.b.c.d	
ipv6-address:	x:x:x:x:x:x:x	[-interface]
	x:x:x:x:x:d.d.d.d	[-interface]
	x:	[0 to FFFF]H
	d:	[0 to 255]D
	interface	up to 32 characters, mandatory for link local addresses

### Platforms

All

## 17.14 ospf

## ospf

### Syntax

**ospf** [**instance** *ospf-instance*] [**area** *area-id*]

## Context

[\[Tree\]](#) (tools>dump>router>te-database ospf)

## Full Context

tools dump router te-database ospf

## Description

Commands in this context dump the OSPF traffic engineering database.

## Parameters

### *ospf-instance*

Specifies the OSPF instance.

**Values** 0 to 31

### *area-id*

Specifies the OSPF area ID.

**Values** ip-address, 0 to 4294967295

## Platforms

All

## Output

The following outputs are examples of OSPF traffic engineering database information.

### Output Example

```
*A:Dut-C# tools dump router te-database ospf
=====
Rtr: 10.10.10.3      Addr: 10.10.10.3      OSPF/0/0.0.0.0
Rtr: 10.10.10.4      Addr: 0.0.0.0         OSPF/0/0.0.0.0
AdvRtr: 10.10.10.3   Nghb: 10.10.10.4     OSPF/0/0.0.0.0
  LocIp/Id 100.100.101.2 /0                               Status: OK
AdvRtr: 10.10.10.4   Nghb: 10.10.10.3     OSPF/0/0.0.0.0
  LocIp/Id 100.100.101.1 /0                               Status: OK
=====

*A:Dut-C# tools dump router te-database detail ospf
=====
Rtr: 10.10.10.3      Addr: 10.10.10.3      OSPF/0/0.0.0.0
Rtr: 10.10.10.4      Addr: 0.0.0.0         OSPF/0/0.0.0.0
-----
AdvRtr: 10.10.10.3   Nghb: 10.10.10.4     OSPF/0/0.0.0.0
  Local Addr: 100.100.101.2   Local Id: 0   If Index: 3
  Remote Addr: 0.0.0.0       Remote Id: 0   Link Type: p2p
                               status: OK
  IGP Metric: 100
-----
AdvRtr: 10.10.10.4   Nghb: 10.10.10.3     OSPF/0/0.0.0.0
  Local Addr: 100.100.101.1   Local Id: 0   If Index: 0
  Remote Addr: 0.0.0.0       Remote Id: 0   Link Type: p2p
                               status: OK
  IGP Metric: 100
```

```
-----  
*A:Dut - C#
```

## ospf

### Syntax

**ospf** [*ospf-instance* | **all**]

### Context

[\[Tree\]](#) (show>router ospf)

### Full Context

show router ospf

### Description

Commands in this context display OSPF information.

### Parameters

#### **ospf-instance**

Shows the specified OSPF instance.

**Values** 0 to 31

#### **all**

Shows all configured OSPF instances.

### Platforms

All

## ospf

### Syntax

**ospf** [*ospf-instance*]

### Context

[\[Tree\]](#) (clear>router ospf)

### Full Context

clear router ospf

### Description

This command clears and resets OSPF protocol entities.

## Parameters

### *ospf-instance*

Clears the specified OSPF instance.

**Values** 0 to 31

## Platforms

All

```
ospf
```

## Syntax

```
ospf
```

## Context

[\[Tree\]](#) (show ospf)

## Full Context

```
show ospf
```

## Description

This command displays OSPFv2 related information for all instances.

## Platforms

All

```
ospf
```

## Syntax

```
ospf
```

## Context

[\[Tree\]](#) (tools>dump>router ospf)

## Full Context

```
tools dump router ospf
```

## Description

This command enters the context to dump OSPFv2 related information.

## Platforms

All

## ospf

### Syntax

**ospf**

### Context

[\[Tree\]](#) (tools>perform>router ospf)

### Full Context

tools perform router ospf

### Description

Commands in this context perform OSPFv2 tasks.

### Platforms

All

## ospf

### Syntax

**ospf** [*ospf-instance*]

### Context

[\[Tree\]](#) (monitor>router ospf)

### Full Context

monitor router ospf

### Description

Commands in this context configure monitor commands for the OSPF instance.

### Parameters

***ospf-instance***

Specifies the OSPF instance.

**Values** 0 to 31

### Platforms

All

## 17.15 ospf3

### ospf3

#### Syntax

```
ospf3 [instance ospf-instance] [ area area-id]
```

#### Context

[\[Tree\]](#) (tools>dump>router>te-database ospf3)

#### Full Context

```
tools dump router te-database ospf3
```

#### Description

Commands in this context dump the OSPF3 traffic engineering database.

#### Parameters

##### *ospf-instance*

Specifies the OSPF3 instance.

**Values** 0 to 31 (ipv6-unicast address-family), 64 to 95 (ipv6-unicast address-family)

##### *area-id*

Specifies the OSPF3 area ID.

**Values** ip-address, 0 to 4294967295

#### Platforms

All

#### Output

The following outputs are examples of OSPF3 traffic engineering database information.

#### Output Example

```
*A:Dut-C# tools dump router te-database ospf3
=====
Rtr: 10.10.10.5      Addr: 0.0.0.0          RTR V6 EXP OSPFv3/0/0.0.0.0
Rtr: 255.0.0.0      Addr: 0.0.0.0          RTR V6 EXP OSPFv3/0/0.0.0.0
AdvRtr: 10.10.10.5  Nghb: 0.0.0.4:10.10.10.5 EXP OSPFv3/0/0.0.0.0
  LocIp/Id 0.0.0.0   /4                      Status: NO-RTRID
AdvRtr: 255.0.0.0  Nghb: 0.0.0.4:10.10.10.5 EXP OSPFv3/0/0.0.0.0
  LocIp/Id 0.0.0.0   /2                      Status: NO-RTRID
Net: 0.0.0.4:10.10.10.5 RTR V6                  EXP OSPFv3/0/0.0.0.0
  AttRtr: 10.10.10.5 EXP OSPFv3/0/0.0.0.0
  AttRtr: 255.0.0.0 EXP OSPFv3/0/0.0.0.0
```

```

=====
*A:Dut-C#

*A:Dut-C# tools dump router te-database detail ospf3
=====
Rtr: 10.10.10.5      Addr: 0.0.0.0          RTR V6 EXP OSPFv3/0/0.0.0.0
    Pfx: 2001:db8::3/128          INTRA-AREA Metric: 0          EXP
    Pfx: 2001:db8:1::/64          INTRA-AREA Metric: 0          EXP
Rtr: 255.0.0.0      Addr: 0.0.0.0          RTR V6 EXP OSPFv3/0/0.0.0.0
    Pfx: 2001:db8::5/128          INTRA-AREA Metric: 0          EXP
-----
AdvRtr: 10.10.10.5  Nghb: 0.0.0.4:10.10.10.5  EXP OSPFv3/0/0.0.0.0
    Local Addr: 0.0.0.0          Local Id: 4    If Index: 4
    Remote Addr: 0.0.0.0          Remote Id: 4   Link Type: TRANS
                                status:  NO-RTRID

    IGP Metric: 100
-----
AdvRtr: 255.0.0.0  Nghb: 0.0.0.4:10.10.10.5  EXP OSPFv3/0/0.0.0.0
    Local Addr: 0.0.0.0          Local Id: 2    If Index: 0
    Remote Addr: 0.0.0.0          Remote Id: 4   Link Type: TRANS
                                status:  NO-RTRID

    IGP Metric: 100
-----
Net: 0.0.0.4:10.10.10.5          RTR V6          EXP OSPFv3/0/0.0.0.0
    AttRtr: 10.10.10.5          EXP OSPFv3/0/0.0.0.0
    AttRtr: 255.0.0.0          EXP OSPFv3/0/0.0.0.0
=====
*A:Dut-C#
    
```

## ospf3

### Syntax

**ospf3** [*ospf-instance*]

### Context

[\[Tree\]](#) (tools>perform>router ospf3)

### Full Context

tools perform router ospf3

### Description

Commands in this context perform OSPF3 tasks.

### Parameters

#### **ospf-instance**

Shows the specified OSPF3 instance.

**Values** 0 to 31 | 64 to 95  
 0 to 31 — IPv6-unicast address-family  
 64 to 95— IPv4-unicast address-family

## Platforms

All

ospf3

## Syntax

**ospf3** [*ospf-instance* | **all**]

## Context

[\[Tree\]](#) (show>router ospf3)

## Full Context

show router ospf3

## Description

Commands in this context display OSPF3 information.

## Parameters

### *ospf-instance*

Shows the specified OSPF3 instance.

**Values** 0 to 31 | 64 to 95  
0 to 31 — IPv6-unicast address-family  
64 to 95— IPv4-unicast address-family

### **all**

Shows all configured OSPF3 instances.

## Platforms

All

ospf3

## Syntax

**ospf3** [*ospf-instance*]

## Context

[\[Tree\]](#) (clear>router ospf3)

## Full Context

clear router ospf3



## Description

This command clears and resets OSPF3 protocol entities.

## Parameters

### *ospf-instance*

Clears the specified OSPF3 instance.

**Values** 0 to 31 | 64 to 95  
0 to 31 — IPv6-unicast address-family  
64 to 95 — IPv4-unicast address-family

## Platforms

All

```
ospf3
```

## Syntax

```
ospf3
```

## Context

[\[Tree\]](#) (show ospf3)

## Full Context

```
show ospf3
```

## Description

This command displays OSPFv3 related information for all instances.

## Platforms

All

```
ospf3
```

## Syntax

```
ospf3
```

## Context

[\[Tree\]](#) (tools>dump>router ospf3)

## Full Context

```
tools dump router ospf3
```

## Description

Commands in this context dump OSPFv3 related information.

## Platforms

All

ospf3

## Syntax

**ospf** [*ospf-instance*]

## Context

[\[Tree\]](#) (monitor>router ospf3)

## Full Context

monitor router ospf3

## Description

Commands in this context configure monitor commands for the OSPF3 instance.

## Parameters

### *ospf-instance*

Specifies the OSPF3 instance.

### Values

<i>ospf-instance</i>	0 to 31, 64 to 95	
	0 to 31	ipv6-unicast address-family
	64 to 95	ipv4-unicast address-family

## Platforms

All

## 17.16 overload

overload

## Syntax

**overload**

```
overload card slot-number fp fp-number
overload card slot-number fp fp-number cpm-ip
overload card slot-number fp fp-number cpm-ipv6
overload card slot-number fp fp-number cpm-mac
overload card slot-number fp fp-number ip ip-filter-id direction direction
overload card slot-number fp fp-number ipv6 ipv6-filter-id direction direction
overload card slot-number fp fp-number mac mac-filter-id direction direction
```

## Context

[\[Tree\]](#) (tools>dump>filter overload)

## Full Context

```
tools dump filter overload
```

## Description

This command, when used without parameters, allows the operator to identify filter memory banks with one or more policies in overload in the system by slot number, FP number, direction (ingress or egress), and type (IP-MAC or IPv6).

The command, when used with only the **card** and **fp** parameters, lists the filter policy ID as well as the number of entries in overload on a specified FP when the optional parameters *slot-number* and *fp-number* are specified.

This command, when used with the **ip**, **ipv6**, or **mac** parameters in conjunction with the **direction** parameter, displays the entries not programmed for a specified filter policy due to an overload condition.

This command, when used with the **cpm-ip**, **cpm-ipv6**, or **cpm-mac** parameters, displays the entries not programmed for a specified CPM filter policy. This command is available on applicable platforms only. Refer to the *7450 ESS, 7750 SR, 7950 XRS, and VSR System Management Guide, CPM Filters and Traffic Management* section for more details.

## Parameters

### *slot-number*

Specifies the IOM slot number or CPM for the overload command.

**Values** 1 to 10

**Values** A (when used with **cpm-ip**, **cpm-ipv6**, or **cpm-mac** parameters)

### *fp-number*

Specifies the FP number.

**Values** 1 to 8

### *ip-filter-id*

Specifies the IP filter policy ID or name for which to display information.

**Values** 1 to 65535 (Specifies the policy ID)

*name* (Specifies a string of up to 64 characters uniquely identifying this filter policy name)

**direction**

Specifies the direction.

**Values** ingress or egress

**ipv6-filter-id**

Specifies the IPv6 filter policy ID or name for which to display information.

**Values** 1 to 65535 (Specifies the policy ID)

*name* (Specifies a string of up to 64 characters uniquely identifying this filter policy name)

**mac-filter-id**

Specifies the MAC filter ID policy for which to display information. Values can be expressed in different formats and refer to static or dynamic filters. The following values only shows decimal integer format.

**Values** 1 to 65535

*filter-name* (Specifies a string of up to 64 characters uniquely identifying this filter policy name)

**Platforms**

All

**Output**

The following output is an example of filter overload status.

**Output Example**

```
*A:Dut# tools dump filter overload
=====
Filter Overload Status
=====
Slot FP  Dir  Type
-----
1    1  Ing  ip-mac
1    1  Egr  ipv6
=====
```

The following output is an example with **card** and **fp** parameters only.

```
A:Dut# tools dump filter overload card 1 fp 1
=====
Filter Overload Status
=====
Slot FP  Dir  Type                Filter  #Entries
-----
1    1  Ing  ip                   5       1
1    1  Egr  ipv6                 40008   10
=====
```

The following output is an example with **card**, **fp**, **{cpm-ip, cpm-ipv6}**, or **cpm-mac** parameters only.

```
*A:Dut# tools dump filter overload card "a" fp 1 cpm-ipv6
=====
Filter Overload Status
=====
Slot FP  Dir  Type                Filter      Entry
-----
A     1     cpm-ipv6                168
```

The following output is an example with **card**, **fp**, **{ip, ipv6}**, or **mac** and **direction** parameters only.

```
*A:Dut# tools dump filter overload card 1 fp 1 ip 9 direction ingress
=====
Filter Overload Status
=====
Slot FP  Dir  Type                Filter      Entry
-----
1     1  Ing  ip                  9          100
```

## overload

### Syntax

**overload** {rtm | fib | prefix-limit}

### Context

[\[Tree\]](#) (clear>router>isis overload)

### Full Context

clear router isis overload

### Description

This command clears the IS-IS overload.

### Parameters

#### rtm

Clears the overload because IS-IS reached the configured maximum route limit set with **maximum-routes** or **maximum-ipv6-routes** in a VPRN.

#### fib

Clears the overload because adding routes to the hardware FIB failed.

#### prefix-limit

Clears the overload when IS-IS has reached the configured maximum prefix limit set with the **prefix-limit** command.

### Platforms

All

## overload

### Syntax

**overload** {**rtm** | **fib** | **rtr-adv-lsa-limit**}

### Context

[\[Tree\]](#) (clear>router>ospf3 overload)

[\[Tree\]](#) (clear>router>ospf overload)

### Full Context

clear router ospf3 overload

clear router ospf overload

### Description

This command clears the OSPF or OSPF3 overload.

### Parameters

#### **rtm**

Clears the overload because OSPF or OSPF3 reached the configured maximum route limit set with **maximum-routes** or **maximum-ipv6-routes** in a VPRN.

#### **fib**

Clears the overload because adding routes to the hardware FIB failed.

#### **rtr-adv-lsa-limit**

Clears the overload because OSPF or OSPF3 exceeded the configured maximum limit on LSAs advertised by another router, which was set with **rtr-adv-lsa-limit**.

### Platforms

All

## 18 p Commands

### 18.1 p2mp

#### p2mp

##### Syntax

```
p2mp p2mp-id identifier root ip-address [ session ip-addr [label-space]] [summary | detail]
p2mp p2mp-id identifier root ip-address [ session ip-addr [label-space]] [summary | detail] inner-root ip-
address
p2mp p2mp-id identifier [rd rd] [ session ip-addr [label-space]] [family] [ summary | detail] [innermost-
root ip-address]
p2mp p2mp-id identifier root ip-address rd rd [session ip-addr [ label-space] [family] [summary | detail]
[innermost-root ip-address]
p2mp [session ip-addr [label-space]] [ family] [summary | detail] [opaque-type opaque-type]
p2mp source ip-address group mcast-address root ip-address [session ip-addr [ label-space]] [family]
[summary | detail] inner-root ip-address
p2mp source ip-address group mcast-address root ip-address [rd rd] [ session ip-addr [label-space]]
[summary | detail]
p2mp source ip-address group mcast-address [ session ip-addr [label-space]] [family] [ summary |
detail] [innermost-root ip-address]
p2mp stitching [p2mp-id identifier root ip-address [rd rd] [ inner-root ip-address]]
p2mp stitching source ip-address group mcast-address root ip-address inner-root ip-address
p2mp stitching p2mp-id identifier [rd rd] innermost-root ip-address
p2mp stitching source ip-address group mcast-address innermost-root ip-address
```

##### Context

[\[Tree\]](#) (show>router>ldp>bindings p2mp)

##### Full Context

```
show router ldp bindings p2mp
```

##### Description

This command displays LDP P2MP FEC bindings.

## Parameters

### **detail**

Displays detailed information.

### **family**

Displays either IPv4 or IPv6 active LDP information.

### **group *mcast-address***

Displays the P2MP group multicast address bindings.

### **inner-root *ip-address***

Displays recursive FECs whose inner root address matches the specified address.

### **innermost-root *ip-address***

Displays recursive FECs whose inner root address matches the specified address and non-recursive FECs that have a root address that matches the specified address.

### **opaque-type *opaque-type***

Specifies the type of a Multi-Point Opaque Value Element.

**Values** generic, ssm, vpn-ssm, recursive-ssm, vpn-recursive, grt-recursive

### **p2mp-id *identifier***

Displays LDP active P2MP identifier bindings.

**Values** 0 to 4294967295

### **rd *rd***

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val* | *2byte-asnumber:ext-comm-val* | *4byte-asnumber:comm-val*

### **root *ip-address***

Displays root IP address information.

### **session *ip-addr*[*label-space*]**

Displays information for the LDP session IP address and label space.

### **source *ip-address***

Displays LDP active P2MP source bindings.

**Values**

ipv4-address	- a.b.c.d
ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x - [0 to FFFF]H
	d - [0 to 255]D

### **stitching**

Displays stitching information for LDP P2MP FEC bindings.



**summary**

Displays information in a summarized format.

**Platforms**

All

**Output**

**Output Example**

The following show output displays recursive FECs.

```
A:Dut-C# show router ldp bindings p2mp stitching
=====
LDP GRT Recursive with Generic IPv4 P2MP Bindings
=====
RootAddr
InnerRootAddr                P2MP-Id                Stitch
-----
10.20.1.3
10.20.1.5                    8193                    lowerFec

10.180.5.5
10.20.1.5                    8193                    primUpperFec

10.181.5.5
10.20.1.5                    8193                    bkpUpperFec

-----
10.20.1.3
10.20.1.6                    8193                    lowerFec

10.180.5.5
10.20.1.6                    8193                    primUpperFec

10.181.5.5
10.20.1.6                    8193                    bkpUpperFec

-----
10.180.5.3
10.20.1.1                    8193                    lowerFec

10.20.1.1
--                            8193                    primUpperFec

-----
10.180.5.3
10.20.1.2                    8193                    lowerFec

10.20.1.2
--                            8193                    primUpperFec

-----
No. of GRT Recursive with Generic IPv4 P2MP Bindings: 10
=====

A:Dut-C# show router ldp bindings active p2mp
=====
LDP Bindings (IPv4 LSR ID 10.20.1.3)
(IPv6 LSR ID ::)
=====
```

```

Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, BA - ASBR Backup FEC
=====
LDP Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface
RootAddr     Op          IngLbl    EgrLbl
EgrNH        EgrIf/LspId
-----
8193         73730
10.20.1.1    Pop          262134    --
--          --
8193         73730
10.20.1.1 (UF) Swap          262134    Stitched
--          --
8193         73729
10.20.1.2    Pop          262135    --
--          --
8193         73729
10.20.1.2 (UF) Swap          262135    Stitched
--          --
8193         73728
10.20.1.3    Push          --         262137
10.180.2.1   1/1/1:0
8193         73728
10.20.1.3    Push          --         262137
10.181.2.1   1/1/1:1
-----
No. of Generic IPv4 P2MP Active Bindings: 6
=====

LDP GRT Recursive with Generic IPv4 P2MP Bindings (Active)
=====
P2MP-Id      Interface
RootAddr     Op          IngLbl    EgrLbl
InnerRootAddr
EgrNH        EgrIf/LspId
-----
8193         Unknw
10.20.1.3 (LF) Push          --         262135
10.20.1.5
10.180.2.1   1/1/1:0
8193         Unknw
10.20.1.3 (LF) Push          --         262135
10.20.1.5
10.181.2.1   1/1/1:1
8193         Unknw
10.20.1.3 (LF) Push          --         262136
10.20.1.6
10.180.2.1   1/1/1:0
8193         Unknw
    
```

10.20.1.3 (LF)	Push	--	262136
10.20.1.6			
10.181.2.1	1/1/1:1		
8193	Unknw		
10.180.5.3 (LF)	Push	--	262132
10.20.1.1			
10.180.5.5	2/1/1:0		
8193	Unknw		
10.180.5.3 (LF)	Push	--	262136
10.20.1.2			
10.180.5.5	2/1/1:0		
8193	Unknw		
10.180.5.3	Push	--	262131
10.20.1.3			
10.180.5.5	2/1/1:0		
8193	73731		
10.180.5.5	Pop	262126	--
10.20.1.5			
--	--		
8193	73731		
10.180.5.5 (UF)	Swap	262126	Stitched
10.20.1.5			
--	--		
8193	73732		
10.180.5.5	Pop	262124	--
10.20.1.6			
--	--		
8193	73732		
10.180.5.5 (UF)	Swap	262124	Stitched
10.20.1.6			
--	--		
8193	73731		
10.181.5.5 (BA)	Pop	262125	--
10.20.1.5			
--	--		
8193	73731		
10.181.5.5 (BA) (UF)	Swap	262125	Stitched
10.20.1.5			
--	--		
8193	73732		
10.181.5.5 (BA)	Pop	262123	--
10.20.1.6			
--	--		
8193	73732		
10.181.5.5 (BA) (UF)	Swap	262123	Stitched
10.20.1.6			
--	--		
-----			
No. of GRT Recursive with Generic IPv4 P2MP Active Bindings: 15			
=====			

## p2mp

### Syntax

```
p2mp p2mp-id identifier root ip-address [summary | detail] [egress-if port-id]  
p2mp p2mp-id identifier root ip-address [summary | detail] [egress-lsp tunnel-id]  
p2mp p2mp-id identifier root ip-address [summary | detail] [egress-nh ip-address]  
p2mp [family] [summary | detail] [egress-if port-id] [opaque-type opaque-type]  
p2mp [family] [summary | detail] [egress-lsp tunnel-id] [opaque-type opaque-type]  
p2mp [family] [summary | detail] [egress-nh ip-address] [opaque-type opaque-type]  
p2mp p2mp-id identifier root ip-address [rd rd] [summary | detail] [egress-if port-id] inner-root ip-address  
p2mp p2mp-id identifier root ip-address [rd rd] [summary | detail] [egress-lsp tunnel-id] inner-root ip-address  
p2mp p2mp-id identifier root ip-address [rd rd] [summary | detail] [egress-nh ip-address] inner-root ip-address  
p2mp source ip-address group mcast-address root ip-address [summary | detail] [egress-if port-id] inner-root ip-address  
p2mp source ip-address group mcast-address root ip-address [summary | detail] [egress-lsp tunnel-id] inner-root ip-address  
p2mp source ip-address group mcast-address root ip-address [rd rd] [summary | detail] [egress-if port-id]  
p2mp source ip-address group mcast-address root ip-address [rd rd] [summary | detail] [egress-lsp tunnel-id]  
p2mp source ip-address group mcast-address root ip-address [rd rd] [summary | detail] [egress-nh ip-address]  
p2mp p2mp-id identifier [rd rd] [family] [summary | detail] [innermost-root ip-address]  
p2mp source ip-address group mcast-address [family] [summary | detail] [innermost-root ip-address]
```

### Context

[\[Tree\]](#) (show>router>ldp>bindings>active p2mp)

### Full Context

```
show router ldp bindings active p2mp
```

### Description

This command displays LDP active P2MP bindings.

### Parameters

***identifier***

Specifies the P2MP ID.

**Values** 0 to 4294967295

***ip-address***

Specifies the IPv4 or IPv6 address.

**Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

***mcast-address***

Displays the P2MP group multicast address bindings.

**Values** ipv4-mcast-addr, ipv6-mcast-addr

***rd***

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val* | *2byte-asnumber:ext-comm-val* | *4byte-asnumber:comm-val*

***family***

Specifies the address family.

**Values** ipv4, ipv6

***port-id***

Specifies the port ID.

**Values**

	<i>slot[/mda[/port]]</i> or <i>slot/mda/port</i> [.channel]	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-sat-id	<b>esat-id</b> [/slot[ <b>u</b> ]port]	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
	<i>u</i>	keyword for up-link port
tdm-sat-id	<b>tsat-id</b> [/slot[ <b>u</b> ]port.channel]	
	<b>tsat</b>	keyword
	<i>id</i>	1 to 20

	<b>u</b>	keyword for up-link port
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a to b

### ***tunnel-id***

Specifies the tunnel ID.

**Values** 0 to 4294967295

### ***opaque-type***

Specifies the multi-point opaque value element type.

**Values** generic, ssm, vpn-ssm, recursive-ssm, vpn-recursive, grt-recursive

## **Platforms**

All

## **18.2 p2mp-candidate-path**

### **p2mp-candidate-path**

#### **Syntax**

**p2mp-candidate-path** [*path-name*] [**oper** { **up** | **down**}] [**in-use**]

#### **Context**

**[Tree]** (show>router>p2mp-sr-tree>p2mp-policy p2mp-candidate-path)

#### **Full Context**

show router p2mp-sr-tree p2mp-policy p2mp-candidate-path

#### **Description**

This command displays candidate path information.

#### **Parameters**

##### ***path-name***

Specifies the candidate path name, up to 32 characters.

##### **oper up**

Displays the candidate paths with operational status up.

**oper down**

Displays the candidate paths with operational status down.

**in-use**

Displays candidate paths that are in use.

**Platforms**

All

## 18.3 p2mp-info

### p2mp-info

**Syntax**

**p2mp-info** [**type** {**originate** | **transit** | **terminate**}] [**s2l-endpoint** *ip-address*]

**Context**

[\[Tree\]](#) (show>router>mpls p2mp-info)

**Full Context**

show router mpls p2mp-info

**Description**

This command displays P2MP cross-connect information.

**Parameters**

**type**

Specifies the P2MP type.

- Values**
- originate** — Displays the static LSPs that originate at this virtual router.
  - transit** — Displays the static LSPs that transit through this virtual router.
  - terminate** — Displays the static LSPs that terminate at this virtual router.

**Platforms**

All

**Output**

The following output is an example of MPLS p2mp information.

## Output Example

```
*A:Dut-C# show router mpls p2mp-info
=====
MPLS P2MP Cross Connect Information
=====
-----
S2L ipmsi-4000-73729::path_ipmsi
-----
Source IP Address   : 10.20.1.1           Tunnel ID   : 61441
P2MP ID             : 4000                Lsp ID     : 29696
S2L Name            : ipmsi-4000-73729::pa* To       : 10.20.1.3
In Interface        : 1/1/1              In Label    : 262129
Num. of S2ls        : 1
-----
S2L ipmsi-65535-73730::path_ipmsi
-----
Source IP Address   : 10.20.1.1           Tunnel ID   : 61442
P2MP ID             : 65535                Lsp ID     : 30208
S2L Name            : ipmsi-65535-73730::p* To       : 10.20.1.3
In Interface        : 1/1/1              In Label    : 262128
Num. of S2ls        : 1
-----
S2L ipmsi-1001-73728::path_ipmsi
-----
Source IP Address   : 10.20.1.1           Tunnel ID   : 61440
P2MP ID             : 1001                 Lsp ID     : 35840
S2L Name            : ipmsi-1001-73728::pa* To       : 10.20.1.3
In Interface        : 1/1/1              In Label    : 262127
Num. of S2ls        : 1
-----
S2L ipmsi-1001-73732::path_ipmsi
-----
Source IP Address   : 10.20.1.2           Tunnel ID   : 64944
P2MP ID             : 1001                 Lsp ID     : 34816
S2L Name            : ipmsi-1001-73732::pa* To       : 10.20.1.3
In Interface        : 1/1/2              In Label    : 262114
Num. of S2ls        : 1
-----
S2L ipmsi-4000-73729::path_ipmsi
-----
Source IP Address   : 10.20.1.3           Tunnel ID   : 61441
P2MP ID             : 4000                Lsp ID     : 16384
S2L Name            : ipmsi-4000-73729::pa* To       : 10.20.1.1
Out Interface       : 1/1/1              Out Label   : 262131
Num. of S2ls        : 1
-----
S2L ipmsi-4000-73729::path_ipmsi
-----
Source IP Address   : 10.20.1.3           Tunnel ID   : 61441
P2MP ID             : 4000                Lsp ID     : 16384
S2L Name            : ipmsi-4000-73729::pa* To       : 10.20.1.4
Out Interface       : 2/1/1              Out Label   : 262121
Num. of S2ls        : 1
-----
S2L ipmsi-1001-73728::path_ipmsi
-----
Source IP Address   : 10.20.1.3           Tunnel ID   : 61440
P2MP ID             : 1001                 Lsp ID     : 22016
S2L Name            : ipmsi-1001-73728::pa* To       : 10.20.1.1
Out Interface       : 1/1/1              Out Label   : 262129
Num. of S2ls        : 1
-----
S2L ipmsi-1001-73728::path_ipmsi
```



```

-----
Source IP Address   : 10.20.1.3           Tunnel ID    : 61440
P2MP ID            : 1001                Lsp ID      : 22016
S2L Name           : ipmsi-1001-73728::pa* To        : 10.20.1.2
Out Interface      : 1/1/2                Out Label   : 262115
Num. of S2ls      : 1
-----
S2L ipmsi-1001-73728::path_ipmsi
-----
Source IP Address   : 10.20.1.3           Tunnel ID    : 61440
P2MP ID            : 1001                Lsp ID      : 22016
S2L Name           : ipmsi-1001-73728::pa* To        : 10.20.1.4
Out Interface      : 2/1/1                Out Label   : 262108
Num. of S2ls      : 2
-----
S2L ipmsi-1001-73728::path_ipmsi
-----
Source IP Address   : 10.20.1.3           Tunnel ID    : 61440
P2MP ID            : 1001                Lsp ID      : 22016
S2L Name           : ipmsi-1001-73728::pa* To        : 10.20.1.5
Out Interface      : 2/1/1                Out Label   : 262108
Num. of S2ls      : 2
-----
S2L ipmsi-65535-73730::path_ipmsi
-----
Source IP Address   : 10.20.1.3           Tunnel ID    : 61442
P2MP ID            : 65535                Lsp ID      : 46592
S2L Name           : ipmsi-65535-73730::p* To        : 10.20.1.1
Out Interface      : 1/1/1                Out Label   : 262130
Num. of S2ls      : 1
-----
S2L ipmsi-65535-73730::path_ipmsi
-----
Source IP Address   : 10.20.1.3           Tunnel ID    : 61442
P2MP ID            : 65535                Lsp ID      : 46592
S2L Name           : ipmsi-65535-73730::p* To        : 10.20.1.4
Out Interface      : 2/1/1                Out Label   : 262109
Num. of S2ls      : 1
-----
P2MP Cross-connect instances : 12
    
```

## 18.4 p2mp-lsp

### p2mp-lsp

#### Syntax

**p2mp-lsp** [*lsp-name*] [**detail**]

**p2mp-lsp** [*lsp-name*] **p2mp-instance** [*p2mp-instance-name*] [**mbb**]

**p2mp-lsp** [*lsp-name*] **p2mp-instance** [*p2mp-instance-name*] **s2l** [*s2l-name* [**to** *s2l-to-address*]] [**status** {**up** | **down**}] [**detail**]

**p2mp-lsp** [*lsp-name*] **p2mp-instance** [*p2mp-instance-name*] **s2l** [*s2l-name* [**to** *s2l-to-address*]] [**mbb**]

**p2mp-lsp using-template** [**lsp-template** *template-name*] [**detail**]

**p2mp-lsp** [*lsp-name*] **p2mp-instance** [*p2mp-instance-name*] **s2l** [*s2l-name*] [**detail**] [**dns**]

## Context

[\[Tree\]](#) (show>router>mpls p2mp-lsp)

## Full Context

```
show router mpls p2mp-lsp
```

## Description

This command displays MPLS P2MP LSP information.

## Parameters

### *lsp-name*

Specifies the LSP name, up to 64 characters, used in the path.

### **detail**

Keyword used to display detailed information.

### **p2mp-instance** [*p2mp-instance-name*]

Specifies the administrative name for the P2MP instance which must be unique within a virtual router instance.

### **mbb**

Keyword used to display make-before-break (MBB) information.

### **s2l**

Keyword used to display the source-to-leaf (S2L) name.

### **to s2l-to-address**

Keyword used to display the IP address of the destination address of the S2L sub-LSP.

### **status**

Keyword used to display the status of the P2MP LSP.

- Values**
- up — Displays the total time that this S2L has been operational.
  - down — Displays the total time that this S2L has not been operational.

### **dns**

Keyword used to display reverse DNS resolution of actual and explicit hop information.

## Platforms

All

## Output

The following output is an example of MPLS P2MP LSP detailed DNS information, and [Table 351: Output fields: MPLS P2MP LSP detailed DNS](#) describes the output fields.

### Output Example

```
show router mpls p2mp-lsp p2mp-instance s2l detail dns
```

```
=====
MPLS LSP S2L (Detail)
=====
```

```

Legend :
  @ - Detour Available          # - Detour In Use
  b - Bandwidth Protected      n - Node Protected
  S - Strict                    L - Loose
  A - ABR
  s - Soft Preemption
=====
LSP Name       : p2mp1
S2L LSP ID    : 40960
P2MP ID       : 888           S2L Grp Id       : 1
Admin State   : Up           Oper State      : Up
S2L State:    : Active
S2L Name      : S2L1
To            : 10.20.1.6
S2L Admin     : Up           S2L Oper       : Up
OutInterface  : 2/2/1        Out Label      : 524286
S2L Up Time   : 0d 00:01:18 S2L Dn Time    : 0d 00:00:00
RetryAttempt  : 0           NextRetryIn    : 0 sec
S2L Trans     : 1           CSPF Queries   : 0
Failure Code  : noError     Failure Node    : n/a
Inter-area    : False
ExplicitHops  :
    10.20.1.4(S)
        Dut-D.nokia.com
-> 10.20.1.6(S)
        Dut-F.nokia.com

Actual Hops   :
    10.10.22.3(10.20.1.3)   Record Label    : N/A
    toD.Dut-C.nokia.com
    (toC.system.nokia.com)
-> 10.10.22.4(10.20.1.4)   Record Label    : 524286
    toC.Dut-D.nokia.com
    (Dut-D.nokia.com)
-> 10.180.9.6(10.20.1.6)   Record Label    : 524286
    10.180.9.6
    (Dut-F.nokia.com)
LastResignal : n/a
-----
LSP Name       : p2mp1
S2L LSP ID    : 40960
P2MP ID       : 888           S2L Grp Id       : 2
Admin State   : Up           Oper State      : Up
S2L State:    : Active
S2L Name      : S2L2
To            : 10.20.1.5
S2L Admin     : Up           S2L Oper       : Up
OutInterface  : 2/2/1        Out Label      : 524286
S2L Up Time   : 0d 00:01:20 S2L Dn Time    : 0d 00:00:00
RetryAttempt  : 0           NextRetryIn    : 0 sec
S2L Trans     : 1           CSPF Queries   : 0
Failure Code  : noError     Failure Node    : n/a
Inter-area    : False
ExplicitHops  :
    10.20.1.4(S)
        Dut-D.nokia.com
-> 10.20.1.6(S)
        Dut-F.nokia.com
-> 10.20.1.5(S)
        Dut-E.nokia.com

Actual Hops   :
    10.10.22.3(10.20.1.3)   Record Label    : N/A
    toD.Dut-C.nokia.com
    (Dut-C.system.nokia.com)
-> 10.10.22.4(10.20.1.4)   Record Label    : 524286
    
```

```

toC.Dut-D.nokia.com
(Dut-D.nokia.com)
-> 10.180.9.6(10.20.1.6)          Record Label      : 524286
10.180.9.6
(Dut-F.nokia.com)
-> 10.180.10.5(10.20.1.5)       Record Label      : 524286
10.180.10.5
(Dut-E.nokia.com)
LastResignal      : n/a
-----
LSP Name          : p2mp1
S2L LSP ID       : 40960
P2MP ID          : 888          S2L Grp Id       : 3
Admin State      : Up          Oper State       : Up
S2L State:       : Active
S2L Name         : S2L3
To               : 10.20.1.2
S2L Admin        : Up          S2L Oper         : Up
OutInterface     : 2/2/1       Out Label        : 524286
S2L Up Time      : 0d 00:01:22 S2L Dn Time     : 0d 00:00:00
RetryAttempt     : 0          NextRetryIn     : 0 sec
S2L Trans        : 1          CSPF Queries    : 0
Failure Code     : noError    Failure Node     : n/a
Inter-area       : False
ExplicitHops     :
                  10.20.1.4(S)
                  Dut-D.nokia.com
-> 10.20.1.2(S)
                  Dut-B.nokia.com
Actual Hops      :
  10.10.22.3(10.20.1.3)       Record Label      : N/A
  toD.Dut-C.nokia.com
  (toC.system.nokia.com)
-> 10.10.22.4(10.20.1.4)       Record Label      : 524286
  toC.Dut-D.nokia.com
  (Dut-D.nokia.com)
-> 10.180.4.2(10.20.1.2)       Record Label      : 524287
  10.180.4.2
  (Dut-B.nokia.com)
LastResignal     : n/a
-----
LSP Name          : p2mp1
S2L LSP ID       : 40960
P2MP ID          : 888          S2L Grp Id       : 4
Admin State      : Up          Oper State       : Up
S2L State:       : Active
S2L Name         : S2L4
To               : 10.20.1.1
S2L Admin        : Up          S2L Oper         : Up
OutInterface     : 1/1/2:1     Out Label        : 524286
S2L Up Time      : 0d 00:01:41 S2L Dn Time     : 0d 00:00:00
RetryAttempt     : 0          NextRetryIn     : 0 sec
S2L Trans        : 1          CSPF Queries    : 0
Failure Code     : noError    Failure Node     : n/a
Inter-area       : False
ExplicitHops     :
                  10.181.3.2(S)
                  10.181.3.2
-> 10.181.1.1(S)
                  10.181.1.1
Actual Hops      :
  10.181.3.3(10.20.1.3)       Record Label      : N/A
  10.181.3.3
  (Dut-C.system.nokia.com)
    
```

```

-> 10.181.3.2(10.20.1.2)          Record Label      : 524286
    10.181.3.2
    (Dut-B.nokia.com)
-> 10.181.1.1(10.20.1.1)        Record Label      : 524286
    10.181.1.1
    (Dut-A.nokia.com)
LastResignal      : n/a
    
```

Table 351: Output fields: MPLS P2MP LSP detailed DNS

Label	Description
LSP Name	Displays the LSP name
S2L LSP ID	Displays the S2L LSP ID
P2MP ID	Displays the P2MP ID
S2L Grp Id	Displays the S2L group ID
Admin State	Displays the administrative state
Oper State	Displays the operational state
S2L State	Displays the S2L state
S2L Name	Displays the S2L name
To	Displays the to destination IP address
S2L Admin	Displays the S2L administrative state
S2L Oper	Displays the S2L operational state
Out Interface	Displays the outing interface port
Out Label	Displays the out label value
S2L Up Time	Displays the S2L up time
S2L Dn Time	Displays the S2L down time
RetryAttempt	Displays the retry attemp value
NextRetryIn	Displays the next retry time value
S2L Trans	Displays the S2L trans value
CSPF Queries	Displays the CSPF queries value
Failure Code	Displays the failure code
Failure Node	Displays the failure node
Inter-area	Displays the inter area status

Label	Description
ExplicitHops	Displays the explicit hops
Actual Hops	Displays the actual hops
Record Label	Displays the record label
LastResignal	Displays the resignal time

The following output is an example of MPLS P2MP LSP information.

### Output Example

```
*A:Dut-C# show router mpls p2mp-lsp
- p2mp-lsp [<lsp-name>] [detail]
- p2mp-lsp [<lsp-name>] p2mp-instance [<p2mp-instance-name>] [mbb]
- p2mp-lsp [<lsp-name>] p2mp-instance [<p2mp-instance-name>] s2l [<s2l-name>]
  [to <s2l-to-address>]][status {up | down}] [detail]
- p2mp-lsp [<lsp-name>] p2mp-instance [<p2mp-instance-name>] s2l [<s2l-name>]
  [to <s2l-to-address>]] <mbb>
- p2mp-lsp using-template [lsp-template <template-name>] [detail]
```

```
<lsp-name>          : [64 chars max] - accepts * as wildcard char
<p2mp-instance>    : keyword
<p2mp-instance-name> : [max 32 chars]
<s2l>              : keyword
<s2l-name>         : [max 32 chars]
<up | down>       : keywords
<detail>          : keyword
<mbb>             : keyword
<s2l-to-address>  : [a.b.c.d]
<using-template> : keyword
<lsp-template>   : [32 chars max]
```

```
*A:Dut-C# show router mpls p2mp-lsp
```

```
=====
MPLS P2MP LSPs (Originating)
=====
```

LSP Name	Adm	Opr
ipmsi-1001-73728	Up	Up
ipmsi-4000-73729	Up	Up
ipmsi-65535-73730	Up	Up

```
-----
LSPs : 3
=====
```

```
*A:Dut-C# show router mpls p2mp-lsp detail
```

```
=====
MPLS P2MP LSPs (Originating) (Detail)
=====
```

```
-----
Type : Originating
-----
```

LSP Name	: ipmsi-1001-73728	LSP Tunnel ID	: 61440
LSP Type	: P2mpAutoLsp		
From	: 10.20.1.3		
Adm State	: Up	Oper State	: Up
LSP Up Time	: 6d 21:08:37	LSP Down Time	: 0d 00:00:00
Transitions	: 1	Path Changes	: 1

```

Retry Limit : 0
Signaling : RSVP
Hop Limit : 255
Adaptive : Enabled
FastReroute : Enabled
FR Method : Facility
FR Bandwidth: 0 Mbps
FR Object : Enabled
CSPF : Enabled
Metric : Disabled
Include Grps:
None
Least Fill : Disabled

Retry Timer : 30 sec
Resv. Style : SE
Negotiated MTU : n/a
ClassType : 0
Oper FR : Enabled
FR Hop Limit : 16
FR Node Protect: Disabled

ADSPEC : Disabled
Use TE metric : Disabled
Exclude Grps :
None

Auto BW : Disabled
LdpOverRsvp : Disabled
IGP Shortcut: Disabled
BGPTransTun : Disabled
Oper Metric : Disabled
Prop Adm Grp: Disabled
P2MPInstance: 1001
S2L Cfg Cou*: 4
S2L-Name : path_ipmsi
S2L-Name : path_ipmsi
S2L-Name : path_ipmsi
S2L-Name : path_ipmsi

VprnAutoBind : Disabled
BGP Shortcut : Disabled

CSPFFirstLoose : Disabled
P2MP-Inst-type : Primary
S2L Oper Count*: 4
To : 10.20.1.1
To : 10.20.1.2
To : 10.20.1.4
To : 10.20.1.5
-----
Type : Originating
-----
LSP Name : ipmsi-4000-73729
LSP Type : P2mpAutoLsp
From : 10.20.1.3
Adm State : Up
LSP Up Time : 6d 21:08:38
Transitions : 1
Retry Limit : 0
Signaling : RSVP
Hop Limit : 255
Adaptive : Enabled
FastReroute : Enabled
FR Method : Facility
FR Bandwidth: 0 Mbps
FR Object : Enabled
CSPF : Enabled
Metric : Disabled
Include Grps:
None
Least Fill : Disabled

LSP Tunnel ID : 61441
Oper State : Up
LSP Down Time : 0d 00:00:00
Path Changes : 1
Retry Timer : 30 sec
Resv. Style : SE
Negotiated MTU : n/a
ClassType : 0
Oper FR : Enabled
FR Hop Limit : 16
FR Node Protect: Disabled

ADSPEC : Disabled
Use TE metric : Disabled
Exclude Grps :
None

Auto BW : Disabled
LdpOverRsvp : Disabled
IGP Shortcut: Disabled
BGPTransTun : Disabled
Oper Metric : Disabled
Prop Adm Grp: Disabled

VprnAutoBind : Disabled
BGP Shortcut : Disabled

CSPFFirstLoose : Disabled

P2MPInstance: 4000
S2L Cfg Cou*: 2
S2L-Name : path_ipmsi
S2L-Name : path_ipmsi

P2MP-Inst-type : Primary
S2L Oper Count*: 2
To : 10.20.1.1
To : 10.20.1.4
-----
Type : Originating
-----
LSP Name : ipmsi-65535-73730
    
```

```

LSP Type      : P2mpAutoLsp          LSP Tunnel ID   : 61442
From         : 10.20.1.3
Adm State    : Up
LSP Up Time  : 6d 21:08:39
Transitions  : 1
Retry Limit  : 0
Signaling    : RSVP
Hop Limit    : 255
Adaptive     : Enabled
FastReroute  : Enabled
FR Method    : Facility
FR Bandwidth : 0 Mbps
FR Object    : Enabled
CSPF         : Enabled
Metric       : Disabled
Include Grps :
None
Least Fill   : Disabled

Auto BW      : Disabled
LdpOverRsvp : Disabled
IGP Shortcut : Disabled
BGPTransTun : Disabled
Oper Metric  : Disabled
Prop Adm Grp : Disabled

P2MPIInstance: 65535
S2L Cfg Cou* : 2
S2L-Name     : path_ipmsi
S2L-Name     : path_ipmsi

LSP Tunnel ID : 61442
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 1
Retry Timer   : 30 sec
Resv. Style   : SE
Negotiated MTU : n/a
ClassType     : 0
Oper FR       : Enabled
FR Hop Limit  : 16
FR Node Protect : Disabled

ADSPEC        : Disabled
Use TE metric : Disabled
Exclude Grps  :
None

VprnAutoBind : Disabled
BGP Shortcut  : Disabled

CSPFFirstLoose : Disabled

P2MP-Inst-type : Primary
S2L Oper Count* : 2
To              : 10.20.1.1
To              : 10.20.1.4
    
```

\* indicates that the corresponding row element may have been truncated.  
 \*A:Dut-C#

\*A:sim1>config>router>mpls>lsp\$ show router mpls p2mp-lsp p2mp-instance s2l detail

```

=====
MPLS LSP S2L (Detail)
=====
Legend :
  @ - Detour Available          # - Detour In Use
  b - Bandwidth Protected      n - Node Protected
  S - Strict                    L - Loose
  s - Soft Preemption

=====
-----
LSP 1 S2L 1
-----
LSP Name      : 1                S2L LSP ID    : 26624
P2MP ID       : 0                S2L Grp Id    : 0
Adm State     : Up               Oper State    : Down
S2L State     : Inactive
S2L Name      : 1                To            : 10.20.1.3
S2L Admin     : Up               S2L Oper     : Down
OutInterface  : n/a              Out Label     : n/a
S2L Up Time   : 0d 00:00:00      S2L Dn Time  : 0d 00:00:01
RetryAttempt  : 0                NextRetryIn  : 9 sec (Fast)
S2L Trans     : 8                CSPF Queries : 4
Failure Code  : noError          Failure Node  : n/a
ExplicitHops  :
  10.20.1.2(S)
Actual Hops   :
  No Hops Specified
ComputedHops  :
    
```



```

    No Hops Specified
    LastResignal: n/a
    =====
    show router mpls p2mp-lsp p2mp-instance s2l detail
    =====
    LSP 2 S2L 2
    -----
    LSP Name      : 2                      S2l LSP ID   : 52230
    P2MP ID      : 0                      S2l Grp Id   : 2
    Adm State    : Up                     Oper State   : Up
    S2l State    : Active                  :
    S2l Name     : 2                      To           : 10.20.1.3
    S2l Admin    : Up                     S2l Oper    : Up
    OutInterface: 1/1/1                   Out Label    : 131071
    S2l Up Time  : 0d 00:04:43            S2l Dn Time  : 0d 00:00:00
    RetryAttempt: 0                       NextRetryIn  : 0 sec
    S2l Trans    : 5                       CSPF Queries: 21
    Failure Code: tunnelLocallyRepaired   Failure Node: 10.20.1.2
    ExplicitHops:
        10.20.1.2(S)
    Actual Hops :
        10.10.1.1(10.20.1.1)             Record Label : N/A
        -> 10.10.1.2(10.20.1.2) @ #      Record Label : 131071
        -> 10.10.6.3(10.20.1.3)         Record Label : 131068
    ComputedHops:
        10.10.1.1(S)      -> 10.10.1.2(S)      -> 10.10.5.3(S)
    LastResignal: n/a
    In Prog MBB :
    MBB Type    : GlobalRevert             NextRetryIn  : n/a
    Timeout In  : 23 sec
    Started At  : 06/29/2011 11:06:09      RetryAttempt: 7
    FailureCode: noError                   Failure Node: n/a
    =====

    *A:Dut-C>>config>router>mpls>lsp$ /show router mpls lsp path detail
    =====
    MPLS LSP Path (Detail)
    =====
    Legend :
    @ - Detour Available          # - Detour In Use
    b - Bandwidth Protected      n - Node Protected
    s - Soft Preemption
    S - Strict                    L - Loose
    =====
    LSP 1 Path 1
    -----
    LSP Name      : 1                      Path LSP ID  : 56320
    From         : 10.20.1.3              To           : 10.10.1.1
    Adm State    : Up                     Oper State   : Up
    Path Name    : 1                      Path Type    : Primary
    Path Admin   : Up                     Path Oper    : Up
    OutInterface: 1/1/1                   Out Label    : 131071
    Path Up Time : 0d 00:03:09            Path Dn Time : 0d 00:00:00
    Retry Limit  : 0                       Retry Timer  : 30 sec
    RetryAttempt: 0                       NextRetryIn : 0 sec
    SetupPriori*: 7                       Hold Priori*: 0
    Preference   : n/a
    Bandwidth    : No Reservation          Oper Bw      : 0 Mbps
    Hop Limit    : 255                    Class Type   : 0
    
```

```

Backup CT      : None
MainCT Retry: n/a
  Rem         :
Oper CT       : 0
Record Route: Record
Oper MTU     : 1496
Adaptive     : Enabled
Include Grps:
None
Path Trans   : 1
Failure Code: badNode

MainCT Retry: 0
  Limit      :
Record Label: Record
Neg MTU     : 1496
Oper Metric : 1000
Exclude Grps:
None
CSPF Queries: 3
Failure Node: 10.20.1.3

Oper Values :
Setup Prior*: 7
Record Route: Record
Hop Limit   : 255
Adspec     : Disabled
CSPF       : Enabled
Least Fill : Disabled
Prop Adm Grp: Disabled
Include Grps:
None

Hold Priori*: 0
Record Label: Record

CSPFToFirst*: Disabled
FR Node Pro*: Disabled

Exclude Grps:
None

ExplicitHops:
  No Hops Specified
Actual Hops :
  10.10.2.3(10.20.1.3) @ #
  -> 10.10.1.1(10.20.1.1)
ComputedHops:
  10.10.2.3(S)      -> 10.10.2.1(S)
ResigEligib*: False
LastResignal: n/a
In Prog MBB :
  MBB Type   : GlobalRevert
  Timeout In : 22 sec
  Started At : 08/26/2011 23:59:29
  FailureCode: noError
  Signaled BW: 0 Mbps

CSPF Metric : 1000
NextRetryIn : 0 sec
RetryAttempt: 2
Failure Node: n/a
    
```

=====

\* indicates that the corresponding row element may have been truncated.

show router mpls p2mp-lsp p2mp-instance s2l detail

-----

LSP 2 S2L 2

-----

```

LSP Name      : 2
P2MP ID      : 0
Adm State    : Up
S2l State:    : Inactive
S2L Name     : 2
S2l Admin    : Up
OutInterface: n/a
S2L Up Time  : 0d 00:00:00
RetryAttempt: 1
Timeout In   : 21 sec
S2L Trans    : 6
Failure Code: noError
ExplicitHops:
  10.20.1.2(S)
Actual Hops :
  No Hops Specified
LastResignal: n/a

S2l LSP ID   : 52230
S2l Grp Id   : 4
Oper State   : Down
To          : 10.20.1.3
S2l Oper    : In Progress
Out Label    : n/a
S2L Dn Time  : 0d 00:00:20
NextRetryIn : n/a

CSPF Queries: 27
Failure Node: n/a
    
```

```

*A:Dut-C# show router mpls p2mp-lsp
=====
MPLS P2MP LSPs (Originating)
=====
LSP Name                                     Adm   Opr
-----
ipmsi-1001-73728                             Up    Up
ipmsi-4000-73729                             Up    Up
ipmsi-65535-73730                           Up    Up
-----
LSPs : 3
=====

*A:Dut-C# show router mpls p2mp-lsp detail
=====
MPLS P2MP LSPs (Originating) (Detail)
=====
Type : Originating
-----
LSP Name      : ipmsi-1001-73728
LSP Type      : P2mpAutoLsp
From          : 10.20.1.3
Adm State     : Up
LSP Up Time   : 6d 21:08:37
Transitions   : 1
Retry Limit   : 0
Signaling     : RSVP
Hop Limit     : 255
Adaptive      : Enabled
FastReroute   : Enabled
FR Method     : Facility
FR Bandwidth  : 0 Mbps
FR Object     : Enabled
CSPF          : Enabled
Metric        : Disabled
Include Grps  :
None
Least Fill   : Disabled
Auto BW      : Disabled
LdpOverRsvp  : Disabled
IGP Shortcut  : Disabled
BGPTransTun  : Disabled
Oper Metric   : Disabled
Prop Adm Grp : Disabled
P2MPInstance : 1001
S2L Cfg Cou* : 4
S2L-Name     : path_ipmsi
S2L-Name     : path_ipmsi
S2L-Name     : path_ipmsi
S2L-Name     : path_ipmsi
LSP Tunnel ID : 61440
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 1
Retry Timer   : 30 sec
Resv. Style   : SE
Negotiated MTU : n/a
ClassType     : 0
Oper FR       : Enabled
FR Hop Limit  : 16
FR Node Protect : Disabled
ADSPEC        : Disabled
Use TE metric : Disabled
Exclude Grps  :
None
VprnAutoBind : Disabled
BGP Shortcut  : Disabled
CSPFFirstLoose : Disabled
P2MP-Inst-type : Primary
S2L Oper Count* : 4
To            : 10.20.1.1
To            : 10.20.1.2
To            : 10.20.1.4
To            : 10.20.1.5
-----
Type : Originating
-----
LSP Name      : ipmsi-4000-73729
LSP Type      : P2mpAutoLsp
From          : 10.20.1.3
Adm State     : Up
LSP Up Time   : 6d 21:08:38
Transitions   : 1
Retry Limit   : 0
Signaling     : RSVP
LSP Tunnel ID : 61441
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 1
Retry Timer   : 30 sec
Resv. Style   : SE
  
```

```

Hop Limit      : 255
Adaptive       : Enabled
FastReroute    : Enabled
FR Method      : Facility
FR Bandwidth   : 0 Mbps
FR Object      : Enabled
CSPF           : Enabled
Metric         : Disabled
Include Grps   :
None
Least Fill     : Disabled
Auto BW        : Disabled
LdpOverRsvp    : Disabled
IGP Shortcut   : Disabled
BGPTransTun   : Disabled
Oper Metric    : Disabled
Prop Adm Grp   : Disabled
P2MPIInstance : 4000
S2L Cfg Cou*  : 2
S2L-Name      : path_ipmsi
S2L-Name      : path_ipmsi
Negotiated MTU : n/a
ClassType      : 0
Oper FR        : Enabled
FR Hop Limit   : 16
FR Node Protect : Disabled
ADSPEC         : Disabled
Use TE metric  : Disabled
Exclude Grps   :
None
VprnAutoBind  : Disabled
BGP Shortcut   : Disabled
CSPFFirstLoose : Disabled
P2MP-Inst-type : Primary
S2L Oper Count* : 2
To             : 10.20.1.1
To             : 10.20.1.4
-----
Type : Originating
-----
LSP Name       : ipmsi-65535-73730
LSP Type       : P2mpAutoLsp
From           : 10.20.1.3
Adm State      : Up
LSP Up Time    : 6d 21:08:39
Transitions    : 1
Retry Limit    : 0
Signaling      : RSVP
Hop Limit      : 255
Adaptive       : Enabled
FastReroute    : Enabled
FR Method      : Facility
FR Bandwidth   : 0 Mbps
FR Object      : Enabled
CSPF           : Enabled
Metric         : Disabled
Include Grps   :
None
Least Fill     : Disabled
Auto BW        : Disabled
LdpOverRsvp    : Disabled
IGP Shortcut   : Disabled
BGPTransTun   : Disabled
Oper Metric    : Disabled
Prop Adm Grp   : Disabled
P2MPIInstance : 65535
S2L Cfg Cou*  : 2
S2L-Name      : path_ipmsi
S2L-Name      : path_ipmsi
LSP Tunnel ID  : 61442
Oper State     : Up
LSP Down Time  : 0d 00:00:00
Path Changes   : 1
Retry Timer    : 30 sec
Resv. Style    : SE
Negotiated MTU : n/a
ClassType      : 0
Oper FR        : Enabled
FR Hop Limit   : 16
FR Node Protect : Disabled
ADSPEC         : Disabled
Use TE metric  : Disabled
Exclude Grps   :
None
VprnAutoBind  : Disabled
BGP Shortcut   : Disabled
CSPFFirstLoose : Disabled
P2MP-Inst-type : Primary
S2L Oper Count* : 2
To             : 10.20.1.1
To             : 10.20.1.4
=====
* indicates that the corresponding row element may have been truncated.

*A:Dut-C#
*A:sim1>config>router>mpls>lsp$ show router mpls p2mp-lsp p2mp-instance s2l detail
=====
MPLS LSP S2L (Detail)
=====
Legend :
@ - Detour Available # - Detour In Use
    
```

```

    b - Bandwidth Protected          n - Node Protected
    S - Strict                       L - Loose
    s - Soft Preemption

=====
-----
LSP 1 S2L 1
-----
LSP Name       : 1                S2l LSP ID   : 26624
P2MP ID       : 0                S2l Grp Id  : 0
Adm State     : Up                Oper State   : Down
S2l State    : Inactive
S2L Name      : 1                To           : 10.20.1.3
S2l Admin    : Up                S2l Oper    : Down
OutInterface  : n/a              Out Label    : n/a
S2L Up Time   : 0d 00:00:00      S2L Dn Time  : 0d 00:00:01
RetryAttempt  : 0                NextRetryIn  : 9 sec (Fast)
S2L Trans    : 8                CSPF Queries : 4
Failure Code  : noError          Failure Node  : n/a
ExplicitHops  :
    10.20.1.2(S)
Actual Hops   :
    No Hops Specified
ComputedHops  :
    No Hops Specified
LastResignal  : n/a
=====

A:ALU-25# show router mpls p2mp-lsp lsp_1
=====
MPLS LSPs (Originating)
=====
LSP Name           To/P2MP ID       Fastfail      Adm   Opr
                   Config
-----
lsp_1              18                Yes           Up    Up
-----
LSPs : 1
=====

A:ALU-25#

A:ALU-25# show router mpls p2mp-lsp Test_p2mp detail
=====
MPLS P2MP LSPs (Originating) (Detail)
=====
Type : Originating
-----
LSP Name       : lsp_1                LSP Tunnel ID : 1
From           : 10.10.1.1            P2MP ID       : 18
Adm State     : Up                    Oper State    : Down
LSP Up Time   : 0d 00:00:00          LSP Down Time : 0d 20:39:48
Transitions   : 0                    Path Changes  : 0
Retry Limit   : 0                    Retry Timer   : 30 sec
Signaling     : RSVP                  Resv. Style   : FF
Hop Limit     : 255                  Adaptive      : Enabled
FastReroute   : Disabled              Oper FR       : Disabled
FR Method     : Facility              FR Hop Limit  : 45
FR Bandwidth  : 0 Mbps                FR Node Protect: Disabled
FR Object     : Enabled
CSPF          : Disabled
Metric       : 1
Include Grps  :
None
ADSPEC        : Disabled
Use TE metric : Disabled
Exclude Grps  :
None
    
```

```

P2MPinstance:Test_p2mp                                p2mp-inst-type : primary
S2L Name      :Test-s2l1                               To              : 10.20.1.6
S2L Name      :Test-s2l2                               To              : 10.20.1.5
S2L Name      :Test-s2l3                               To              : 10.20.1.4
-----
A:ALU-25#

A:ALU-25# show router mpls p2mp-lsp Test_p2mp
=====
MPLS P2MP Instance (Originating)
=====
-----
Type : Originating
-----
LSP Name      : lsp_1                                  LSP Tunnel ID  : 1
P2MP ID       : 18                                    Path LSP ID    : 18
Adm State     : Up                                    Oper State     : Down

P2MPinstance:Test_p2mp                                p2mp-inst-type : primary
Inst Name     : lsp_1                                  P2MP Inst ID   : 1
Adm State     : Up                                    Oper State     : Down
Inst Up Time: 0d 00:00:00                             Inst Down Time : 0d 20:39:48
Hop Limit     : 255                                   Adaptive        : Enabled
Record Route: Record                                 Record Label   : Record
Include Grps:                                       Exclude Grps    :
None                                                  None
Bandwidth     : 0 Mbps                               Oper Bw        : 0 Mbps

S2L Name      :Test-s2l1                               To              : 10.20.1.6
S2L Name      :Test-s2l2                               To              : 10.20.1.5
S2L Name      :Test-s2l3                               To              : 10.20.1.4
-----
A:ALU-25#
    
```

Note that the normal output is in detailed format only. There is no separate detail format.

```

A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-name]
=====
MPLS P2MP Instance (Originating)
=====
-----
Type : Originating
-----
LSP Name      : lsp_1                                  LSP Tunnel ID  : 1
P2MP ID       : 18                                    Path LSP ID    : 18
Adm State     : Up                                    Oper State     : Down

P2MPinstance:Test_p2mp                                p2mp-inst-type : primary
Inst Name     : lsp_1                                  P2MP Inst ID   : 1
Adm State     : Up                                    Oper State     : Down
Inst Up Time: 0d 00:00:00                             Inst Down Time : 0d 20:39:48
Hop Limit     : 255                                   Adaptive        : Enabled
Record Route: Record                                 Record Label   : Record
Include Grps:                                       Exclude Grps    :
None                                                  None
Bandwidth     : 0 Mbps                               Oper Bw        : 0 Mbps

S2L Name      :Test-s2l1                               To              : 10.20.1.6
S2L Name      :Test-s2l2                               To              : 10.20.1.5
S2L Name      :Test-s2l3                               To              : 10.20.1.4
-----
    
```

```

A:ALU-52#

A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-
name] mbb
=====
MPLS P2MP Instance (Originating)
=====
-----
Type : Originating
-----
-----
LSP Name      : lsp_1                LSP Tunnel ID : 1
P2MP ID       : 18                   Path LSP ID   : 18
Adm State     : Up                   Oper State    : Down
-----
P2MPinstance:Test_p2mp              p2mp-inst-type : primary
Inst Name    : lsp_1                P2MP Inst ID  : 1
Adm State    : Up                   Oper State    : Down
Inst Up Time: 0d 00:00:00           Inst Down Time: 0d 20:39:48
Hop Limit    : 255                  Adaptive      : Enabled
Record Route: Record                Record Label  : Record
Include Grps:                        Exclude Grps  :
None                                             None
Bandwidth    : 0 Mbps                Oper Bw       : 0 Mbps
Last MBB     :
MBB type     :                       Mbb State    :
ended at    :                       Old Metric   :
In Prog MBB :
MBB type     :                       Next Retry In :
Started at  :                       Retry Attempt :
Failure code:                        Failure Node  :
-----
S2L Name     :Test-s2l1              To            : 10.20.1.6
S2L Admin    :                       S2L Oper     :
Failure code:                        Failure Node  : 10.12.1.1
-----
S2L Name     :Test-s2l1              To            : 10.20.1.6
S2L Admin    :                       S2L Oper     :
Failure code:                        Failure Node  : 10.12.1.1
-----
A:ALU-52#

A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-
name] s2l
[s2l-name]
=====
MPLS S2Ls (Originating)
=====
-----
S2L Name          To          Next Hop      Adm  Opr
-----
Test-s2l1         10.20.1.6   10.10.1.2    Up   Up
-----
LSPs : 1
=====
A:ALU-52#

A:ALU-52# show router mpls p2mp-lsp [p2mp-lsp-name] p2mp-instance [p2mp-inst-
name] s2l
[s2l-name] detail
=====
MPLS S2Ls (Originating) (Detail)
=====

```

```

-----
Type : Originating
-----
LSP Name      : lsp_1                LSP Tunnel ID  : 1
P2MP ID       : 18                  Path LSP ID    : 18
Adm State     : Up                  Oper State     : Down

P2MP Primary Instance:
Inst Name     : lsp_1                P2MP Inst ID   : 1
Adm State     : Up                  Oper State     : Down

S2L Name      : Test-s2l1           To              : 10.20.1.6
Adm State     : Up                  Oper State     : Down
OutInterface  : 1/1/1               Out Label      : 131071
S2L Up Time   : 0d 00:00:00         S2L Down Time  : 0d 20:39:48
Transitions   : 0                   Path Changes   : 0
Retry Limit   : 0                   Retry Timer    : 30 sec
RetryAttempt  : 0                   NextRetryIn    : 0 sec
Bandwidth     : No Reservation       Oper Bw        : 0 Mbps
Hop Limit     : 255                  Adaptive       : Enabled
Record Route  : Record              Record Label   : Record
Oper MTU      : 1496                 Neg MTU        : 1496
FastReroute   : Disabled            Oper FR        : Disabled
FR Method     : Facility             FR Hop Limit   : 45
FR Bandwidth  : 0 Mbps              FR Node Protect: Disabled
FR Object     : Enabled
CSPF          : Disabled            ADSPEC         : Disabled
Metric        : 1                   Use TE metric  : Disabled
Include Grps  :                      Exclude Grps   :
None
CSPF Queries : 9
Failure Code  : noError              Failure Node    : n/a
ExplicitHops  :                      No Hops Specified
Actual Hops   :                      10.10.1.1(10.20.1.1) @
-> 10.10.1.2(10.20.1.2)              Record Label   : N/A
ComputedHops  :                      Record Label   : 131071
10.10.1.1    -> 10.10.1.2
LastResignal : n/a                  CSPF Metric    : 1000
-----

```

A:ALU-52#

\*A:Dut-C# show router mpls p2mp-lsp "ipmsi-1-73752" detail

```

=====
MPLS P2MP LSPs (Originating) (Detail)
=====
-----

```

```

-----
Type : Originating
-----
LSP Name      : ipmsi-1-73752
LSP Type      : P2mpAutoLsp         LSP Tunnel ID  : 61445
From          : 10.20.1.3
Adm State     : Up                  Oper State     : Up
LSP Up Time   : 0d 00:00:51         LSP Down Time  : 0d 00:00:00
Transitions   : 3                   Path Changes   : 3
Retry Limit   : 0                   Retry Timer    : 30 sec
Signaling     : RSVP                Resv. Style    : SE
Hop Limit     : 255                  Negotiated MTU : n/a
Adaptive      : Enabled              ClassType      : 0
FastReroute   : Enabled            Oper FR        : Enabled
FR Method     : Facility             FR Hop Limit   : 16
-----

```



```

FR Node Pro*: Disabled          FR Prop Adm Grp: Disabled
FR Object   : Enabled
Egress Stats: Enabled          Egress Oper St*: Out-of-resource
CSPF        : Enabled          ADSPEC           : Disabled
Metric      : Disabled         Use TE metric    : Disabled
Include Grps:                   Exclude Grps     :
None                                                None
Least Fill  : Disabled

Auto BW     : Disabled
LdpOverRsvp: Enabled           VprnAutoBind    : Enabled
IGP Shortcut: Enabled          BGP Shortcut    : Enabled
IGP LFA     : Disabled         IGP Rel Metric  : Disabled
BGPTransTun: Enabled
Oper Metric : Disabled
Prop Adm Grp: Disabled

P2MPInstance: 1                P2MP-Inst-type : Primary
S2L Cfg Cou*: 4                S2L Oper Count*: 4
S2L-Name    : path_ipmsi       To              : 10.20.1.1
S2L-Name    : path_ipmsi       To              : 10.20.1.2
S2L-Name    : path_ipmsi       To              : 10.20.1.5
S2L-Name    : path_ipmsi       To              : 10.20.1.6
=====
    
```

## 18.5 p2mp-policy

### p2mp-policy

#### Syntax

**p2mp-policy** [**root-address** *ip-address*] [**tree-id** *tree-id*] [**candidate-path** *path-name*] [**detail**]

#### Context

**[Tree]** (show>router>p2mp-sr-tree>database p2mp-policy)

#### Full Context

show router p2mp-sr-tree database p2mp-policy

#### Description

This command displays the policy information present in the P2MP SR tree database.

#### Parameters

##### ***ip-address***

Specifies the root IPv4 address.

##### ***tree-id***

Specifies the P2MP SR tree ID.

**Values** 8193 to 16286

**path-name**

Specifies the candidate path name, up to 64 characters.

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of P2MP SR tree database policy information.

**Output Example**

```
A:node-2>show>router>p2mp-sr-tree>database# p2mp-policy
=====
P2MP Policies
=====
Policy-Name
RootAddr          TreeId          State          NumPaths
Tunnel            Active-Path
Candidate-Path    Origin          ASN            PLSP-ID
State             Create-Time     Desc
-----
test
100.0.0.103       9000            inService      1
73729             Primary-path
Primary-path      configuration    0              --
inService         0d 00:00:01    1
test-spmssi
100.0.0.103       9001            inService      1
0                 Primary-path
Primary-path      configuration    0              --
inService         0d 00:00:01    1
-----
Total P2MP Policies : 2
```

**p2mp-policy**

**Syntax**

**p2mp-policy** [*policy-name*] [**root-tree-id** *root-tree-id*] [**root-addr** *ip-address*]

**Context**

**[Tree]** (show>router>p2mp-sr-tree p2mp-policy)

**Full Context**

show router p2mp-sr-tree p2mp-policy

**Description**

This command displays the P2MP policy information.

## Parameters

### *policy-name*

Specifies the policy name, up to 256 characters.

### *root-tree-id*

Specifies the root tree ID.

**Values** 8193 to 16286

### *ip-address*

Specifies the root IPv4 address.

## Platforms

All

## Output

The following output is an example of P2MP SR tree policy information.

### Output Example

```
A:swsim103>show>router>p2mp-sr-tree# p2mp-policy
=====
P2MP Policies
=====
Name                               TreeId NumPaths      Adm/Opr
RootAddr                           SvcId
activeCPName                        ActInstId
-----
test                                9000   1              Up/Up
100.0.0.103                         70
Primary-path                         1
test-spmsi                           9001   1              Up/Up
100.0.0.103                         70
Primary-path                         1
-----
Total P2MP Policies : 2
=====
```

## 18.6 p2mp-sr-tree

### p2mp-sr-tree

#### Syntax

**p2mp-sr-tree**

#### Context

**[Tree]** (show>router p2mp-sr-tree)

### Full Context

show router p2mp-sr-tree

### Description

Commands in this context display P2MP SR tree information.

### Platforms

All

## 18.7 packet

packet

### Syntax

**packet** *packet-number*

### Context

[\[Tree\]](#) (show>test-oam>build-packet packet)

### Full Context

show test-oam build-packet packet

### Description

This command displays the OAM egress port finder information for a specific packet.

### Parameters

***packet-number***

Specifies the packet number.

**Values** 1 to 65535

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 18.8 packet-size

### packet-size

#### Syntax

**packet-size** *protocol* [**clear**]

#### Context

[\[Tree\]](#) (tools>dump>cflowd packet-size)

#### Full Context

tools dump cflowd packet-size

#### Description

This command displays packet size distribution for sampled IP traffic. Values are displayed in decimal format (1.0 = 100%, .500 = 50%). Separate statistics are maintained and shown for IPv4 and IPv6 traffic.

#### Platforms

All

#### Output

The following output is an example of cflowd packet size information.

#### Output Example

```
SR-12# tools dump cflowd packet-size ipv4
IP packet size distribution (801600 total packets):
 1-32  64  96 128 160 192 224 256 288 320 352 384 416 448 480
.000 .250 .000 .000 .010 .100 .500 .090 .000 .000 .000 .000 .000 .000 .000

 512 544 576 1024 1536 2048 2560 3072 3584 4096 4608 9000
.000 .000 .000 .050 .000 .000 .000 .000 .000 .000 .000 .000
```

## 18.9 parameters

### parameters

#### Syntax

**parameters**

#### Context

[\[Tree\]](#) (show>router>ldp parameters)

## Full Context

show router ldp parameters

## Description

This command displays configuration information about LDP parameters.

## Platforms

All

## Output

LDP Parameters Output

[Table 352: LDP Parameters Output Fields](#) describes the LDP parameters output fields.

*Table 352: LDP Parameters Output Fields*

Label	Description
Keepalive Timeout	The time interval (in s), that LDP waits before tearing down a session. If no LDP messages are exchanged during this time interval, the LDP session is torn down. Generally the value is configured to be 3 times the keepalive time (the time interval between successive LDP keepalive messages).
Timeout Factor	The value by which the keepalive timeout should be divided to give the keepalive time, for example, the time interval (in s), between LDP keepalive messages. LDP keepalive messages are sent to keep the LDP session from timing out when no other LDP traffic is being sent between the neighbors.
Hold Time	The hello time, also known as hold time. It is the time interval (in s), that LDP waits before declaring a neighbor to be down. Hello timeout is local to the system and is sent in the hello messages to a neighbor.
Hello Factor	The value by which the hello timeout should be divided to give the hello time, for example, the time interval (in s), between LDP hello messages. LDP uses hello messages to discover neighbors and to detect loss of connectivity with its neighbors.
Auth	Enabled — Authentication using MD5 message based digest protocol is enabled. Disabled — No authentication is used.
Admin Status	inService — The LDP is administratively enabled. outService — The LDP is administratively disabled.
Deaggregated FECs	False — LDP aggregates multiple prefixes into a single Forwarding Equivalence Class (FEC) and advertises a single label for the FEC. This value is only applicable to LDP interfaces and not for targeted sessions. True — LDP de-aggregates prefixes into multiple FECs.
Propagate Policy	The Propagate Policy value specifies whether the LSR should generate FECs and which FECs it should generate. system — LDP distributes label bindings only for the router's system IP address.

Label	Description
	interface — LDP distributes label bindings for all LDP interfaces. all — LDP distributes label bindings for all prefixes in the routing table. none — LDP does not distribute any label bindings.
Transport Address	interface — The interface's IP address is used to set up the LDP session between neighbors. If multiple interfaces exist between two neighbors, the 'interface' mode cannot be used because only one LDP session is actually set up between the two neighbors. system — The system's IP address is used to set up the LDP session between neighbors.
Label-Retention	liberal — All advertised label mappings are retained whether they are from a valid next hop or not. When the label distribution value is downstream unsolicited, a router may receive label bindings for the same destination for all its neighbors. Labels for the non-next hops for the FECs are retained in the software but not used. When a network topology change occurs where a non-nexthop becomes a true next hop, the label received earlier is then used. conservative — Advertised label mappings are retained only if they are used to forward packets; for example, if the label came from a valid next hop. Label bindings received from non-next hops for each FEC are discarded.
Control Mode	ordered — Label bindings are not distributed in response to a label request until a label binding has been received from the next hop for the destination. independent — Label bindings are distributed immediately in response to a label request even if a label binding has not yet been received from the next hop for the destination.
Route Preference	The route preference assigned to LDP routes. When multiple routes are available to a destination, the route with the lowest preference is used. This value is only applicable to LDP interfaces and not for targeted sessions.
Loop Detection	none — Loop detection is not supported on this router. This is the only valid value because Path Vector based loop detection is not supported. other — Loop detection is supported but by a method other than hopCount, path Vector, or hopCountAndPathVector. hopCount — Loop detection is supported by hop count only. pathVector — Loop detection is supported by path vector only. hopCountAndPathVector — Loop detection is supported by both path vector and hop count.
Keepalive Timeout	The factor used to derive the Keepalive interval.
Keepalive Factor	The time interval (in s), that LDP waits before tearing down the session.
Hold-Time	The time left before a neighbor is declared to be down.

Label	Description
Hello Factor	The value by which the hello timeout should be divided to give the hello time, for example, the time interval (in s), between LDP hello messages. LDP uses hello messages to discover neighbors and to detect loss of connectivity with its neighbors.
Auth	Enabled — Authentication using MD5 message based digest protocol is enabled. Disabled — No authentication is used.
Passive-Mode	true — LDP responds only when it gets a connect request from a peer and does not attempt to actively connect to its neighbors. false — LDP actively tries to connect to its peers.
Targeted-Sessions	true — Targeted sessions are enabled. false — Targeted sessions are disabled.

### Output Example

```
*A:Dut-A# show router ldp parameters
=====
LDP Parameters (IPv4 LSR ID 10.20.1.1:0)
              (IPv6 LSR ID 3ffe::a14:101[0])
=====
Graceful Restart Parameters
-----
Graceful Restart   : Disabled
Nbor Liveness Time : 120 sec           Max Recovery Time : 120
-----
IPv4 Interface Parameters
-----
Keepalive Timeout  : 30 sec           Keepalive Factor   : 3
Hold Time          : 15 sec           Hello Factor       : 3
Transport Address  : system
-----
IPv6 Interface Parameters
-----
Keepalive Timeout  : 30 sec           Keepalive Factor   : 3
Hold Time          : 15 sec           Hello Factor       : 3
Transport Address  : system
-----
Targeted Session Parameters
-----
Import Pfx Policies: None           Export Pfx Policies : None
Prefer Tunl-in-Tunl: Disabled       SDP Auto Targ Sess  : Enabled
-----
IPv4 Targeted Session Parameters
-----
Keepalive Timeout  : 30 sec           Keepalive Factor   : 3
Hold Time          : 15 sec           Hello Factor       : 3
Hello Reduction    : Disabled         Hello Reduction Fctr: 3
-----
IPv6 Targeted Session Parameters
-----
Keepalive Timeout  : 40 sec           Keepalive Factor   : 4
Hold Time          : 45 sec           Hello Factor       : 3
Hello Reduction    : Disabled         Hello Reduction Fctr: 3
=====
```



```
*A:Dut - A#
```

## 18.10 partition

```
partition
```

### Syntax

```
partition summary
```

### Context

[\[Tree\]](#) (show>app-assure>group partition)

### Full Context

```
show application-assurance group partition
```

### Description

This command displays partition information.

### Parameters

**summary**

Displays partition summary information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 18.11 passive-dns

```
passive-dns
```

### Syntax

```
passive-dns
```

### Context

[\[Tree\]](#) (tools>dump>app-assure>group>ipassist passive-dns)

### Full Context

```
tools dump application-assurance group ip-identification-assist passive-dns
```

## Description

Commands in this context display passive DNS monitoring statistics related to IP identification assist for top applications using IP addresses learned by passive monitoring of DNS traffic.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 18.12 password-options

### password-options

## Syntax

**password-options**

## Context

[\[Tree\]](#) (show>system>security password-options)

## Full Context

show system security password-options

## Description

This command displays configured password options.

## Platforms

All

## Output

The following output is an example of password options information, and [Table 353: Show Password Options Output Fields](#) describes the output fields.

## Output Example

```
A:ALA-7# show system security password-options
=====
Password Options
=====
Password aging in days                : none
Time required between password changes : 0d 00:10:00

Number of invalid attempts permitted per login : 3
Time in minutes per login attempt           : 5
Lockout period (when threshold breached)     : 10
Authentication order                       : radius tacplus local
User password history length                : disabled
Password hashing                            : bcrypt
Accepted password length                    : 6..56 characters
Credits for each character type              : none
Required character types                    : none
```

```

Minimum number different character types      : 0
Required distance with previous password    : 5
Allow consecutively repeating a character   : always
Allow passwords containing username         : yes
Palindrome allowed                          : no
=====
A:ALA-7#
    
```

Table 353: Show Password Options Output Fields

Label	Description
Password aging in days	Displays the number of days a user password is valid before the user must change their password.
Time required between password changes	Displays the time interval between changed passwords.
Number of invalid attempts permitted per login	Displays the number of unsuccessful login attempts allowed for the specified <b>time</b> .
Time in minutes per login attempt	Displays the period of time, in minutes, that a specified number of unsuccessful attempts can be made before the user is locked out.
Lockout period (when threshold breached)	Displays the number of minutes that the user is locked out if the threshold of unsuccessful login attempts has been exceeded.
Authentication order	Displays the sequence in which password authentication is attempted among RADIUS, TACACS+, and local passwords.
User password history length	Displays the size of the password history file to be stored.
Password hashing	Displays the system hashing algorithm for passwords.
Accepted password length	Displays the minimum length required for local passwords.
Credits for each character type	Displays the credit for each character type. A credit is obtained for a specific character type; for example, uppercase, lowercase, numeric, or special character. Credits per character type are configurable. Credits can be used toward the minimum length of the password, so a trade-off can be made between a very long, simple password and a short, complex one.
Required character types	Displays the character types that are required in a password; for example, uppercase, lowercase, numeric, or special character.
Minimum number different character types	Displays the minimum number of each different character types in a password.

Label	Description
Required distance with previous password	Displays the minimum Levenshtein distance between a new password and the old password.
Allow consecutively repeating a character	Displays the number of times the same character is allowed to be repeated consecutively.
Allow passwords containing username	Displays whether the user name is allowed as part of the password.
Palindrome allowed	Displays whether palindromes are allowed as part of the password.

## password-options

### Syntax

**password-options**

### Context

[\[Tree\]](#) (show>system>security password-options)

### Full Context

show system security password-options

### Description

This command displays password options.

### Platforms

All

### Output

The following output is an example of password option information.

[Table 354: Show Password-Options Output Fields](#) describes password-options output fields.

### Output Example

```
A:ALA-48>show>system>security# password-options
=====
Password Options
=====
Password aging in days                : 365
Number of invalid attempts permitted per login : 5
Time in minutes per login attempt     : 5
Lockout period (when threshold breached) : 20
Authentication order                  : radius tacplus local
User password hashing algorithm       : bcrypt
Configured complexity options         :
Minimum password length                : 8
```

```
=====
A:ALA-48>show>system>security#
```

Table 354: Show Password-Options Output Fields

Label	Description
Password aging in days	Displays the number of days a user password is valid before the user must change his password.
Number of invalid attempts permitted per login	Displays the maximum number of unsuccessful login attempts allowed for a user.
Time in minutes per login attempt	Displays the time in minutes that user is to be locked out.
Lockout period (when threshold breached)	Displays the number of minutes the user is locked out if the threshold of unsuccessful login attempts has exceeded.
Authentication order	Displays the most preferred method to authenticate and authorize a user.
User password hashing algorithm	Displays the algorithm with which the system hashes the user passwords.
Configured complexity options	Displays the complexity requirements of locally administered passwords, HMAC-MD5-96, HMAC-SHA-96 and DES-keys configured in the <b>authentication</b> section.
Minimum password length	Displays the minimum number of characters required in the password.

## 18.13 path

path

### Syntax

```
path [path-name] [isp-binding]
path path-name p2mp-isp-binding
```

### Context

[\[Tree\]](#) (show>router>mpls path)

### Full Context

```
show router mpls path
```

## Description

This command displays MPLS paths.

## Parameters

### *path-name*

Specifies the unique name label for the LSP path.

### *isp-binding*

Displays binding information.

### *p2mp-isp-binding*

Displays binding information.

## Platforms

All

## Output

The following output is an example of MPLS path information.

[Table 355: MPLS Path Output Fields](#) describes MPLS Path output fields.

*Table 355: MPLS Path Output Fields*

Label	Description
Path Name	The unique name label for the LSP path.
Adm	Down — The path is administratively disabled. Up — The path is administratively enabled.
Hop Index	The value used to order the hops in a path.
IP Address	The IP address of the hop that the LSP should traverse on the way to the egress router.
Strict/Loose	Strict — The LSP must take a direct path from the previous hop router to the next router. Loose — The route taken by the LSP from the previous hop to the next hop can traverse through other routers.
LSP Name	The name of the LSP used in the path.
Binding	Primary — The preferred path for the LSP. Secondary — The standby path for the LSP.
Paths	Total number of paths configured.

## Output Example

```
*A:SRU4>config>router>mpls# show router mpls path
=====
```

```

MPLS Path:
=====
Path Name                Adm  Hop Index  IP Address  Strict/Loose
-----
to_10_30_1_1            Up   no hops    n/a         n/a
to_10_30_1_2            Up   no hops    n/a         n/a
to_10_30_1_3            Up   no hops    n/a         n/a
to_10_30_1_4            Up   no hops    n/a         n/a
to_10_30_1_5            Up   no hops    n/a         n/a
to_10_30_1_6            Up   no hops    n/a         n/a
to_10_30_1_110          Up   no hops    n/a         n/a
to_10_8_100_15          Up   no hops    n/a         n/a
to_10_20_1_20           Up   no hops    n/a         n/a
to_10_20_1_22           Up   no hops    n/a         n/a
to_10_100_1_1           Up   no hops    n/a         n/a
-----
Paths : 11
=====
*A:SRU4>config>router>mpls#

*A:SRU4>config>router>mpls# show router mpls path lsp-binding
=====
MPLS Path:
=====
Path Name                Opr  LSP Name                Binding
-----
to_10_30_1_1            Up   to_10_30_1_1_cspf       Primary
Up   to_10_30_1_1_cspf_16  Up   to_10_30_1_1_cspf_2     Primary
Up   to_10_30_1_1_cspf_16  Up   to_10_30_1_1_cspf_3     Primary
Up   to_10_30_1_1_cspf_16  Up   to_10_30_1_1_cspf_17    Primary
Up   to_10_30_1_1_cspf_16  Up   to_10_30_1_1_cspf_18    Primary
Up   to_10_30_1_1_cspf_16  Up   to_10_30_1_1_cspf_19    Primary
Up   to_10_30_1_1_cspf_16  Up   to_10_30_1_1_cspf_20    Primary
to_10_30_1_2            Up   to_10_30_1_2_cspf       Primary
Up   to_10_30_1_2_cspf_16  Up   to_10_30_1_2_cspf_2     Primary
Up   to_10_30_1_2_cspf_16  Up   to_10_30_1_2_cspf_3     Primary
Up   to_10_30_1_2_cspf_16  Up   to_10_30_1_2_cspf_4     Primary
Up   to_10_30_1_2_cspf_16  Up   to_10_30_1_2_cspf_5     Primary
...
to_10_100_1_1           Down to_10_100_1_1_cspf     Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_2 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_3 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_4 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_5 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_6 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_14 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_15 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_16 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_17 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_18 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_19 Primary
Down to_10_100_1_1_cspf_13 Down to_10_100_1_1_cspf_20 Primary
-----
Paths : 11
=====
*A:SRU4>config>router>mpls#
  
```

## 18.14 path-request

### path-request

#### Syntax

```
path-request [isp-type isp-type] [dest ip-address] [detail]
```

#### Context

[\[Tree\]](#) (show>router>pcep>pcc path-request)

#### Full Context

```
show router pcep pcc path-request
```

#### Description

This command displays the PCEP path request information.

#### Parameters

##### *isp-type*

Specifies the LSP type.

**Values** rsvp-p2p, rsvp-p2mp, seg-rt



##### **Note:**

The LSP type, **rsvp-p2mp**, is not supported for PCE controlled or PCE initiated LSPs.

##### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

##### **detail**

Specifies detailed information.

#### Platforms

All



## 18.15 paths

### paths

#### Syntax

paths

#### Context

[\[Tree\]](#) (show>router>bgp paths)

#### Full Context

show router bgp paths

#### Description

This command displays a summary of BGP path attributes.

#### Platforms

All

#### Output

The following output is an example of BGP path information. [Table 356: Show Router BGP Path Field Descriptions](#) describes the output fields.

#### Output Example

```
*A:ALA-12# show router 3 bgp paths
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
BGP Paths
-----
Path: 60203 65001 19855 3356 15412
-----
Origin       : IGP                Next Hop      : 10.0.28.1
MED          : 60203              Local Preference : none
Refs         : 4                  ASes         : 5
Segments     : 1
Flags        : EBGP-learned
Aggregator   : 15412 62.216.140.1
-----
Path: 60203 65001 19855 3356 1 1236 1236 1236 1236
-----
Origin       : IGP                Next Hop      : 10.0.28.1
MED          : 60203              Local Preference : none
Refs         : 2                  ASes         : 9
Segments     : 1
Flags        : EBGP-learned
-----
*A:ALA-12#
```

Table 356: Show Router BGP Path Field Descriptions

Label	Description
BGP Router ID	The local BGP router ID.
AS	The configured autonomous system number.
Local AS	The configured local AS setting. If not configured, then the value is the same as the AS.
Path	The AS path attribute.
Origin	EGP — The NLRI is learned by an EGP protocol. IGP — The NLRI is interior to the originating AS. INCOMPLETE — NLRI was learned another way.
Next Hop	The advertised BGP nexthop.
MED	The Multi-Exit Discriminator value.
Local Preference	The local preference value.
Refs	The number of routes using a specified set of path attributes.
ASes	The number of autonomous system numbers in the AS path attribute.
Segments	The number of segments in the AS path attribute.
Flags	EBGP-learned — Path attributes learned by an EBGP peering. IBGP-Learned — Path attributes learned by an IBGP peering.
Aggregator	The route aggregator ID.
Community	The BGP community attribute list.
Originator ID	The originator ID path attribute value.
Cluster List	The route reflector cluster list.

## 18.16 pattern-match

### pattern-match

#### Syntax

**pattern-match [detail]**

## Context

[\[Tree\]](#) (tools>dump>filter>resources pattern-match)

## Full Context

tools dump filter resources pattern-match

## Description

This command displays pattern match records.

## Parameters

### detail

Displays detailed pattern match records.

## Platforms

All

## Output

The following output is an example of detailed pattern match records.

### Output Example

```
A:Dut-A# tools dump filter resources pattern-match
=====
Unique filter pattern match patterns
=====
Used : 1
Free : 1022
Total : 1023
=====
A:Dut-A# tools dump filter resources pattern-match detail
=====
Unique pattern match
=====
Num Pattern          Mask          Not emb.    Emb.
-----
  1 0xff00000000000000 0xff00000000000000      1      0
=====
Unique filter pattern match patterns
=====
Used : 1
Free : 1022
Total : 1023
=====
```

## 18.17 pbb

pbb

### Syntax

**pbb base**

**pbb mac-name**

**pbb mac-name *mac-name* detail**

### Context

**[Tree]** (show>service pbb)

### Full Context

show service pbb

### Description

This command displays PBB information.

### Parameters

**base**

Displays information about a PBB base.

**mac-name**

Displays MAC name information.

**detail**

Displays detailed information.

***mac-name***

Displays information about a specific MAC name, up to 32 characters.

### Platforms

All

### Output

The following output is an example of PBB base information.

### Output Example

```
*A:Dut-B# show service pbb base
```

```
=====
```

```
PBB MAC Information
```

```
=====
```

```
MAC-Notif Count : 3  
MAC-Notif Interval : 1  
Source BMAC : Default
```

The following output is an example of PBB MAC information.

### Output Example

```
=====
*A:Dut-B# show service pbb mac-name
=====
MAC Name Table
=====
MAC-Name MAC-Address
-----
test 00:03:03:03:03:02
=====
*A:Dut-B# show service pbb mac-name test detail
=====
Services Using MAC name='test' addr='00:03:03:03:03:02'
=====
Svc-Id ISID
-----
501 501
-----
Number of services: 1
=====
*A:Dut-B#
```

## 18.18 pbr-steering

### pbr-steering

#### Syntax

**pbr-steering**

#### Context

[\[Tree\]](#) (show>router pbr-steering)

#### Full Context

show router pbr-steering

#### Description

This command displays PBR steering VAS interfaces with VAS interface type configuration.

#### Platforms

All

#### Output

The following output is an example of router PBR steering VAS interfaces information.

### Output Example

```

A:Dut-C# show router pbr-steering
=====
PBR Steering VAS interfaces
=====
Interface-Name                VAS IF Type
-----
No Matching Entries
=====
PBR Steering IPv4 filters
=====
Ingress filter
  Interface                    Interface name
  PBR Control
  PBR Types
-----
1
  pxc-20.b:1.1                N/A
  Mgmt
  IP
-----
Number of ingress IPv4 filters with PBR: 1
-----
Egress filter
  Interface                    Interface name
  PBR Control
  PBR Types
-----
2
  pxc-20.b:1.1                N/A
  Mgmt
  IP
-----
Number of egress IPv4 filters with PBR: 1
=====
PBR Steering IPv6 filters
=====
Ingress filter
  Interface                    Interface name
  PBR Control
  PBR Types
-----
No Matching Entries
-----
Egress filter
  Interface                    Interface name
  PBR Control
  PBR Types
-----
No Matching Entries
=====
    
```

## 18.19 pcap

pcap

### Syntax

**pcap** [*session-name*] [**detail**]

### Context

[\[Tree\]](#) (show pcap)

### Full Context

show pcap

### Description

This command shows the information about the packet capture session and confirms if the packet is reliable.

### Parameters

***session-name***

Specifies the session name up to 32 characters.

### Platforms

All

### Output

The following output is an example of information about the packet capture session.

#### Output Example

```
=====
Pcap Session "1" Information
=====
Application Type   : mirror-dest      Session State    : ready
Capture           : stop                Last Changed    : 02/06/2018 19:52:07
Capture File Url  : ftp://*:*@192.168.40.1/pcap.pcap
Buffer Size       : 0 Bytes             File Size        : 0 Bytes
Write Failures    : 0                    Read Failures    : 0
Proc Time Bailouts : 0                Last File Write  : 02/06/2018 19:52:07
Dropped Packets   : 0 Packets
=====
```

Table 357: Show PCAP Output Fields

Label	Description
Buffer Size	The maximum buffer size is 20 Mb. If the number of packets in the buffer exceeds 20 Mb, packets are dropped.
File Size	The current size of the capture file.
Write Failures	The number of errors that occurred when packets were written into the buffer. A number greater than zero indicates that some packets were not captured.
Read Failures	The errors occurred when packets were read from the buffer for exporting to FTP or TFTP. A number greater than zero indicates that some packets were not captured.
Process Time Bailouts	A system process timeout. Some packets were not captured.
Dropped Packets	The number of packets dropped from the buffer due to errors.

## 18.20 pcc

pcc

### Syntax

pcc

### Context

[\[Tree\]](#) (clear>router>pcep pcc)

### Full Context

clear router pcep pcc

### Description

Commands in this context clear PCEP PCC related data.

### Platforms

All



pcc

### Syntax

pcc

### Context

[\[Tree\]](#) (show>router>pcep pcc)

### Full Context

show router pcep pcc

### Description

Commands in this context display PCEP PCC related information.

### Platforms

All

pcc

### Syntax

pcc

### Context

[\[Tree\]](#) (tools>dump>router>pcep pcc)

### Full Context

tools dump router pcep pcc

### Description

Commands in this context dump tools for PCEP PCC.

### Platforms

All

## 18.21 pcc-rule

### pcc-rule

#### Syntax

**pcc-rule**  
**pcc-rule monitoring-key** *key* **detail**  
**pcc-rule rule-id** *id* **detail**  
**pcc-rule rule-name** *rule-name*  
**pcc-rule rule-name** *rule-name* **detail**  
**pcc-rule summary**  
**pcc-rule monitoring-key** *key*

#### Context

[\[Tree\]](#) (show>subscr-mgmt pcc-rule)

#### Full Context

show subscriber-mgmt pcc-rule

#### Description

This command displays a list of PCC rules and associated monitoring keys in the system.

#### Parameters

##### *key*

Displays details about a specific monitoring-key.

##### *id*

Displays details about a specific PCC rule.

##### *rule-name*

Displays information about a specific PCC rule.

##### **summary**

Displays summarized information for active rules in the system.

##### *key*

Displays information about a specific monitoring-key.

##### **detail**

Displays detailed information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management PCC rule information.

### Output Example

```

show subscriber-mgmt pcc-rule summary
=====
PCC Rules Summary
=====
Nbr Active PCC Rules      : 26 / 1023
Nbr Active Combinations
  IPv4 Filter             : 2 / 4095
  IPv6 Filter             : 0 / 4095
  Egress Qos              : 1 / 4095
  Ingress Qos            : 1 / 4095
=====

show subscriber-mgmt pcc-rule
=====
-----
              Id      Dir ForwardAction      QosAction
-----
name       : RULE_egress_FC
monitorKey: -
              29      egr -                fc
name       : RULE_egress_UM
monitorKey: um_RULE_egress_UM
              34      egr -                monitor
name       : RULE_ingress_FC
monitorKey: -
              37      ingr -                fc
name       : RULE_ingress_UM
monitorKey: um_RULE_ingress_UM
              50      ingr -                monitor
name       : RULE_egress_DROP
monitorKey: -
              28      egr drop              -
name       : RULE_ingress_RDR
monitorKey: -
              49      ingr fwd nh4          -
name       : RULE_egress_UM_FC
monitorKey: um_RULE_egress_UM_FC
              35      egr -                fc monitor
...
=====

show subscriber-mgmt pcc-rule rule-name "RULE_ingress_RATE_LIMIT_UM_FC_RDR" detail
=====
PCC Rules
=====
PCC rule name      : RULE_ingress_RATE_LIMIT_UM_FC_RDR
PCC rule id       : 47
Monitoring key    : um_RULE_ingress_RATE_LIMIT_UM_FC_RDR
Flow status       : Enabled
Nbr of Flows     : 1 (ingress)
HTTP-Redirect     : -
Next-Hop Redir. IPv4 : 10.10.10.10
Next-Hop Redir. IPv6 : -
QoS Ingr. CIR/PIR : 1000 kbps / 2000 kbps
QoS Egr. CIR/PIR  : - / -
FC change        : h2
-----
    
```

```

Flows
-----
Src. IP   : any                               Src. Port: -
Dst. IP   : 75.24.24.17/32                   Dst. Port: -
Protocol  : 6                                 DSCP     : cp60
-----
=====

show service active-subscribers pcc-rule subscriber "1/1/3:1.1|00:00:00:00:00:01"
=====
Active Subscribers
=====
Subscriber 1/1/3:1.1|00:00:00:00:00:01 (subprof1)
-----
(1) SLA Profile Instance sap:1/1/3:1.1 - sla:sla1
-----
Ingr Qos Policy Override : 3:P2
Egr  Qos Policy Override : 2:P2
-----
IP Address          MAC Address          PPPoE-SID Origin
-----
22.1.0.1           00:00:00:00:00:01 N/A          DHCP
-----
Ingr Filter Override : 5:P4
Egr  Filter Override : 6:P5
=====
Preference Rule Id  Rule Name
-----
0      28      RULE_egress_DROP
0      29      RULE_egress_FC
0      30      RULE_egress_RATE_LIMIT
0      31      RULE_egress_RATE_LIMIT_FC
0      32      RULE_egress_RATE_LIMIT_UM
0      33      RULE_egress_RATE_LIMIT_UM_FC
0      34      RULE_egress_UM
0      35      RULE_egress_UM_FC
0      36      RULE_ingress_DROP
0      37      RULE_ingress_FC
0      38      RULE_ingress_FC_HTTP
0      39      RULE_ingress_FC_RDR
0      40      RULE_ingress_HTTP
0      41      RULE_ingress_RATE_LIMIT
0      42      RULE_ingress_RATE_LIMIT_FC
0      43      RULE_ingress_RATE_LIMIT_FC_RDR
0      44      RULE_ingress_RATE_LIMIT_RDR
0      45      RULE_ingress_RATE_LIMIT_UM
0      46      RULE_ingress_RATE_LIMIT_UM_FC
0      47      RULE_ingress_RATE_LIMIT_UM_FC_RDR
0      48      RULE_ingress_RATE_LIMIT_UM_RDR
0      49      RULE_ingress_RDR
0      50      RULE_ingress_UM
0      51      RULE_ingress_UM_FC
0      52      RULE_ingress_UM_FC_RDR
0      53      RULE_ingress_UM_RDR
=====
    
```

[Table 358: Policy and Charging Control Rule Field Descriptions](#) describes subscriber management PCC rule output fields.

*Table 358: Policy and Charging Control Rule Field Descriptions*

Field	Description
Nbr Active PCC Rules	The number of active PCC rules
Nbr Active Combinations	The number of active IP PCC rule combinations
IPv4 Filter	The number of IPv4 filter combinations
IPv6 Filter	The number of IPv6 filter combinations
Egress QoS	The number of active egress QoS PCC rule combinations
Ingress QoS	The number of active ingress QoS PCC rule combinations
Id	The PCC ID
Dir	The flow direction on which the PCC-rule acts
ForwardAction	The filter action of the PCC-rule
QoSAction	The QoS action of the PCC-rule. The value <code>account(3)</code> is only relevant if the PCC-rule was received by the system as part of a RADIUS Subscriber Service attribute
name	The PCC rule name
monitorKey	The monitor key name that can be received in a PCC rule. An empty string (length 0) indicates that no monitor key is defined in the PCC rule
PCC rule name	The name of a PCC rule
PCC rule id	The PCC rule ID
Monitoring key	The monitoring key defined in this PCC-rule. This value is only considered if <b>monitor</b> is set in the QoS action.
Flow status	The PCC rule flow status; enabled or disabled
Nbr of Flows	The number of flow rules defined in this PCC rule
HTTP-Redirect	The URL to which all data flows that pertain to this PCC-rule must be redirected
Next-Hop Redir. IPv4	The IPv4 address to which all IPv4 data flows that pertain to this PCC-rule be redirected
Next-Hop Redir. IPv6	The IPv6 address to which all IPv6 data flows that pertain to this PCC-rule be redirected

Field	Description
QoS Ingr. CIP/PIR	The ingress QoS CIP and PIR values
QoS Egr. CIP/PIR	The egress QoS CIP and PIR values
FC change	The forwarding class (FC) that is assigned to all data flows that pertain to this PCC-rule
Src. IP	The address type of the source address
Src. Port	The port type of the source address
Dst. IP	The address type of the destination address
Protocol	The IPv4 protocol value, and for IPv6 the next header type used in the match criteria for this flow <ul style="list-style-type: none"> <li>• 6 — TCP</li> <li>• 7 — UDP</li> </ul>
DSCP	The DSCP to be matched for this flow
Subscriber	The subscriber SAP
SLA Profile Instance sap	The SLA profile instance SAP
Ingr QoS Policy Override	The ID of the overriding ingress Qos policy
Egr QoS Policy Override	The ID of the overriding egress Qos policy
IP Address	The subscriber IP address
MAC Address	The subscriber MAC address
PPPoE-SID	The PPPoE session ID of this subscriber host
Origin	The origin of this subscriber host
Preference	The preference with respect to other PCC rules
Rule ID	The PCC rule ID
Rule Name	The PCC rule name

## pcc-rule

### Syntax

**pcc rule** [**subscriber** *sub-ident-string*]

**pcc rule** [**subscriber** *sub-ident-string*] **detail**

### Context

[\[Tree\]](#) (show>service>active-subscribers pcc-rule)

### Full Context

show service active-subscribers pcc-rule

### Description

This command specifies the PCC rule.

### Parameters

#### *sub-ident-string*

Specifies the sub-ident-string, up to 32 characters.

#### *detail*

Displays detailed information for the specified PCC rule.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.22 pce-associations

### pce-associations

### Syntax

**pce-associations**

### Context

[\[Tree\]](#) (show>router>pcep>pcc pce-associations)

### Full Context

show router pcep pcc pce-associations

### Description

Commands in this context display information about PCE associations configured under the PCC.

### Platforms

All

## 18.23 pcep

```
pcep
```

### Syntax

```
pcep
```

### Context

[\[Tree\]](#) (clear>router pcep)

### Full Context

```
clear router pcep
```

### Description

Commands in this context clear PCEP related data.

### Platforms

All

```
pcep
```

### Syntax

```
pcep
```

### Context

[\[Tree\]](#) (show>router pcep)

### Full Context

```
show router pcep
```

### Description

Commands in this context display PCEP related information.

### Platforms

All



## pcep

### Syntax

pcep

### Context

[\[Tree\]](#) (tools>dump>router pcep)

### Full Context

tools dump router pcep

### Description

Commands in this context dump tools for PCEP.

### Platforms

All

## 18.24 pcm

## pcm

### Syntax

pcm [*pcm-slot*] [**chassis** *chassis-id*] [**detail**]

### Context

[\[Tree\]](#) (show pcm)

### Full Context

show pcm

### Description

This command displays PCM information.

### Parameters

#### *pcm-slot*

Specifies the PCM slot identifier.

**Values** 1 to 12

#### *chassis-id*

Specifies the chassis ID for the router chassis.

**Values** 1 to 2

**detail**

Displays detailed information.

**Platforms**

7950 XRS-20e

**Output**

The following output is an example of PCM information.

**Output Example: show pcm**

```
*A:Dut-A# show pcm
=====
PCM Summary
=====
Chassis/   Provisioned Type      Operational   Input   Zone
Slot       Equipped Type (if diff) State         A B2 A2 B
-----
1/9        (not provisioned)    unprovisioned           1
           (present)
1/10       (not provisioned)    unprovisioned   Y Y   Y Y   1
           quad-pcm
1/11       quad-pcm              unprovisioned   Y Y   Y Y   1
1/12       quad-pcm              unprovisioned   Y Y   Y Y   1
```

## 18.25 pcp-server

### pcp-server

**Syntax**

- pcp-server**
- pcp-server** *server-name*
- pcp-server** *server-name* **statistics** **interface** *interface-name*
- pcp-server** *server-name* **statistics**

**Context**

[\[Tree\]](#) (show>router pcp-server)

**Full Context**

show router pcp-server

**Description**

This command displays PCP server information.

## Parameters

### **server-name**

Specifies the PCP server name, up to 32 characters.

### **statistics**

Displays PCP server statistics information.

### **interface-name**

Specifies the interface name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following outputs are examples of router PCP server information.

### Output Example

```
*A:Dut-C# show router 20 pcp-server "pcp-server-1"
=====
PCP server "pcp-server-1"
=====
Description                : (Not Specified)
Administrative state       : in-service
PCP server policy         : pcp-policy-1
Forwarding Inside Router  : 20
Dual Stack Lite address   : af::1
State                     : in-service
State description         : (Not Specified)
Epoch                   : 19684
Last management change    : 04/07/2020 13:19:34
=====
Interfaces
-----
toDut-B-lag2
toLinux2
-----
No. of Interface(s): 2
```

```
*A:Dut-C# show router 20 pcp-server "pcp-server-1" statistics
=====
PCP statistics for interface "toDut-B-lag2"
=====
Rx opcode "announce"      : 0
Rx opcode "map"           : 0
Rx opcode "peer"         : 0
Rx opcode "get"           : 0
Rx opcode unknown        : 0
Rx option "third party"   : 0
Rx option "prefer failure": 0
Rx option "filter"       : 0
Rx option "description"   : 0
Rx option "next"         : 0
Rx option "port reservation": 0
Rx option unknown        : 0
Rx dropped (packet too short): 0
Rx dropped (wrong r bit)  : 0
Rx dropped (invalid source address): 0
```

```
Rx dropped (oper down)           : 0
Tx result "success"              : 6
Tx result "unsupported version"  : 0
Tx result "not authorized"       : 0
Tx result "malformed request"    : 0
Tx result "unsupported opcode"    : 0
Tx result "unsupported option"    : 0
Tx result "malformed option"     : 0
Tx result "network failure"      : 0
Tx result "no resources"         : 0
Tx result "unsupported protocol"  : 0
Tx result "user exceeded quota"  : 0
Tx result "cannot provide external" : 0
Tx result "address mismatch"     : 0
Tx result "no more mappings"     : 0
Tx result "ambiguous"            : 0
Tx v4                             : 2
Tx v6                             : 4
Tx dropped (tx error)            : 0
=====
```

## pcp-server

### Syntax

**pcp-server** *server-name* **interface** *interface-name* **statistics**

### Context

[\[Tree\]](#) (clear>router pcp-server)

### Full Context

clear router pcp-server

### Description

This command clears NAT PCP server data.

### Parameters

#### **server-name**

Clears NAT PCP server data for the specified PCP server, up to 32 characters.

#### **interface-name**

Clears NAT PCP server data for the specified interface, up to 32 characters.

#### **statistics**

Clears NAT PCP server statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## pcp-server

### Syntax

```
pcp-server server-name
```

### Context

[\[Tree\]](#) (tools>perform>router pcp-server)

### Full Context

```
tools perform router pcp-server
```

### Description

This command configures performance tools for a specified NAT port control policy server.

### Parameters

***server-name***

Specifies the PCP server name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 18.26 pcp-server-policy

## pcp-server-policy

### Syntax

```
pcp-server-policy
```

```
pcp-server-policy name
```

### Context

[\[Tree\]](#) (show>service>nat pcp-server-policy)

### Full Context

```
show service nat pcp-server-policy
```

### Description

This command displays PCP server policy information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 18.27 pcs

```
pcs
```

### Syntax

```
pcs[clear]
```

### Context

```
[Tree] (tools>dump>port pcs)
```

### Full Context

```
tools dump port pcs
```

### Description

This command dumps the Physical Coding Sublayer (PCS) information for the port.

### Platforms

All

## 18.28 peak

```
peak
```

### Syntax

```
peak
```

```
peak application license-app
```

### Context

```
[Tree] (show>system>license-statistics peak)
```

### Full Context

```
show system license-statistics peak
```

### Description

This command displays peak values of application license statistics.

## Parameters

### *license-app*

Specifies the application license.

**Values**   Ins, nat, sub-mgmt, wlan-gw, aa, ipsec

## Platforms

VSR

## 18.29 peakvalue-stats

### peakvalue-stats

## Syntax

**peakvalue-stats iom** (*slot* | **all**) [**recursive**]

**peakvalue-stats mda** (*mda* | **all**) [**recursive**]

**peakvalue-stats port** (*port-id* | **all**)

**peakvalue-stats pw-port** (*pw-port* | **all**)

**peakvalue-stats system** [**recursive**]

**peakvalue-stats service** {*svc-id* | **all**} [**recursive**]

**peakvalue-stats service** {*svc-id*} **subscriber-interface** { *sub-itf* | **all**} [**recursive**]

**peakvalue-stats service** {*svc-id*} **group-interface** { *grp-itf* | **all**}

## Context

[\[Tree\]](#) (clear>subscriber-mgmt peakvalue-stats)

## Full Context

clear subscriber-mgmt peakvalue-stats

## Description

This command resets the most recent peak enhanced subscriber management counter per port, PW port, MDA, IOM, system, service, subscriber interface, or group interface.



### Note:

Clearing one counter will not impact other counters. For example, clearing the most recent peak value for an IOM will not impact chassis peak value.

## Parameters

### *slot*

Clears IOM host peak value statistics for the specified IOM.

**mda**

Clears MDA host peak value statistics for the specified MDA.

**port-id**

Clears port host peak value statistics for the specified port ID.

**pw-port**

Clears pseudowire port host peak value statistics for the specified port.

**Values** 1 to 10239

**system**

Clears system host peak value statistics.

**all**

Clears all host peak value statistics.

**recursive**

Resets the sub-level counters. For example, clearing IOM counters with the **recursive** keyword also clears counters of all port counters on that IOM.

**service svc-id**

Clears service host peak value statistics for the specified service.

**Values** 1 to 2148278386 | *svc-name*: up to 64 characters

**subscriber-interface sub-itf**

Clears subscriber interface host peak value statistics for the specified subscriber interface, up to 32 characters.

**group-interface grp-itf**

Clears group interface host peak value statistics for the specified group interface, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.30 peer

peer

**Syntax**

**peer** [**peer-profile** *profile-name*] [**local-address** *ip-address*] [**control** *protocol*] [**interface-type** *interface-type*]

**peer remote-address** {*ip-address* | *ipv6-address*} [**udp-port** *port*] [**dsm-local-ip-address** {*ip-address* | *ipv6-address*}]

**peer remote-address** {*ip-address* | *ipv6-address*} [**udp-port** *port*] **statistics** [**dsm-local-ip-address** {*ip-address* | *ipv6-address*}]



## Context

[\[Tree\]](#) (show>router>gtp peer)

## Full Context

show router gtp peer

## Description

This command displays GTP peer information.

## Parameters

### *profile-name*

Specifies the name that identifies the profile.

### *ip-address*

Specifies the local IP address.

#### Values

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H d - [0 to 255]D

### *protocol*

Specifies the control plane protocol used for the connection with this Mobile Gateway.

**Values** gtpv1-c, gtpv2-c

### *interface-type*

Specifies the interface type used in the context of this peer.

**Values** gn — Gn interface  
s2a — S2a interface  
s2b — S2b interface  
s11 — S11 interface

### *ip-address*

Specifies the remote IP address.

#### Values

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H

d - [0 to 255]D

**port**

Specifies the UDP port.

**Values** 1 to 65535

**statistics**

Displays statistics information about the Mobile Gateways connected to this system.

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of peer GTP information.

**Output Example**

```
Node# show router 10 gtp peer
=====
Peers
=====
Remote address      : 192.168.100.1
UDP port           : 2123
-----
State               : up
Local address       : 192.0.2.10
Profile             : default_s11
Control protocol    : gtpv2-c
Interface type      : s11
Restart count       : 1
Time                : 2018/05/31 11:12:59
-----
No. of Peers: 1
=====
```

**peer**

**Syntax**

**peer remote-address** *ip-address* [**remote-udp-port** *port*]

**peer remote-address** *ip-address* [**remote-udp-port** *port*] **statistics**

**Context**

[\[Tree\]](#) (clear>router>gtp peer)

**Full Context**

clear router gtp peer

## Description

This command clears all states for a given peer in this routing context. The system no longer sends keep-alive messages to the peer, and all active sessions are terminated.

If the optional statistics parameter is specified, only the peer statistics are cleared and all sessions remain.

## Parameters

### *ip-address*

Specifies the IP address of the peer.

#### Values

*ipv4-address*: a.b.c.d (host bits must be 0)

*ipv6-address*: x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x - [0 to FFFF]H

d - [0 to 255]D

### *port*

Specifies the UDP port used by the peer.

### *statistics*

Specifies to clear only the peer statistics with all sessions remaining active.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## peer

## Syntax

**peer** *ip-address* [**udp-port** *port*] [**ip**]

**peer** *ip-address* **statistics** [ **udp-port** *port*] [**ip**]

**peer** [**draining**] [{**blacklisted** | **selectable** | **unreachable**}]

## Context

[\[Tree\]](#) (show>router>l2tp peer)

## Full Context

show router l2tp peer

## Description

This command displays information regarding all configured L2TP peers.

If this command is executed without specifying a peer IP address, then a list of all L2TP peers are listed along with the type of transport used and statistics on the total number of tunnels and sessions, as well as the number of active tunnels and sessions.

If this command is executed with a specific peer IP address, then a detailed view for that peer is displayed.

### Parameters

**ip-address**

Specifies the L2TP peer address.

**port**

Specifies the UDP port for the L2TP peer. This parameter is only supported with L2TPv2 peers.

**ip**

Displays peers using IP transport.

**statistics**

Displays the statistics for the given IP address.

**draining**

Displays only peers with draining tunnels.

**blacklisted**

Displays peers that are denylisted.

**selectable**

Displays peers that are selectable.

**unreachable**

Displays peers that are deemed unreachable.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of L2TP peer operational information.

#### Output Example

```
A:Dut-A# show router 200 l2tp peer
=====
L2TP Peers
=====
Peer IP                               Port  Tun Active Ses Active
                               Drain Reachability Tun Total  Ses Total
-----
10.1.1.2                               ip    1    1    1
                               1    1    1
-----
No. of peers: 1
=====

A:Dut-A# show router 200 l2tp peer 10.1.1.2 ip
=====
Peer IP: 10.1.1.2
```

```

=====
Roles capab/actual: LAC LNS / - -   Draining      : false
Tunnels           : 1                 Tunnels Active : 1
Sessions          : 1                 Sessions Active: 1
Reachability      : reachable         Time Unreachable: N/A
=====
Conn ID   Loc-Tu-ID Rem-Tu-ID State           Blacklist-state  Ses Active
  Group                                     Ses Total
  Assignment
-----
221118464 3374      0         established     not-blacklisted  1
v3-group-1
  tun-1-l2tp-v3
-----
No. of tunnels: 1
=====
*A:Fden-Dut2-BSA2# show router l2tp peer 10.0.0.1 statistics
=====
Peer IP: 10.0.0.1
=====
tunnels                               : 1
tunnels active                         : 1
sessions                               : 1
sessions active                        : 1

rx ctrl octets                         : 541
rx ctrl packets                        : 5
tx ctrl octets                         : 272
tx ctrl packets                        : 5
tx error packets                       : 0
rx error packets                       : 0
rx accepted msg                        : 4
rx duplicate msg                       : 0
rx out of window msg                   : 0

acceptedMsgType
  StartControlConnectionRequest        : 1
  StartControlConnectionConnected      : 1
  IncomingCallRequest                  : 1
  IncomingCallConnected                 : 1
  ZeroLengthBody                        : 1
originalTransmittedMsgType
  StartControlConnectionReply          : 1
  IncomingCallReply                    : 1
  ZeroLengthBody                       : 3

last cleared time                      : N/A
=====
    
```

## peer

### Syntax

```

peer ip-address [udp-port port]
peer ip-address statistics [udp-port port]
peer [draining] [blacklisted | selectable | unreachable]
    
```

## Context

[\[Tree\]](#) (show>router>l2tp peer)

## Full Context

```
show router l2tp peer
```

## Description

This command displays L2TP peer operational information.

## Parameters

### *ip-address*

Specifies the IP address for the L2TP peer.

Values	
ipv4-address	a.b.c.d
ipv6-address	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H d - [0 to 255]D
<b>draining</b>	keyword
<b>statistics</b>	keyword
<i>port</i>	[1 to 65535]

### *port*

Specifies the local UDP port of this L2TP.

**Values** 1 to 65535

### **draining**

Specifies to display information about the L2TP peer being drained.

### **blacklisted**

Specifies to display information about the peer has been deemed unreachable and has been put in the tunnel selection denylist.

### **selectable**

Specifies to display information about the peer has been deemed unreachable for the time specified in `tmnxL2tpXtTuSelBlacklistMaxTime` and can now be selected for a single session, after which the reachability of the peer is reevaluated.

### **unreachable**

Specifies to display information about the `sysUpTime` when the peer was deemed unreachable for the last time.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of L2TP peer information.

### Output Example

```

show router l2tp peer 10.100.0.2
=====
Peer IP: 10.100.0.2
=====
Roles capab/actual: LAC LNS /LAC -   Draining           : false
Tunnels             : 1               Tunnels Active      : 0
Sessions            : 1               Sessions Active     : 0
Reachability        : blacklisted     Time Unreachable    : 01/31/2013 08:55:06
Time Blacklisted    : 01/31/2013 08:55:06 Remaining (s)      : 34
=====
Conn ID              Loc-Tu-ID Rem-Tu-ID State              Ses Active
Group               Assignment Ses Total
-----
977207296           14911    0         closed              0
base_lac_base_lns  t1       1
-----
No. of tunnels: 1
=====

show router l2tp tunnel detail
=====
L2TP Tunnel Status
=====
Connection ID: 831782912
State          : closedByPeer
IP             : 10.0.0.1
Peer IP        : 10.100.0.2
Tx dst-IP     : 10.100.0.2
Rx src-IP     : 10.100.0.2
Name           : lac
Remote Name    :
Assignment ID: t1
Group Name     : base_lac_base_lns
Acct. Policy  : l2tp-base
Error Message  : N/A

Tunnel ID      : 12692
UDP Port       : 1701
Preference     : 50
Hello Interval (s): 300
Idle T0 (s)    : 5
Max Retr Estab : 5
Session Limit  : 32767
Transport Type : udpIp
Time Started   : 01/31/2013 08:56:58
Time Established : N/A
Stop CCN Result : reqShutDown
Blacklist-state : blacklisted
Blacklist Time  : 01/31/2013 08:56:58

Remote Conn ID : 4294901760
Remote Tunnel ID : 65535
Remote UDP Port : 1701
Receive Window  : 64

Destruct T0 (s) : 60
Max Retr Not Estab: 5
AVP Hiding      : sensitive
Challenge       : never
Time Idle       : 01/31/2013 08:56:58
Time Closed     : 01/31/2013 08:56:58
General Error   : noError
Remaining (s)   : 49
    
```

```
No. of tunnels: 1  
=====
```

```
peer
```

### Syntax

```
peer ip-address [udp-port port] [ip]
```

### Context

[\[Tree\]](#) (clear>router>l2tp peer)

### Full Context

```
clear router l2tp peer
```

### Description

This command clears L2TP peer data.

### Parameters

#### *ip-address*

Clears the peers associated with the specified IP address.

#### Values

ipv4-address: a.b.c.d

ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x.d.d.d.d

x: [0 to FFFF]H

d: [0 to 255]D

#### *port*

Clears the peers associated with the specified UDP port.

**Values** 1 to 65535

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
peer
```

### Syntax

```
peer ip-address [udp-port port] [ip]
```



## Context

[\[Tree\]](#) (tools>perform>router>l2tp peer)

## Full Context

tools perform router l2tp peer

## Description

This command configures performance tools for an L2TP peer.

## Parameters

### *ip-address*

Specifies the IP address of the L2TP peer.

### *port*

Specifies the UDP port for the L2TP peer. This parameter is only supported with L2TPv2 peers.

### *ip*

Enables performance tools for peers using IP transport.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

peer

## Syntax

**peer** [*ip-int-name*]

## Context

[\[Tree\]](#) (show>router>rip peer)

## Full Context

show router rip peer

## Description

This command displays RIP peer information.

## Parameters

### *ip-int-name*

Displays peer information for the specified IP peer interface name, up to 32 characters.

**Default** display peers for all interfaces

## Platforms

All

## Output

[Table 359: RIP Peer Output Fields](#) describes the command output fields for a RIP peer.

Table 359: RIP Peer Output Fields

Label	Description
Peer IP Addr	The IP address of the peer router.
Interface Name	The peer interface name.
Version	The version of RIP running on the peer.
Last Update	The number of days since the last update.
No. of Peers	The number of RIP peers.

The following output is an example of RIP peer information.

### Output Example

```
A:ALA-A# show router rip peers
=====
RIP Peers
=====
Peer IP Addr      Interface Name      Version      Last Update
-----
10.0.5.13         router-2/2          RIPv2        0
10.0.6.16         router-2/3          RIPv2        2
10.0.9.14         router-2/5          RIPv2        8
10.0.10.15        router-2/4          RIPv2        0
-----
No. of Peers: 4
=====
A:ALA-A#
```

## peer

### Syntax

**peer** [*ip-address*] [*statistics*]

### Context

[\[Tree\]](#) (clear>router>ldp peer)

### Full Context

clear router ldp peer

## Description

This command restarts or clears statistics for LDP targeted peers.

## Parameters

### *ip-address*

The IP address of a targeted peer.

### *statistics*

Clears only the statistics for a targeted peer.

## Platforms

All

```
peer
```

## Syntax

```
peer ip-address
```

## Context

[\[Tree\]](#) (tools>dump>router>ldp peer)

## Full Context

```
tools dump router ldp peer
```

## Description

This command dumps information for an LDP peer.

## Platforms

All

```
peer
```

## Syntax

```
peer [ip-address] [detail]
```

## Context

[\[Tree\]](#) (show>router>pcep>pcc peer)

## Full Context

```
show router pcep pcc peer
```

## Description

This command displays the PCEP peer information.

## Parameters

### **ip-address**

Specifies the IP address.

**Values** a.b.c.d

### **detail**

Specifies detailed information.

## Platforms

All

## Output

PCEP Peer Output

[Table 360: PCEP Peer Output Fields](#) describes PCEP Peer output fields.

### Output Example

```
*A:cses-V23# show router pcep pcc peer
=====
PCEP Path Computation Client (PCC) Peer Info
=====
IP Address           : 192.168.0.10
Admin Status         : Down           Oper Status           : Down
Peer Capabilities    : (Not Specified)
Speaker ID           : (Undefined)
Sync State           : not-initialized Peer Overloaded       : False
Session Establish Time: 0d 00:00:00
Oper Keepalive       : N/A           Oper DeadTimer        : N/A
=====
```

*Table 360: PCEP Peer Output Fields*

Label	Description
IP Address	Specifies the IP address.
Peer Capabilities	Specifies the peer capabilities.
Speaker ID	Specifies the sender IP address.
Sync State	Specifies the synchronization state.
Peer Overload	Specifies the peer overload.
Session Establish Time	Specifies the session establish time.
Oper Keepalive	Specifies the operational keepalive value.

Label	Description
Oper DeadTimer	Specifies the operational dead timer value.

## peer

### Syntax

**peer** [*ip-address*] [**group** *group-name*] [**detail**]

### Context

[\[Tree\]](#) (show>router>msdp peer)

### Full Context

show router msdp peer

### Description

This command displays information about an MSDP peer.

### Parameters

*ip-address*

Displays information about the specified IP address. If no IP address specified, information about all MSDP IP addresses display.

**group** *group-name*

Displays information about the specified group name, up to 32 characters. If no *group-name* is specified, information about all MSDP peers display.

**detail**

Keyword to displays detailed MSDP peer information.

### Platforms

All

### Output

The following output is an example of MSDP peer information, and [Table 361: Output fields: MSDP peer](#) describes the output fields.

#### Output example

```
A:ALA-48# show router msdp peer
=====
MSDP Peers
=====
Peer           Local Address   State           Last State Change   SA Learnt
-----
10.20.1.1      10.20.1.6       Established 08/30/2002 03:22:131008
-----
Peers : 1
```

```

=====
A:ALA-48#

A:ALA-48# show router msdp peer detail
=====
MSDP Peers
-----
Peer Address      : 10.20.1.1
-----
Group Name       : None
Local Address    : 10.20.1.6
Last State Change : 08/30/2002 03:22:13 Last Act Src Limit : N/A
Peer Admin State : Up           Default Peer      : No
Peer Connect Retry : 0         State           : Established
SA accepted      : 1008        SA received     : 709
State timer expires: 18        Peer time out   : 62
Active Source Limit: None      Receive Msg Rate : 0
Receive Msg Time  : 0         Receive Msg Thd  : 0
Auth Status      : Disabled    Auth Key        : None
Export Policy    : None Specified / Inherited
Import Policy    : None Specified / Inherited
-----
Peers : 1
=====
A:ALA-48#
    
```

Table 361: Output fields: MSDP peer

Label	Description
Peer	The IP address of the peer
Group Name	The name of the group associated with the peer
Local Address	The local IP address
State	The current state of the peer
Last State Change	The date and time of the last state change of the peer
Last Act Src Limit	The date and time when the active source limit was reached for messages received by the peer
SA Learnt	The number of SAs learned through a peer
Peer Admin State	The administrative state of the MSDP peer
Default Peer	The default peer configuration status
Peer connect retry	The number of connection attempts to the peer
SA accepted	The number of SA messages accepted from the peer
SA received	The total number of SA messages received from the peer
Active Source Limit	The active source message limit
Receive Msg Rate	The rate that the messages are read from the TCP session

Label	Description
Receive Msg Time	The time of MSDP messages that are read from the TCP session within the configured number of seconds
Receive Msg Thd	The configured threshold number of MSDP messages that can be processed before the MSDP message rate limiting function
Auth status	The authentication status of the peer
Auth Key	The authentication key for the peer
Export Policy	The export policy specified for the group
Import Policy	The import policy specified for the group

## peer

### Syntax

**peer** *ip-address* [**router** *router-instance* | **service-name** *service-name*] [**detail**]

### Context

[\[Tree\]](#) (show>system>ptp peer)

### Full Context

show system ptp peer

### Description

This command displays PTP information for a specific peer.

### Parameters

#### *ip-address*

Specifies the IPv4 or IPv6 address.

#### Values

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

#### *router-instance*

Displays the information for the specified router instance.

**Values** router-name – Base

vprn-svc-id – 1 to 2147483647

**service-name**

Specifies the service name, up to 64 characters, used to identify the router instance.

**detail**

Displays detailed information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output is an example of IPv6 peer information, and [Table 362: Show PTP Peer Router Detail Output](#) describes the output fields.

**Output Example**

```
show system ptp peer 1.1.1.1
```

```
=====
IEEE 1588/PTP Peer Information
=====
Router           : Base
IP Address       : 1.1.1.1
Announce Direction: rx
Admin State      : up                G.8275 Priority   : 128
Sync Interval    : 64 pkt/s
Local PTP Port   : 1                 PTP Port State   : master
monitorReceiver  : false
Clock Id         : ca45fffffe000000 Remote PTP Port   : 1
GM Clock Id      : ca45fffffe000000 GM Clock Class    : 6
GM Clock Accuracy: within 100 ns     GM Clock Variance : 0x4e5d (1.8E-15)
GM Clock Priority1: 128               GM Clock Priority2 : 128
Steps Removed    : 0
Tx Timestamp Point: port             Rx Timestamp Point: port
Last Tx Port     : 1/4/2              Last Rx Port      : 1/4/2
Port Asymmetry   : 0 ns               Port Asymmetry    : 0 ns
Best Master      : no                 Parent Clock       : no
Backup Source    : yes
Monitor Time State: acquiring         Changed: 2023/05/29 13:57:36
Last Packet Offset From Master : +1 ns      Last Calc: 2021/09/02 12:41:13
Last Packet Mean Path Delay    : +15 ns     Last Calc: 2021/09/02 12:41:13
APTS Asymmetry                 : +140,737,488 ms Last Calc       : 2023/05/29 13:57:36
Profile Name                    : Primary
Profile                          : ITU-T G.8275.2 Domain          : 44
=====
```

The following output is an example of detailed IPv6 peer information, and [Table 362: Show PTP Peer Router Detail Output](#) describes the output fields.

**Output Example**

```
show system ptp peer router detail
```

```
=====
IEEE 1588/PTP Peer Information
=====
```



```

Router Instance      : 5
IP Address          : 1111:2222:3333:4444:5555:70:1:4
Announce Direction : rx+tx
Admin State         : up                      G.8275 Priority   : 128
Sync Interval       : 64 pkt/s
Local PTP Port      : 1                      PTP Port State   : master
Clock Id            : ac5dffffffe0000000    Remote PTP Port  : 2
GM Clock Id         : ac5cffffffe0000000    GM Clock Class   : 6
GM Clock Accuracy   : within 100 ns          GM Clock Variance : 0x4e5d (1.8E-15)
GM Clock Priority1  : 128                    GM Clock Priority2 : 128
Steps Removed       : 1                      Parent Clock      : no
Tx Timestamp Point  : port                   Rx Timestamp Point : port
Last Tx Port        : 1/4/2                  Last Rx Port      : 1/4/2
Port Asymmetry      : 0 ns                   Port Asymmetry    : 0 ns
Best Master         : no                     Parent Clock       : no
Backup Source       : yes
APTS Asymmetry      : +140 ns                 Last Calc         : 2023/05/29 13:57:36
Profile Name        : Primary
Profile             : ITU-T G.8275.2         Domain            : 44
    
```

IEEE 1588/PTP Unicast Negotiation Information

IP Address	Dir	Type	Rate	Duration	State	Time
1111:2222:3333:4444:5555:70:1:4	Rx	Announce	1 pkt/2 s	300	Granted	09/01/2010 17:23:04
1111:2222:3333:4444:5555:70:1:4	Tx	Announce	1 pkt/2 s	300	Granted	09/01/2010 17:23:04

IEEE 1588/PTP Packet Statistics

	Input	Output
PTP Packets	253	11
Announce	243	1
Sync	0	0
Follow Up	0	0
Delay Request	0	0
Delay Response	0	0
Signaling	10	10
Request TLVs	6	4
Announce	6	4
Sync	0	0
Delay Response	0	0
Grant TLVs (Granted)	4	6
Announce	4	6
Sync	0	0
Delay Response	0	0
Grant TLVs (Rejected)	0	0
Announce	0	0
Sync	0	0
Delay Response	0	0
Cancel TLVs	0	0
Announce	0	0
Sync	0	0
Delay Response	0	0
Ack Cancel TLVs	0	0
Announce	0	0
Sync	0	0

Delay Response	0	0
Other TLVs	0	0
Other	0	0
Discards	0	0
Bad PTP domain	0	0
Alternate Master	0	0
Out Of Sequence	0	0
Peer Disabled	0	0
Other	0	0

The following output is an example of detailed IPv4 peer information, and [Table 362: Show PTP Peer Router Detail Output](#) describes the output fields.

### Output Example

```
show system ptp peer router detail

=====
IEEE 1588/PTP Peer Information
=====
Router Instance   : 5
IP Address        : 6.1.1.2
Announce Direction: rx
Admin State       : up                G.8275 Priority   : 128
Sync Interval     : 64 pkt/s
Local PTP Port    : 2                PTP Port State   : master
Clock Id          : ac5dfffffe000000 Remote PTP Port  : 2
GM Clock Id       : ac5cfffffe000000 GM Clock Class   : 6
GM Clock Accuracy : within 100 ns    GM Clock Variance: 0x4e5d (1.8E-15)
GM Clock Priority1: 128              GM Clock Priority2: 128
Steps Removed     : 0
Tx Timestamp Point: port             Rx Timestamp Point: port
Last Tx Port      : 1/1/2            Last Rx Port      : 1/1/2
Port Asymmetry    : 0 ns              Port Asymmetry    : 0 ns
Best Master       : no                Parent Clock       : no
Backup Source     : yes
APTS Asymmetry    : +140 ns           Last Calc         : 2023/05/29 13:57:36
Profile Name      : Primary
Profile           : ITU-T G.8275.2    Domain            : 44
=====

IEEE 1588/PTP Unicast Negotiation Information
=====
IP Address      Dir Type      Rate      Duration State      Time
-----
6.1.1.2        Rx Announce    1 pkt/2 s 300      Granted 09/01/2010 17:23:04
6.1.1.2        Tx Announce    1 pkt/2 s 300      Granted 09/01/2010 17:23:04
=====

IEEE 1588/PTP Packet Statistics
=====
-----
Input      Output
-----
PTP Packets
Announce   253      11
Sync       243      1
Follow Up  0         0
Delay Request 0         0
Delay Response 0         0
Signaling  10        10
Request TLVs
Announce   6         4
Announce   6         4
=====
```

```

Sync                                0          0
Delay Response                       0          0
Grant TLVs (Granted)                 4          6
Announce                              4          6
Sync                                  0          0
Delay Response                       0          0
Grant TLVs (Rejected)                0          0
Announce                              0          0
Sync                                  0          0
Delay Response                       0          0
Cancel TLVs                           0          0
Announce                              0          0
Sync                                  0          0
Delay Response                       0          0
Ack Cancel TLVs                      0          0
Announce                              0          0
Sync                                  0          0
Delay Response                       0          0
Other TLVs                            0          0
Other                                 0          0
Discards                             0          0
Bad PTP domain                       0          0
Alternate Master                     0          0
Out Of Sequence                      0          0
Peer Disabled                         0          0
Other                                 0          0
=====
    
```

Table 362: Show PTP Peer Router Detail Output

Label	Description
IEEE 1588/PTP Peer Information	
Router	The name of the router instance
IP Address	The IP address of the PTP peer
Announce Direction	The direction from which PTP announce messages were sent or received
Admin State	The administrative state of the PTP peer
G.8275 Priority	The priority used in the BTCA for the local port when the clock profile is G.8275.1 or G.8275.2
Sync Interval	The message rate for Sync messages for this peer
Local PTP Port	The number of local PTP ports
PTP Port State	The state of the PTP port
monitorReceiver	The monitorReceiver state
Clock Id	The clockIdentity value of the local PTP clock
Remote PTP Port	The number of remote PTP ports

Label	Description
GM Clock Id	The clockIdentity value of the grandmaster clock advertised by the parent clock
GM Clock Class	The clockClass value of the grandmaster clock advertised by the parent clock
GM Clock Accuracy	The clockAccuracy value of the grandmaster clock advertised by the parent clock
GM Clock Variance	The offsetScaledLogVariance value of the grandmaster clock advertised by the parent clock
GM Clock Priority1	The priority1 value of the grandmaster clock advertised by the parent clock
GM Clock Priority2	The priority2 value of the grandmaster clock advertised by the parent clock
Steps Removed	The number of steps removed the PTP peer is from a grandmaster clock
Tx Timestamp Point	The transmit timestamp point
Rx Timestamp Point	The receive timestamp point
Last Tx Port	The <i>port-id</i> of the last port from which a synchronization packet was transmitted
Last Rx Port	The <i>port-id</i> of the last port into which a synchronization packet was received
Port Asymmetry	The configured asymmetry for the port (either Tx or Rx port)
Best Master	Indicates if this peer was selected as the best master clock by the BTCA
Parent Clock	Indicates if this is the parent clock. May differ from the Best Master if there is a local GNSS.
Backup Source	Indicates if this port is operating as a backup slave to the parent clock
Monitor Time State	Time recovery state of the monitored PTP port or peer
Last Packet Offset from Master	The offsetFromMaster calculated from the last packet exchange with the parent clock
Last Packet Mean Path Delay	The meanPathDelay calculated from the last packet exchange with the parent clock
APTS Asymmetry	The asymmetry computed by the backup source. This is used to compensate if the clock switches to this backup.

Label	Description
Offset from LclClk	The offset from master computed by the PTP source. This is the difference between the backup PTP source and the local clock set by the GNSS. This is similar to APTS Asymmetry but when using G.8275.1 profile.
Last Calc	The date and time at which the APTS Asymmetry or Offset from LclClk was last updated
Profile Name	The profile in use with this peer
Profile	The underlying standard profile used in the profile identified by profile name
Domain	The domain number used for this peer
IEEE 1588/PTP Unicast Negotiation Information	
Dir	The direction (transmitted or received) of the unicast negotiation packet
Type	The unicast negotiation packet type
Rate	The rate of packet transmission or reception
Duration	The duration of the packet transmission or reception interval, in seconds
State	The state of the negotiation
Time	The date and time that the negotiation state was changed
IEEE 1588/PTP Packet Statistics	
Input	The number of input packets within the specified category
Output	The number of output packets within the specified category

## peer

### Syntax

**peer** *ip-address* [detail]

### Context

[\[Tree\]](#) (show>service>id>ptp peer)

### Full Context

show service id ptp peer

## Description

This command displays PTP information for a specific peer.

## Parameters

### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

### *detail*

Displays detailed information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following command displays PTP information for a single peer and [Table 363: Output fields: service PTP peer](#) describes the output fields.

```
show service id ptp peer detail
```

```
=====
IEEE 1588/PTP Peer Information
=====
Router Instance      : 5
IP Address           : 6.1.1.2           Announce Direction : rx+tx
Admin State          : up                G.8265.1 Priority   : n/a
Sync Interval        : 64 pkt/s
Local PTP Port       : 2                PTP Port State      : passive
Clock Id             : ac5dfffffe000000  Remote PTP Port     : 2
GM Clock Id          : ac5cfffffe000000  GM Clock Class      : 13
GM Clock Accuracy    : 0xfe (unknown)    GM Clock Variance   : ffff (not computed)
GM Clock Priority1   : 128                GM Clock Priority2   : 128
Steps Removed        : 1                Parent Clock         : no
Tx Timestamp Point   : port              Rx Timestamp Point   : port
Last Tx Port         : 1/1/2             Last Rx Port         : 1/1/2
=====

IEEE 1588/PTP Unicast Negotiation Information
=====
IP Address    Dir Type    Rate          Duration State    Time
-----
6.1.1.2      Rx Announce  1 pkt/2 s    300      Granted 09/01/2010 17:23:04
6.1.1.2      Tx Announce  1 pkt/2 s    300      Granted 09/01/2010 17:23:04
=====

IEEE 1588/PTP Packet Statistics
=====
                                     Input          Output
-----
PTP Packets                          253            11
Announce                             243            1
Sync                                  0              0
Follow Up                             0              0
Delay Request                         0              0
Delay Response                         0              0
=====
```

Signaling	10	10
Request TLVs	6	4
Announce	6	4
Sync	0	0
Delay Response	0	0
Grant TLVs (Granted)	4	6
Announce	4	6
Sync	0	0
Delay Response	0	0
Grant TLVs (Rejected)	0	0
Announce	0	0
Sync	0	0
Delay Response	0	0
Cancel TLVs	0	0
Announce	0	0
Sync	0	0
Delay Response	0	0
Ack Cancel TLVs	0	0
Announce	0	0
Sync	0	0
Delay Response	0	0
Other TLVs	0	0
Other	0	0
Discards	0	0
Bad PTP domain	0	0
Alternate Master	0	0
Out Of Sequence	0	0
Peer Disabled	0	0
Other	0	0
=====		

Table 363: Output fields: service PTP peer

Label	Description
IEEE 1588/PTP Peer Information	
Router	The name or ID of the router instance
IP Address	The IP address of the PTP peer
Announce Direction	The configured directions (transmit, receive, or both) for Announce messages
Admin State	The administrative state of the PTP peer
G.8265.1 Priority	Displays if the G.8265.1 profile has priority
Local PTP Port	The local PTP port number
PTP Port State	The PTP port state
Clock ID	The ID of the referenced clock
Remote PTP Port	The remote PTP port number
GM Clock Id	The clockIdentity value of the grandmaster clock advertised by the parent clock

Label	Description
GM Clock Class	The clockClass value of the grandmaster clock advertised by the parent clock
GM Clock Accuracy	The clockAccuracy value of the grandmaster clock advertised by the parent clock
GM Clock Variance	The offsetScaledLogVariance value of the grandmaster clock advertised by the parent clock
GM Clock Priority1	The priority1 value of the grandmaster clock advertised by the parent clock
GM Clock Priority2	The priority2 value of the grandmaster clock advertised by the parent clock
Steps Removed	The number of steps removed the PTP peer is from a grandmaster clock
Parent Clock	Displays whether a parent clock is referenced
IEEE 1588/PTP Unicast Negotiation Information	
IP Address	The IP address of the PTP peer
Dir	The direction (transmitted or received) of the unicast negotiation packet
Type	The unicast negotiation packet type
Rate	The rate of packet transmission or reception
Duration	The duration of the packet transmission or reception interval, in seconds
State	The state of the negotiation
Time	The date and time that the negotiation state was changed
IEEE 1588/PTP Packet Statistics	
Input	The number of input packets within the specified category
Output	The number of output packets within the specified category
PTP Packets	The total number of PTP packets across all PTP packet categories
Announce	The number of PTP Announce packets
Sync	The number of PTP Sync packets
Follow Up	The number of PTP Follow Up packets



Label	Description
Delay Request	The number of PTP Delay Request packets
Delay Response	The number of PTP Delay Response packets
Signaling	The number of PTP signaling packets
Request TLVs	The total number of Request TLV packets of all types (Announce, Sync, and Delay Response)
Grant TLVs (Granted)	The total number of granted Grant TLV packets of all types (Announce, Sync, and Delay Response)
Grant TLVs (Rejected)	The total number of rejected Grant TLV packets of all types (Announce, Sync, and Delay Response)
Cancel TLVs	The total number of Cancel TLV packets of all types (Announce, Sync, and Delay Response)
Ack Cancel TLVs	The total number of Ack Cancel TLV packets of all types (Announce, Sync, and Delay Response)
Announce	The number of Announce packets of the specified TLV category
Sync	The number of Sync packets of the specified TLV category
Delay Response	The number of Delay Response packets of the specified TLV category
Other TLVs	The total number of other TLV packets that do not match the other categories or types
Other	The number of PTP packets that do not match the other categories or types
Discards	The total number of discarded packets across all categories
Bad PTP domain	The number of packets discarded because of a bad PTP domain
Alternate Master	The number of packets discarded because of an alternate master being referenced
Out of Sequence	The number of out-of-sequence packets discarded
Peer Disabled	The number of packets discarded because of the peer being disabled
Other	The number of packets discarded for reasons not matching the other categories or types

## peer

### Syntax

**peer** *ip-address*

### Context

[\[Tree\]](#) (clear>redundancy>multi-chassis>mcr>statistics peer)

### Full Context

clear redundancy multi-chassis mc-ring statistics peer

### Description

This command clears multi-chassis ring peer statistics.

### Parameters

#### *ip-address*

Clears ring peer statistics for the specified IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x – [0 to FFFF] H
    - d – [0 to 255] D

### Platforms

All

## peer

### Syntax

**peer** *ip-address* [**router** *router-instance* | **service name** *service-name*] **statistics**

### Context

[\[Tree\]](#) (clear>system>ptp peer)

### Full Context

clear system ptp peer

## Description

This command clears PTP peer information.

## Parameters

### *ip-address*

Specifies the IPv4 or IPv6 address.

#### Values

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

### *router-instance*

Clears information that is specific to a virtual router instance, up to 32 characters.

### *service-name*

Clears information that is specific to a service name, up to 64 characters.

### *statistics*

Clears statistics information of the specified IP address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

peer

## Syntax

**peer** [*ip-int-name*]

## Context

[\[Tree\]](#) (show>router>ripng peer)

## Full Context

show router ripng peer

## Description

This command displays RIPng peer information.

## Parameters

### *ip-int-name*

Displays peer information for peers on the specified IPv6 interface.

**Default** Display peers for all interfaces

## Platforms

All

## Output

The following output is an example of RIPng peer information.

### Output Example

```
*A:Dut-C>config>router>if# show router ripng peer
=====
RIP-NG Peers
=====
Peer IP Addr          Version  Last Update
  Interface Name
-----
fe80::6629:ffff:fe00:0
  one                 ripNg-v1  0
fe80::6629:ffff:fe00:0
  two                 ripNg-v1  0
fe80::6629:ffff:fe00:0
  three              ripNg-v1  0
fe80::6629:ffff:fe00:0
  four              ripNg-v1  0
-----
No. of Peers: 4
=====
*A:Dut-C>config>router>if# show router ripng peer "one"
=====
RIP-NG Peers
=====
Peer IP Addr          Version  Last Update
  Interface Name
-----
fe80::6629:ffff:fe00:0
  one                 ripNg-v1  0
-----
No. of Peers: 1
=====
```

## peer

### Syntax

```
peer [peer-address {ip-address | ipv6-address}] [router router-instance] [ local-address {ip-address |
  ipv6-address}]
```

### Context

[\[Tree\]](#) (show>subscr-mgmt>pfcsp peer)

### Full Context

```
show subscriber-mgmt pfcsp peer
```

## Description

This command displays connectivity details for a specific PFCP connection to a peer and the PFCP association to which the peer is linked. Multiple connections can exist per PFCP association.

## Parameters

### *ip-address*

Specifies the peer or local IPv4 address.

**Values** a.b.c.d

### *ipv6-address*

Specifies the peer or local IPv6 address.

**Values** x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x - [0 to FFFF]H  
d - [0 to 255]D

### *router-instance*

Specifies the identifier of the router where the peer is terminated.

**Values** *router-name* – base  
*vprn-svc-id* – 1 to 2147483647

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of output of the **show subscriber-mgmt PFCP peer** command.

### Output Example

```
A:BNG-UPF# show subscriber-mgmt pfcf peer
=====
PFCF Peers
=====
Peer router           : 990002
Peer Address         : 17.17.17.10
Local Address        : 192.0.2.11
Association          : bng-cpf
Path Mgmt State      : up
Restoration Timer Expiry : (Not Specified)
Restart Reason       : none
=====
No. of PFCF Peers: 1
=====
```

## peer

### Syntax

```
peer ip-address statistics
```

### Context

[\[Tree\]](#) (clear>service>id>ptp peer)

### Full Context

```
clear service id ptp peer
```

### Description

This command clears PTP peer information.

### Parameters

#### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

#### statistics

Clears statistics information of the specified peer.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## peer

### Syntax

```
peer [ip-address] statistics
```

### Context

[\[Tree\]](#) (clear>router>pcep>pcc peer)

### Full Context

```
clear router pcep pcc peer
```

### Description

This command clears PCEP PCC peer statistics.

## Parameters

### *ip-address*

Specifies the IP address.

**Values** a.b.c.d

### **statistics**

Clears PCEP PCC peer statistics.

## Platforms

All

## 18.31 peer-profile

### peer-profile

## Syntax

**peer-profile** [*profile-name*]

**peer-profile** *profile-name* **associations**

## Context

[\[Tree\]](#) (show subscr-mgmt gtp peer-profile)

## Full Context

show subscriber-mgmt gtp peer-profile

## Description

This command displays GTP peer profile information.

## Parameters

### *profile-name*

Specifies the name that identifies the profile.

### **associations**

Specifies the associated contexts for the specified peer profile.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of GTP peer profile information.

## Output Example

```

Node# show subscriber-mgmt gtp peer-profile
=====
GTP peer profiles
=====
Name                Description
-----
default              (Not Specified)
default_s11          (Not Specified)
-----
No. of profiles: 2
=====
Node# show subscriber-mgmt gtp peer-profile "default_s11"
=====
GTP peer profile "default_s11"
=====
Description          : (Not Specified)
Retransmit timeout (s) : 5
Retransmit retries   : 3
Keepalive interval (s) : 60
Keepalive retries    : 4
Keepalive retry timeout (s) : 5
Time to live         : 255
IPv4 MTU             : 1400
Interface type       : s11
Charging char home UE : (None)
Charging char roaming UE : (None)
Session hold time (s) : 30
Report WLAN location : disabled
Procotol Config Options I.E.: pco
Python policy        : (Not Specified)
Radio Access Technology type: wlan
Last management change : 05/31/2018 11:05:46
GGSN uplink GBR (Kbps) : 5000
GGSN uplink MBR (Kbps) : 5000
GGSN downlink GBR (Kbps) : 2000
GGSN downlink MBR (Kbps) : 2000
GGSN Alloc/Retention Prio : 1
GGSN uplink AMBR (Kbps) : (Not Specified)
GGSN downlink AMBR (Kbps) : (Not Specified)
GGSN last management change : 05/31/2018 11:05:46
PGW uplink GBR (Kbps) : 0
PGW uplink MBR (Kbps) : 0
PGW downlink GBR (Kbps) : 0
PGW downlink MBR (Kbps) : 0
PGW Alloc/Retention Prio : 1
PGW Qos Class ID      : 8
PGW uplink AMBR (Kbps) : 10000
PGW downlink AMBR (Kbps) : 20000
PGW last management change : 05/31/2018 11:05:46
MME uplink GBR (Kbps) : 0
MME uplink MBR (Kbps) : 0
MME downlink GBR (Kbps) : 0
MME downlink MBR (Kbps) : 0
MME Alloc/Retention Prio : 1
MME Qos Class ID      : 8
MME uplink AMBR (Kbps) : 10000
MME downlink AMBR (Kbps) : 20000
MME last management change : 05/31/2018 11:05:46
=====
    
```



## 18.32 peer-profile-map

### peer-profile-map

#### Syntax

**peer-profile-map**

#### Context

[\[Tree\]](#) (show>router>gtp>s11 peer-profile-map)

#### Full Context

show router gtp s11 peer-profile-map

#### Description

This command displays the peer profile mapping that is used to connect to S11 peers.

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of GTP peer profile map information.

#### Output Example

```
Node# show router 20 gtp s11 peer-profile-map
=====
Peer profile map
=====
Address prefix                               Profile
-----
0.0.0.0/0                                     default_s11
192.2.0.0/24                                 specific_profile
-----
No. of address prefixes: 2
=====
```

### peer-profile-map

#### Syntax

**peer-profile-map**

#### Context

[\[Tree\]](#) (show>router>gtp>uplink peer-profile-map)

### Full Context

show router gtp uplink peer-profile-map

### Description

This command displays the peer profile map.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 18.33 peers

```
peers
```

### Syntax

```
peers [router router-instance | service-name service-name] [detail]
```

### Context

[\[Tree\]](#) (show>system>ptp peers)

### Full Context

```
show system ptp peers
```

### Description

This command displays summary information for all the PTP peers.

### Parameters

#### ***router-instance***

Displays only the information for a specific router instance.

**Values**    router-name – Base  
              vprn-svc-id – 1 to 2147483647

#### ***service-name***

Specifies the service name, up to 64 characters, used to identify the router instance.

#### **detail**

Displays detailed information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following command displays PTP peers information and [Table 364: Output fields: PTP peers](#) describes the output fields.

```
show system ptp peers

=====
IEEE 1588/PTP Peer Information
=====
Router
  IP Address
                Anno Flow Admin State PTP Port State Parent Clock
-----
Base
  1.4.1.21
                tx      n/a      master      no
1
  1111:2222:3333:4444:5555:70:1:4
                rx+tx   up      master      no
  1111:2222:3333:4444:5555:70:1:5
                rx      up      slave      yes
2
  1.1.1.21
                tx      n/a      master      no
-----
No. of PTP Peers: 4
=====
```

The following command displays PTP peers router information and [Table 364: Output fields: PTP peers](#) describes the output fields.

```
show system ptp peers router Base

=====
IEEE 1588/PTP Peer Information
=====
Router
  IP Address
                Anno Flow Admin State PTP Port State Parent Clock
-----
Base
  1.4.1.21
                tx      n/a      master      no
-----
No. of PTP Peers: 1
=====
```

The following command displays PTP peers router information and [Table 364: Output fields: PTP peers](#) describes the output fields.

```
show system ptp peers router

=====
IEEE 1588/PTP Peer Information
=====
Router
  IP Address
                Anno Flow Admin State PTP Port State Parent Clock
```

```

-----
1
  1111:2222:3333:4444:5555:70:1:4
                rx+tx      up      master      no
  1111:2222:3333:4444:5555:70:1:5
                rx        up      slave       yes
-----
No. of PTP Peers: 2
=====
    
```

The following command displays detailed PTP peers information and [Table 364: Output fields: PTP peers](#) describes the output fields.

```

show system ptp peers detail

=====
IEEE 1588/PTP Peer Information
=====
Router      : Base
IP Address  : 1.4.1.21
Announce Direction: tx
Admin State : n/a                G.8265.1 Priority : n/a
Local PTP Port : 3                PTP Port State   : master
Clock Id    : ac65fffffe000000  Remote PTP Port  : 1
-----
Router      : 1
IP Address  : 1111:2222:3333:4444:5555:70:1:4
Announce Direction: rx+tx
Admin State : up                G.8265.1 Priority : n/a
Local PTP Port : 2                PTP Port State   : master
Clock Id    : ac5effffffe000000 Remote PTP Port  : 1
-----
Router      : 1
IP Address  : 1111:2222:3333:4444:5555:70:1:4
Announce Direction: rx
Admin State : up                G.8265.1 Priority : n/a
Local PTP Port : 1                PTP Port State   : slave
Clock Id    : ac5dfffffe000000  Remote PTP Port  : 1
GM Clock Id : ac5dfffffe000000  GM Clock Class   : 13
GM Clock Accuracy : unknown      GM Clock Variance : ffff (not computed)
GM Clock Priority1: 0            GM Clock Priority2: 128
Steps Removed : 0                Parent Clock      : yes
-----
Router      : 2
IP Address  : 1.1.1.21
Announce Direction: tx
Admin State : n/a                G.8265.1 Priority : n/a
Local PTP Port : 4                PTP Port State   : master
Clock Id    : ac65fffffe000000  Remote PTP Port  : 1
=====
    
```

The following command displays detailed PTP peers router information and [Table 364: Output fields: PTP peers](#) describes the output fields.

```

show system ptp peers router detail

=====
IEEE 1588/PTP Peer Information
=====
Router      : 1
    
```

```

IP Address      : 1.2.1.20
Announce Direction: rx+tx
Admin State    : up                G.8265.1 Priority : n/a
Local PTP Port : 2                PTP Port State   : master
Clock Id      : ac5effffffe000000 Remote PTP Port  : 1
-----
Router        : 1
IP Address    : 1.3.1.19
Announce Direction: rx
Admin State   : up                G.8265.1 Priority : n/a
Local PTP Port : 1                PTP Port State   : slave
Clock Id     : ac5dfffffe0000000 Remote PTP Port  : 1
GM Clock Id  : ac5dfffffe0000000 GM Clock Class   : 13
GM Clock Accuracy : unknown      GM Clock Variance : ffff (not computed)
GM Clock Priority1: 0            GM Clock Priority2 : 128
Steps Removed : 0                Parent Clock      : yes
=====
    
```

Table 364: Output fields: PTP peers

Label	Description
Router	The name of the router instance
IP Address	The IP address of the PTP peer
Announce Direction Anno Flow	The direction from which PTP announce messages were sent or received
Admin State	The administrative state of the PTP peer
G.8275 Priority	The priority used in the best master clock algorithm (BMCA) for the local PTP port when the clock profile is G.8275.x
Sync Interval	The network synchronization interval, in packets per second
Local PTP Port	The number of local PTP ports
PTP Port State	The state of the PTP port
Clock Id	The clockIdentity value of the local PTP clock
Remote PTP Port	The number of remote PTP ports
GM Clock Id	The clockIdentity value of the grandmaster clock advertised by the parent clock
GM Clock Class	The clockClass value of the grandmaster clock advertised by the parent clock
GM Clock Accuracy	The clockAccuracy value of the grandmaster clock advertised by the parent clock
GM Clock Variance	The offsetScaledLogVariance value of the grandmaster clock advertised by the parent clock

Label	Description
GM Clock Priority1	The priority1 value of the grandmaster clock advertised by the parent clock
GM Clock Priority2	The priority2 value of the grandmaster clock advertised by the parent clock
Steps Removed	The number of steps removed the PTP peer is from a grandmaster clock
Last Tx Port	The <i>port-id</i> of the last port from which a synchronization packet was transmitted
Last Rx Port	The <i>port-id</i> of the last port into which a synchronization packet was received
Port Asymmetry	The asymmetry value of the PTP peer, in nanoseconds
Best Master	Whether the clock has been deemed to be the best master clock
Parent Clock	Whether there is an external parent clock
APTS Asymmetry	The APTS asymmetry value of the PTP peer, in nanoseconds
Last Calc	The date and time of the last asymmetry value calculation
Profile Name	The name of the alternate profile configuration. If an alternate profile is not configured, Primary is displayed as the profile name.
Profile	The PTP profile used for the alternate profile configuration. <ul style="list-style-type: none"> <li>• g8275dot1-2014 — The PTP profile specified in the ITU-T G.8275.1 recommendation.</li> <li>• g8275dot2-2016 — The PTP profile specified in the ITU-T G.8275.2 recommendation.</li> </ul>
Domain	The domain in which PTP 1588 runs on the system.

## peers

### Syntax

**peers** [detail]

### Context

[\[Tree\]](#) (show>service>id>ptp peers)

## Full Context

```
show service id ptp peers
```

## Description

This command displays summary information for all the PTP peers.

## Parameters

### detail

Displays detailed information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following command displays PTP information for all peers.

```
show service id ptp peers
```

```
=====
IEEE 1588/PTP Peer Information
=====
Router
IP Address
Anno Flow Admin State PTP Port State Parent Clock
-----
1
1.2.1.20
rx+tx up master no
1.3.1.19
rx up slave yes
-----
No. of PTP Peers: 4
=====
```

The following command displays detailed PTP information for all peers.

```
show service id ptp peers detail
```

```
=====
IEEE 1588/PTP Peer Information
=====
Router      : 1
IP Address  : 1.2.1.20
Announce Direction: rx+tx
Admin State : up
Local PTP Port : 2
Clock Id    : ac5effffffe000000
G.8265.1 Priority : n/a
PTP Port State : master
Remote PTP Port : 1
-----
Router      : 1
IP Address  : 1.3.1.19
Announce Direction: rx
Admin State : up
Local PTP Port : 1
G.8265.1 Priority : n/a
PTP Port State : slave
```

```

Clock Id       : ac5dffffffe000000 Remote PTP Port   : 1
GM Clock Id   : ac5dffffffe000000 GM Clock Class    : 13
GM Clock Accuracy : unknown       GM Clock Variance : ffff (not computed)
GM Clock Priority1: 0              GM Clock Priority2 : 128
Steps Removed  : 0                Parent Clock      : yes
=====
    
```

Table 365: Output fields: service PTP peers

Label	Description
Router	The name of the router instance
IP Address	The IP address of the PTP peer
Announce Direction Anno Flow	The direction from which PTP announce messages were sent or received
Admin State	The administrative state of the PTP peer
G.8265 Priority	The priority used in the best master clock algorithm (BMCA) for the local PTP port when the clock profile is G.8265.x
Sync Interval	The network synchronization interval, in packets per second
Alarms	The alarms that are active for the PTP peer
Tx Timestamp Point	The transmission timestamp point
Rx Timestamp Point	The reception timestamp point
Last Tx Port	The <i>port-id</i> of the last port from which a synchronization packet was transmitted
Last Rx Port	The <i>port-id</i> of the last port into which a synchronization packet was received
Port Asymmetry	The asymmetry value of the PTP peer, in nanoseconds
Best Master	Whether the clock has been deemed to be the best master clock
Parent Clock	Whether there is an external parent clock
Profile Name	The name of the alternate profile configuration. If an alternate profile is not configured, Primary is displayed as the profile name.
Profile	The PTP profile used for the alternate profile configuration. <ul style="list-style-type: none"> <li>g8275dot1-2014 — The PTP profile specified in the ITU-T G.8275.1 recommendation.</li> <li>g8275dot2-2016 — The PTP profile specified in the ITU-T G.8275.2 recommendation.</li> </ul>



Label	Description
Domain	The domain in which PTP 1588 runs on the system.

## 18.34 peq

peq

### Syntax

**peq** [*peq-slot*] [**chassis** *chassis-id*] [**detail**]

### Context

[\[Tree\]](#) (show peq)

### Full Context

show peq

### Description

This command displays APEQ information.

### Parameters

#### *peq-slot*

Specifies the APEQ slot identifier.

**Values** 1 to 12

#### *chassis-id*

Specifies the chassis ID for the router chassis.

**Values** 1 to 2

#### **detail**

Displays detailed information.

### Platforms

7750 SR-12e, 7750 SR-s, 7950 XRS

### Output

The following outputs are examples of PEQ information, and [Table 366: Output Fields: show peq](#) describes the output fields.

#### Output Example: show peq

```
*A:Dut-A# show peq
=====
```

```
PEQ Summary
=====
```

Chassis/ Slot	Provisioned Type Equipped Type (if diff)	Admin State	Operational State	Input A B	Zone	Input Mode
1/1	apeq-dc-2000	up	down	Y Y	1	N/A
1/2	(not provisioned) apeq-dc-2000	up	unprovisioned	Y Y	1	N/A
1/3	apeq-dc-2000	up	up	Y Y	1	N/A
1/4	apeq-dc-2000	up	up	Y Y	1	N/A
1/5	apeq-dc-2000	up	up	Y Y	1	N/A
1/6	apeq-dc-2000	up	down	Y Y	1	N/A
1/7	apeq-dc-2000	up	down	Y Y	1	N/A
1/8	apeq-dc-2000	up	down	Y Y	1	N/A
1/9	apeq-dc-2000	up	down	Y Y	1	N/A
1/10	apeq-dc-2000	up	down	Y Y	1	N/A
1/11	apeq-dc-2000	up	down	Y Y	1	N/A
1/12	apeq-dc-2000	up	down	Y Y	1	N/A
2/1	apeq-dc-2000 (not equipped)	up	provisioned	- -	2	N/A

```
=====
```

**Output Example: show peq <peq-slot> detail**

```
*A:Dut-A# show peq 1 detail
=====
```

PEQ 1

```
=====
```

Slot	Provisioned Type Equipped Type (if diff)	Admin State	Operational State	Input A B	Zone	Input Mode
1	apeq-dc-2000	down	down	Y N	1	N/A

```
-----
```

Hardware Data

```
Part number           : 3HE07114AARA01
CLEI code             : IPUPAJHUAA
Serial number         : NS1250G0116
Manufacture date      : 12202012
Manufacturing deviations : (Not Specified)
Manufacturing assembly number: 8205320107
Time of last boot     : 2014/01/07 11:01:44
Current alarm state   : alarm active
=====
```

**Output Example: show peq detail**

In the following example, the entries for PEQ 2 to PEQ 11 are not shown.

```
*A:Dut-A# show peq detail
=====
```

PEQ 1

```
=====
```

Slot	Provisioned Type Equipped Type (if diff)	Admin State	Operational State	Input A B	Zone	Input Mode
1/1	apeq-dc-2000	down	down	Y N	1	N/A

```
-----
```

Hardware Data

```
Part number           : 3HE07114AARA01
CLEI code             : IPUPAJHUAA
Serial number         : NS1250G0116
Manufacture date      : 12202012
Manufacturing deviations : (Not Specified)
=====
```

```

Manufacturing assembly number: 8205320107
Time of last boot           : 2014/01/07 11:01:44
Current alarm state        : alarm active

=====

...

=====
PEQ 12
=====
Slot   Provisioned Type      Admin Operational  Input  Zone  Input
       Equipped Type (if diff)  State State         A  B    Mode
-----
12     apeq-dc-2000          up    up             Y  N    1    N/A

Hardware Data
Part number           : 3HE07114AARA01
CLEI code             : IPUPAJHUAA
Serial number         : NS1250G0115
Manufacture date      : 12202012
Manufacturing deviations : (Not Specified)
Manufacturing assembly number: 8205320107
Time of last boot     : 2014/01/07 11:01:44
Current alarm state   : alarm active

=====
    
```

**Output Fields: show peq**

Table 366: Output Fields: show peq

Label	Description
Slot	The number of the slot in which the APEQ is installed.
Provisioned Type Equipped Type (if different)	The APEQ type provisioned.
Admin State	The administrative state.
Operational State	The operational state.
Input	Specifies the input battery feed: A, or B.
Zone	Specifies the chassis power zone.
<b>Hardware Data:</b>	
Part number	The APEQ part number.
CLEI code	The APEQ CLEI code.
Serial number	The APEQ serial number.
Manufacture date	The date the APEQ was manufactured.
Manufacturing deviations	Specifies any manufacturing deviations.

Label	Description
Manufacturing assembly number	The APEQ assembly number.
Administrative state	Specifies the administrative state of the APEQ.
Operational state	Specifies the operational state of the APEQ.
Time of last boot	Indicates the time stamp of the last system restart.
Current alarm state	Indicates the current alarm state.

## 18.35 per-link-hash

### per-link-hash

#### Syntax

`per-link-hash [class {1 | 2 | 3}]`

`per-link-hash port port-id`

#### Context

[\[Tree\]](#) (show>lag per-link-hash)

#### Full Context

show lag per-link-hash

#### Description

This command displays LAG per-link hash information.

#### Parameters

*port-id*

Displays information about a specified LAG link-map profile.

**Values** 1 to 32 (VSR)  
1 to 64 (all other platforms)

#### Platforms

All

#### Output

The following output is an example of per-link hash SAP information.

[Table 367: Show Per-Link-Hash SAP Output Fields](#) describes per-link hash SAP output fields.

### Output Example

```

show lag 1 associations per-link-hash sap [class]
=====
SAP Associations
=====
SvcId      SAP                Active Link          Oper
Class     Weight
-----
10         lag-1:1            1/1/c1/1            1      111
10         lag-1:2            1/2/c1/1            2      222
10         lag-1:4            2/1/c1/4            2      333
10         lag-1:10           1/1/c1/1            3      444
10         lag-1:99           1/1/c1/1            2     1000
30         lag-1:31           1/1/c1/1            1        1
40         lag-1:41           1/2/c1/1            1     512
=====
Number of SAP associations: 7
=====
    
```

Table 367: Show Per-Link-Hash SAP Output Fields

Label	Description
SvcID	The associated service ID
SAP	The associated LAG ID
Active Link	The associated SAP ID
Oper Class	The per-link-hash class
Weight	The per-link-hash weight
Number of SAP associations	The total number of SAPs associated with the specified LAG ID

The following output is an example of per hash link Vport information.

Table 368: Show Per-Link-Hash Vport Output Fields describes per hash link Vport output fields.

```

show lag 1 associations per-link-hash vport
=====
VPort Associations
=====
VPort Name          Active Link
-----
my_vport_lag1       1/1/c1/1
my_vport_lag1bis    1/2/c1/1
my_vport_lag1_extra1 2/1/c1/4
my_vport_lag1_extra2 1/2/c1/1
my_vport_lag1_extra3 2/1/c1/4
=====
Number of VPort associations: 5
=====
    
```

Table 368: Show Per-Link-Hash Vport Output Fields

Label	Description
Vport Name	The name of the virtual port
Active Link	The associated SAP ID
Number of Vport associations	The total number of Vports associated with the specified LAG ID

The following output is an example of service subscriber host Vport information.

```

show service id subscriber-hosts detail
=====
Subscriber Host table
=====
Sap
  IP Address
  MAC Address          PPPoE-SID      Origin      Fwding State
  Subscriber
-----
lag-1:4
  10.2.2.41
  00:00:00:00:00:14    N/A          DHCP        Fwding
  subscr2
-----
Subscriber-interface : subscr_lag1
Group-interface     : group_lag1
Sub Profile          : sub_profile
SLA Profile          : sla_profile
Egress Vport        : my_vport_lag1
LAG Active Link     : 1/1/c1/1
-----
    
```

Table 369: Show Service Subscriber Hosts Detailed Output Fields

Label	Description
Sap	The LAG ID
IP Address	The subscriber host IP address
MAC Address	The subscriber host 48-bit MAC address
Subscriber	The associated subscriber profile name
PPPoE-SID	The PPPoE address of the segment identifier (SID)
Origin	The protocol or mechanism that created the service
Fwding State	The forwarding state
Subscriber-interface	The subscriber interface name associated with this service ID

Label	Description
Group-interface	The group interface name associated with this service ID
Sub Profile	The subscriber profile associated with this service ID
SLA Profile	The service level profile associated with this service ID
Egress Vport	The egress Vport name associated with this service ID
LAG Active Link	The associated SAP ID

## 18.36 per-peer-queuing

### per-peer-queuing

#### Syntax

`per-peer-queuing [detail]`

#### Context

[\[Tree\]](#) (show>system>security per-peer-queuing)

#### Full Context

show system security per-peer-queuing

#### Description

This command enables or disables CPM hardware queuing per peer. TTL security only operates when per-peer-queuing is enabled.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of per peer queuing information.

[Table 370: Show Per-Peer-Queuing Output Fields](#) describes per-peer-queuing output fields.

#### Output Example

```
A:ALA-48# show system security per-peer-queuing
=====
CPM Hardware Queuing
=====
```

```
Per Peer Queuing      : Enabled
Total Num of Queues   : 8192
Num of Queues In Use  : 2
=====
A:ALA-48# configure
```

Table 370: Show Per-Peer-Queuing Output Fields

Label	Description
Per Peer Queuing	Displays the status (enabled or disabled) of CPM hardware queuing per peer.
Total Num of Queues	Displays the total number of hardware queues.
Num of Queues In Use	Displays the total number of hardware queues in use.

## per-peer-queuing

### Syntax

**per-peer-queuing**

### Context

[\[Tree\]](#) (show>system>security per-peer-queuing)

### Full Context

show system security per-peer-queuing

### Description

This command displays the number of queues in use by the Qchip, which in turn is used by PPQ, CPM filter, SAP, and so on.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of per peer queuing information.

[Table 371: Show per-peer-queuing Output Fields](#) describes the per-peer-queuing output fields.

### Output Example

```
A:ALA-48>show>system>security# per-peer-queuing
=====
CPM Hardware Queuing
=====
Per Peer Queuing      : Enabled
Total Num of Queues   : 8192
Num of Queues In Use  : 0
```



```
=====
A:ALA-48>show>system>security#
```

Table 371: Show per-peer-queuing Output Fields

Label	Description
Per Peer Queuing	Displays whether per-peer-queuing is enabled or disabled. When enabled, a peering session is established and the router will automatically allocate a separate CPM hardware queue for that peer. When disabled, no hardware queuing per peer occurs.
Total Num of Queues	Displays the total number of CPM hardware queues.
Num of Queues In Use	Displays the number of CPM hardware queues that are in use.

## 18.37 perfect-stream

```
perfect-stream
```

### Syntax

```
perfect-stream
```

### Context

[\[Tree\]](#) (show>video perfect-stream)

### Full Context

```
show video perfect-stream
```

### Description

Commands in this context display perfect stream information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s

## 18.38 perform

perform

### Syntax

perform

### Context

[\[Tree\]](#) (tools perform)

### Full Context

tools perform

### Description

Commands in this context perform troubleshooting operations.

### Platforms

All

## 18.39 performance

performance

### Syntax

**performance mda mda-id last time-span time-unit**

### Context

[\[Tree\]](#) (tools>dump>wlan-gw>isa performance)

### Full Context

tools dump wlan-gw isa performance

### Description

This command generates an overview of the processing load and data processed by the specified ISA over a period of time. The following time periods are supported:

- last minute with seconds granularity
- last hour with minutes granularity
- last day with hours granularity

- last day with days granularity

## Parameters

### *mda-id*

Specifies the MDA for getting performance measurements in *slot/mda* format.

**Values** slot — 1 to 10  
 mda — 1 to 2

### *time-span*

Specifies the period for which to get measurements.

**Values** 1 to 60 (sec), 1 to 60 (min), 1 to 24 (hrs), 1 (days)

### *time-unit*

Specifies the period for which to get measurements.

**Values** sec, min, hrs, days

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s

## Output

This command displays performance information.

### Output Example

```
Node# /tools dump wlan-gw isa performance mda 2/1 last 5 min
=====
Measurements for last 5 minutes on Slot #2 MDA #1
=====
Timestamp          |      Wait      Idle      Work | Total jobs |      Total data
-----+-----+-----+-----+-----+-----
01/22/2018 10:14:04 |    99.47%    0.53%    0.00% |           0 |             - -
01/22/2018 10:13:41 |    99.46%    0.54%    0.00% |           3 |             3 Kb
01/22/2018 10:12:41 |    99.47%    0.53%    0.00% |           0 |             - -
01/22/2018 10:11:41 |    99.47%    0.53%    0.00% |           0 |             - -
01/22/2018 10:10:41 |    99.45%    0.55%    0.00% |           0 |             - -
=====
```

## performance

## Syntax

**performance mda** *mda-id* **last** *time-span* *time-unit*

## Context

**[Tree]** (tools>dump>nat>isa performance)

## Full Context

tools dump nat isa performance

## Description

This command generates an overview of the processing load and data processed by the specified ISA over a period of time. The following time periods are supported:

- last minute with seconds granularity
- last hour with minutes granularity
- last day with hours granularity
- last 31 days with days granularity

## Parameters

### *mda-id*

Specifies the MDA for getting performance measurements in format *slot/mda*.

**Values** slot — 1 to 10  
mda — 1 to 2

### *time-span*

Specifies the period for which to get measurements.

**Values** 1 to 60 (sec) | 1 to 60 (min) | 1 to 24 (hrs) | 1 to 31 (days)

### *time-unit*

Specifies the period for which to get measurements.

**Values** sec | min | hrs | days

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s

## 18.40 performance-monitoring

### performance-monitoring

## Syntax

**performance-monitoring record** *record*

## Context

[\[Tree\]](#) (show>system>ptp performance-monitoring)

## Full Context

```
show system ptp performance-monitoring
```

## Description

This command displays the collected performance monitoring information for the PTP clock.

## Parameters

### *record*

Specifies the time window for the record.

Values		
0		current 15-minute interval
1-96		15-minute interval within the last 24 hours
97		current 24-hour interval
98		previous 24-hour interval
501		current minute interval
502-516		one-minute interval within the last 15 minutes

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of PTP monitoring performance statistics and [Table 372: Output fields: PTP performance monitoring](#) describes the output fields.

### Output Example

```
show system ptp performance-monitoring record 503
```

```
=====
IEEE 1588 Performance Monitoring Statistics
=====
-----
Record
-----
Index           : 503
Valid           : Yes
Start time      : 2023/03/24 19:43:00 UTC
Complete        : Yes
Duration        : 1 minute
-----
Statistics
-----
offset-from-master
  average       : 0 ns
  minimum       : 0 ns
```

```

maximum      : +1 ns
stddev       :  0 ns

mean-path-delay
average      : +10 ns
minimum      : +10 ns
maximum      : +11 ns
stddev       :  0 ns

master-to-slave-delay
average      : +10 ns
minimum      : +10 ns
maximum      : +11 ns
stddev       :  0 ns

slave-to-master-delay
average      : +10 ns
minimum      : +10 ns
maximum      : +11 ns
stddev       :  0 ns
=====
  
```

Table 372: Output fields: PTP performance monitoring

Label	Description
IEEE 1588 Performance Monitoring Statistics	
Record	
Index	The name of the router instance
Valid	The IP address of the PTP peer
Start time	The direction from which PTP announce messages were sent or received
Complete	The administrative state of the PTP peer
Duration	The priority used in the best master clock algorithm (BMCA) for the local PTP port when the clock profile is G.8265.x
offset-from-master mean-path-delay master-to-slave-delay slave-to-master-delay	Parameters from the time recovery algorithm as defined in the IEEE1588-2019 standard
average minimum maximum stddev	The average, minimum, maximum, and standard deviation of the values over the time interval of the record

## 18.41 persistence

persistence

### Syntax

**persistence**

### Context

[\[Tree\]](#) (tools>perform persistence)

### Full Context

tools perform persistence

### Description

Commands in this context configure downgrade parameters.

### Platforms

All

## 18.42 persistent

persistent

### Syntax

**persistent**

### Context

[\[Tree\]](#) (show>system>telemetry persistent)

### Full Context

show system telemetry persistent

### Description

Commands in this context display persistent telemetry information.

### Platforms

All

## 18.43 pfc

pfc

### Syntax

pfc

### Context

[\[Tree\]](#) (show>subscr-mgmt pfc)

### Full Context

show subscriber-mgmt pfc

### Description

Commands in this context display all related PFCP information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.44 pfc-association

pfc-association

### Syntax

pfc-association *name* statistics

### Context

[\[Tree\]](#) (clear>subscr-mgmt pfc-association)

### Full Context

clear subscriber-mgmt pfc-association

### Description

This command clears all message statistics associated with the specified PFCP association.

### Parameters

*name*

Specifies the name of a PFCP association, up to 32 characters, for which information is cleared.



### statistics

Specifies that statistics for the specified PFCP association are cleared.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.45 pfc-session

### pfc-session

#### Syntax

```
pfc-session session-id session-id  
pfc-session sap sap-id mac mac-address
```

#### Context

[\[Tree\]](#) (clear>subscr-mgmt pfc-session)

#### Full Context

```
clear subscriber-mgmt pfc-session
```

#### Description

This command locally clears a PFCP session, either by providing the session ID or the associated SAP ID and MAC address.



#### Note:

This command does not delete the session on the BNG CPF and should only be used as a last attempt to delete the PFCP sessions. It is always recommended to first attempt to gracefully delete the session from the BNG CPF.

#### Parameters

##### *session-id*

Specifies the locally assigned PFCP session ID, up to 20 characters.

##### *sap-id*

Specifies the SAP ID associated with the session.

##### Values

null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : [ <i>qtag1</i>   <i>cp-conn-prof-id</i> ]
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : <i>qtag1</i> <b>cp-conn-prof-id</b> : <i>qtag2</i>   <b>cp-conn-prof-id</b> ]
<b>cp</b>	keyword

	<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>	
ima-grp	bundle-id [:vpi/vci   vpi   vpi1.vpi2   <b>cp.conn-prof-id</b> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port[.channel]</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-tunnel	eth-tunnel-id[: <i>eth-tun-sap-id</i> ]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>   <i>lag-string</i>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	*   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<i>tunnel-id.private</i>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
eth-sat-id	<b>esat-id</b> / <i>slot</i> / <i>port</i>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64

*sub-port*

a, b

**mac-address**

Specifies the MAC address associated with the session, in the form xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.46 pgw-edr

### pgw-edr

**Syntax**

**pgw-edr fields**

**Context**

[\[Tree\]](#) (show>app-assure>cflowd pgw-edr)

**Full Context**

show application-assurance cflowd pgw-edr

**Description**

This command displays the fields in the AA cflowd PGW-EDR template.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of AA cflowd PGW-EDR template fields, and [Table 373: Show PGW-EDR Template Output Fields](#) describes the output fields.

**Output Example**

```
show application-assurance cflowd pgw-edr fields
=====
Fields for Application Assurance cflowd pgw-edr template
=====
Name                               ID      Len Mode Dy Description
-----
aaApp                               32770  32  MRVL *  AA Application
aaAppGrp                            32771  32  MRVL *  AA Application Group
aaChargingGrp                       32888  32  MRVL *  AA Charging Group
aaProt                               32769  32  MRVL *  AA Protocol
aaSubTetheringState                 32896   1  MRVL *  AA subscriber tethering
```

anlCongestionState	32874	1	MRVL	*	state
anlTopology	32873	16	MRVL	*	access network location congestion state
anlType	32872	1	MRVL	*	access network location topology
apn	32876	33	MRV-	*	access network location type
apnExtended	32928	64	MRV-	*	access point name
bsid	32883	12	MRV-	*	extended access point name
cellId	32886	4	MRV-	*	base station id
chargeId	32877	4	MRV-	*	cell id
chargingChar	32901	2	MRV-	*	charging group id
customerId	32902	4	M---	*	3GPP charging characteristic
destinationIPv4Address	12	4	MRVL	.	Customer identifier
destinationIPv6Address	28	16	MRVL	.	Destination IPv4 address
destinationTransportPort	11	2	MRVL	.	Destination IPv6 address
deviceId	32865	2	MRVL	*	Destination transport port
deviceMfgId	32866	2	MRVL	*	device ID
deviceOsId	32867	2	MRVL	*	device manufacturer ID
deviceOsVer1	32869	1	MRVL	*	device operating system ID
deviceOsVer2	32870	1	MRVL	*	device operating system version number 1
deviceOsVer3	32871	1	MRVL	*	device operating system version number 2
flowAttr_abr_service	32890	1	MRVL	*	device operating system version number 3
flowAttr_audio	32891	1	MRVL	*	flow attribute: abr service
flowAttr_download	32893	1	MRVL	*	flow attribute: audio
flowAttr_encrypted	32892	1	MRVL	*	flow attribute: download
flowAttr_realtime_communication	32895	1	MRVL	*	flow attribute: encrypted
flowAttr_upload	32894	1	MRVL	*	flow attribute: real time communication
flowAttr_video	32889	1	MRVL	*	flow attribute: upload
hostName	32864	64	MRVL	*	flow attribute: video
hostNameExtended	32920	101	MRVL	*	host name
imei	32897	8	MRV-	*	host name extended
imei-aes-128	32916	32	MRV-	*	International Mobile Equipment Identity
imei-aes-256	32919	32	MRV-	*	imei AES-128 encrypted
imei-sha-1	32910	20	MRV-	*	imei AES-256 encrypted
imei-sha-256	32913	32	MRV-	*	imei SHA-1 hashed
imsi	32879	8	MRV-	*	imei SHA-256 hashed
imsi-aes-128	32915	16	MRV-	*	international mobile subscriber identity
imsi-aes-256	32918	16	MRV-	*	imsi AES-128 encrypted
imsi-sha-1	32909	20	MRV-	*	imsi AES-256 encrypted
imsi-sha-256	32912	32	MRV-	*	imsi SHA-1 hashed
ipFamily	32868	1	MRVL	*	imsi SHA-256 hashed
ipTTL	192	1	MRVL	*	IP Family
mcc	32899	2	MRV-	*	IP packet time to live
mnc	32878	2	MRV-	*	Mobile country code
msisdn	32880	8	MRV-	*	mobile network code
msisdn-aes-128	32914	16	MRV-	*	mobile station international subscriber directory number
msisdn-aes-256	32917	16	MRV-	*	msisdn AES-128 encrypted
msisdn-sha-1	32908	20	MRV-	*	msisdn AES-256 encrypted
msisdn-sha-256	32911	32	MRV-	*	msisdn SHA-1 hashed
observationPointId	138	4	MRVL	.	msisdn SHA-256 hashed
octetTotalCount	85	8	MRVL	.	Observation point Id
pgw-ggsnAddr	32882	16	MRV-	*	Octet total count
					public data network

```

plmnid          32903  4  MRV-  *  gateway
                Public land mobile
                network identifier
postIpPrecedence 257    1  MRVL  *  Post IP precedence
pra-id         32940  4  M---  *  presence reporting area ID
protocolIdentifier 4      1  MRVL  .  Protocol Identifier
ratType       32884  2  MRV-  *  radio access technology
                type
regionId       32885  2  MRV-  *  region id
roamingStatus  32898  1  M---  *  Roaming status
sessionDirection 32781  1  MRVL  .  Session Direction
sessionEndSeconds 32875  4  MRVL  *  session end time
sessionStartSeconds 32863  4  MRVL  *  session start time
sgw-sgsnAddr  32881  16  M---  *  serving gateway
sourceIPv4Address 8      4  MRVL  .  Source IPv4 address
sourceIPv6Address 27     16  MRVL  .  Source IPv6 address
sourceTransportPort 7      2  MRVL  .  Source transport port
timeZone      32887  2  M---  *  time zone
uli           32900  18  MRV-  *  User location information
wireless-device-os-id 32941  1  MRV-  *  wireless device operating
                system ID
wireless-device-type-id 32942  1  MRV-  *  wireless device type ID
-----
Legend :
Mode (aa-sub-scale mode)  M mobile-gateway
                        R residential
                        V vpn
                        L lightweight-internet
Dy (dynamic field)       . always included in this record type
                        * can be dynamically included in this record type
=====
    
```

Table 373: Show PGW-EDR Template Output Fields

Label	Description
Name	Displays the name of the template field.
ID	Displays the ID of the template field.
Len	Displays the string length of the template field.
Mode	Displays the mode: <ul style="list-style-type: none"> <li>• M — mobile gateway</li> <li>• R — residential</li> <li>• V — VPN</li> <li>• L — lightweight Internet</li> </ul>
Dy	Displays whether the field is dynamic: <ul style="list-style-type: none"> <li>• . — always included in this record type</li> <li>• * — can be dynamically included in this record type</li> </ul>
Description	Displays the description of the template field.

## 18.47 pim

pim

### Syntax

pim

### Context

[\[Tree\]](#) (clear>router pim)

### Full Context

clear router pim

### Description

Commands in this context clear and reset PIM entities.

### Platforms

All

pim

### Syntax

pim

### Context

[\[Tree\]](#) (show>router pim)

### Full Context

show router pim

### Description

Commands in this context display PIM related information.

### Platforms

All

## pim

### Syntax

pim

### Context

[\[Tree\]](#) (tools>perform>router pim)

### Full Context

tools perform router pim

### Description

This command enables tools to perform certain PIM tasks.

### Platforms

All

## pim

### Syntax

pim

### Context

[\[Tree\]](#) (monitor>router pim)

### Full Context

monitor router pim

### Description

This command monitors commands for the PIM instance.

### Platforms

All

## 18.48 pim-policy

```
pim-policy
```

### Syntax

```
pim-policy
```

```
pim-policy name associations
```

### Context

```
[Tree] (show>subscr-mgmt pim-policy)
```

### Full Context

```
show subscriber-mgmt pim-policy
```

### Description

This command displays PIM policy information.

### Parameters

*name*

Specifies the PIM policy name, up to 32 characters.

**associations**

Displays information associated with the policy.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.49 pim-snooping

```
pim-snooping
```

### Syntax

```
pim-snooping
```

### Context

```
[Tree] (show>service>id pim-snooping)
```

### Full Context

```
show service id pim-snooping
```



### Description

Commands in this context display PIM snooping information.

### Platforms

All

pim-snooping

### Syntax

pim-snooping

### Context

[\[Tree\]](#) (clear>service>id pim-snooping)

### Full Context

clear service id pim-snooping

### Description

Commands in this context clear PIM snooping information.

### Platforms

All

## 18.50 ping-template

ping-template

### Syntax

ping-template *template-name*

ping-template

### Context

[\[Tree\]](#) (show>test-oam>icmp ping-template)

### Full Context

show test-oam icmp ping-template

## Description

This command displays a summary of configured ping templates and the total number service interfaces that reference the template. By specifying template name, the values for the specified interface and the total and active references for that specific template are displayed.

## Parameters

### *template-name*

Specifies the name of the ping template to be queried, up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of ping template information.

### Output Example

```
show test-oam icmp ping-template
=====
Ping Templates
=====
Name                                                    IP Refs
-----
base-template                                           21
-----
No. of ping templates: 1
=====
show test-oam icmp ping-template base-template
=====
Tpl Name :   base-template
=====
Description      : Basic standard template
Dscp              : ncl
Dot1p            : 7
Interval         : 60
Timeout          : 5
Failure Threshold : 3
React Interval   : 1
React Fail Thresh : 3
React Timeout    : 1
React Threshold  : 3
Size             : 56
TTL              : 1
-----
Active Refs      : 20
Total Refs       : 21
=====
```

## 18.51 ping-template-sync

```
ping-template-sync
```

### Syntax

```
ping-template-sync template-name
```

### Context

[\[Tree\]](#) (tools>perform>test-oam>icmp ping-template-sync)

### Full Context

```
tools perform test-oam icmp ping-template-sync
```

### Description

This command updates all values for service IP interfaces that reference the specified **config>test-oam>icmp>ping-template** *template-name*. Changes to the **ping-template** in this context are not automatically pushed to service IP interfaces. Values imported by the service interface are those configured when the service IP interface referenced the ping- template.

### Parameters

***template-name***

Specifies the ping template name, up to 64 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 18.52 ping-template-using

```
ping-template-using
```

### Syntax

```
ping-template-using [template-name]
```

### Context

[\[Tree\]](#) (show>test-oam>icmp ping-template-using)

### Full Context

```
show test-oam icmp ping-template-using
```

## Description

This command displays information about service IP interfaces that reference a ping template, the associated router instance, and the administrative state of the ping template under that interface.

## Parameters

### *template-name*

Displays the interfaces mapped to the **ping-template** *template-name*, up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example ping template output information.

### Output Example

```
show test-oam icmp ping-template-using
=====
Ping Templates
=====
Template Name          Router Instance      Admin
Interface Name
-----
base-template
int-PE-2-CE-101       vprn12101           up
base-template
int-PE-2-CE-103       vprn12103           up
base-template
int-PE-2-CE-104       vprn12104           up
base-template
int-PE-2-CE-105       vprn12105           up
base-template
int-PE-2-CE-106       vprn12106           up
base-template
int-PE-2-CE-107       vprn12107           up
base-template
int-PE-2-CE-108       vprn12108           up
base-template
int-PE-2-CE-109       vprn12109           up
base-template
int-PE-2-CE-110       vprn12110           up
base-template
int-PE-2-CE-111       vprn12111           up
base-template
int-PE-2-CE-112       vprn12112           up
base-template
int-PE-2-CE-113       vprn12113           up
base-template
int-PE-2-CE-114       vprn12114           up
base-template
int-PE-2-CE-115       vprn12115           up
base-template
int-PE-2-CE-116       vprn12116           up
base-template
int-PE-2-CE-117       vprn12117           up
base-template
int-PE-2-CE-118       vprn12118           up
base-template
```

```

int-PE-2-CE-119          vprn12119          up
base-template
int-PE-2-CE-120          vprn12120          up
base-template
int-PE-2-CE-121          vprn12121          down
base-template
int-PE-2-CE-122          vprn12122          up
=====
    
```

Table 374: [Show test-oam icmp ping-template-using Output Fields](#) describes ping template fields.

Table 374: Show test-oam icmp ping-template-using Output Fields

Label	Description
Template Name	The template name
Router Instance	The router instance name
Admin	The administrative state
Interface Name	The interface name

## 18.53 pip

```
pip
```

### Syntax

```
pip
```

### Context

[\[Tree\]](#) (clear>service>statistics>id pip)

### Full Context

```
clear service statistics id pip
```

### Description

This command clears the Provider Internal Port statistics for this service.

### Platforms

All

## 18.54 policer

```
policer
```

### Syntax

```
policer
```

```
policer policer-name [detail]
```

```
policer summary
```

### Context

[\[Tree\]](#) (show>app-assure>group policer)

### Full Context

```
show application-assurance group policer
```

### Description

This command displays application-assurance policer information.

### Parameters

#### *policer-name*

Displays information about the specified policer.

#### **detail**

Displays detailed information about policers on this node.

#### **summary**

Displays summarized information about policers on this node.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of the **policer** command information.

#### Output Example

```
show application-assurance group 1 policer <policer-name> detail
```

```
=====
```

```
Policer Instance "1m-dwn"
```

```
=====
```

```
Description      : (Not Specified)
Type              : dual-bucket-bandwidth
Granularity       : subscriber
Adaptation Rule  : pir closest cir closest
```

```
Active tod-override : none
```

```
PIR : max          Oper PIR : max
CIR : 0 kbps       Oper CIR : 0 kbps
MBS : 20000 KB     Oper MBS : 20000 KB
CBS : 0 KB         Oper CBS : 0 KB

No. of tod-overrides : 2
-----
Time of Day Override Instance 10
-----
Description : (Not Specified)
Admin State : in-service

Occurrence : daily (monday tuesday wednesday thursday friday)
Start time  : 19:00
End time    : 22:00

PIR      : max
CIR      : 0 kbps
MBS      : 10000 KB
CBS      : 0 KB
-----
Time of Day Override Instance 20
-----
Description : (Not Specified)
Admin State : in-service

Occurrence : daily (sunday saturday)
Start time  : 19:00
End time    : 22:00

PIR      : max
CIR      : 0 kbps
MBS      : 5000 KB
CBS      : 0 KB
=====
```

### Output Example

```
*A:Dut-C>show>app-assure>group# policer "test"
=====
Policer Instance "test"
=====
Description      : (Not Specified)
Type             : single-bucket-bandwidth
Granularity      : access-network-location
Action           : permitDeny
Adaptation Rule  : pir closest
Rate-Percentage  : 10
=====
```

## policer

### Syntax

**policer** *policer-name* **day** *day* **time** *time-of-day*

### Context

**[Tree]** (tools>dump>app-assure>group policer)

## Full Context

tools dump application-assurance group policer

## Description

This command displays rates for the policer for a specific day and time.

## Parameters

### *policer-name*

Specifies an existing policer name up to 256 characters in length.

### *day day*

Specifies a day to display policer rates.

**Values**   sunday, monday, tuesday, wednesday, thursday, friday, saturday

### *time time-of-day*

Specifies a time of day (in hours and minutes) to display policer rates.

**Values**   hh : 0 to 24  
            mm : 0, 15, 30, 45

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

policer

## Syntax

policer

## Context

[\[Tree\]](#) (show>qos policer)

## Full Context

show qos policer

## Description

Commands in this context display QoS policer information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR



## 18.55 policer-control-policy

policer-control-policy

### Syntax

**policer-control-policy** [*policy-name*] [**association**]

### Context

[\[Tree\]](#) (show>qos policer-control-policy)

### Full Context

show qos policer-control-policy

### Description

This command displays policer control policy information.

### Parameters

***policy-name***

Specifies the policer control policy name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## 18.56 policer-hierarchy

policer-hierarchy

### Syntax

**policer-hierarchy**

### Context

[\[Tree\]](#) (show>qos policer-hierarchy)

### Full Context

show qos policer-hierarchy

### Description

This command displays policer hierarchy information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## 18.57 policers

policers

### Syntax

policers

### Context

[Tree] (show>app-assure>group>aa-sub policers)

### Full Context

show application-assurance group aa-sub policers

### Description

This command displays policer configuration information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of the **policers** command.

### Output Example

```
A:cpm-a>show>app-assure>group>aa-sub# policers
=====
Application-Assurance Subscriber Policer Summary
=====
AA-Subscriber      : Alex (esm)
-----
Type: single-bucket-bandwidth Direction: subscriber-to-network
-----
AQP  Policer                Resources Exceeded?
-----
61   SuspectUp_policer      N
-----
Type: single-bucket-bandwidth Direction: network-to-subscriber
-----
AQP  Policer                Resources Exceeded?
-----
62   SuspectDown_policer    N
-----
Policer usage counts:
single-bucket-bandwidth
subscriber-to-network  1    out of    32
```

```
network-to-subscriber 1 out of 32
dual-bucket-bandwidth
subscriber-to-network 0 out of 1
network-to-subscriber 0 out of 1
flow-count-limit 0 out of 8
flow-rate-limit 0 out of 8
=====
A:cpm-a>show>app-assure>group>aa-sub#
```

## 18.58 policy

### policy

#### Syntax

**policy**

#### Context

[\[Tree\]](#) (show>app-assure>group policy)

#### Full Context

show application-assurance group policy

#### Description

Commands in this context display application-assurance policy configuration information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### policy

#### Syntax

**policy** [*policy-name* [**bundle** *bundle-name*] [**protocol** *protocol-name*] [**interface** *if-name*] [**detail**]]

#### Context

[\[Tree\]](#) (show>router>mcac policy)

#### Full Context

show router mcac policy

#### Description

This command displays MCAC policy information.

## Parameters

***policy-name***

Specifies an existing multicast CAC (MCAC) policy name.

***bundle bundle-id***

Specifies an existing multicast bundle name.

***protocol protocol-name***

specifies an applicable protocol to display.

**Values** igmp, pim, igmpSnpng

***interface if-name***

Specifies an interface name to display.

***detail***

Displays detailed information.

## Platforms

All

## Output

The following output is an example of MCAC policy information.

### Output Example

```
*A:ALA-48>show>router>mcac# policy
=====
Multicast CAC Policies
=====
Policy                Description
-----
btv_fr                foreign TV offering
btv_vl                eastern TV offering
policy1               this is policy1
policy2               this is policy 2
-----
Policies : 4
=====
*A:ALA-48>show>router>mcac#

*A:ALA-48>show>router>mcac# policy btv_fr
=====
Multicast CAC policy
=====
Policy      : btv_fr
Description : foreign TV offering
Default Action : discard
Bundle(s)   : FOR
=====
*A:ALA-48>show>router>mcac#
```

## policy

### Syntax

**policy admin**

**policy as-path-group** [*asp-group-name*]

**policy as-path** [*asp-name*]

**policy community** [*community-name*]

**policy damping** [*damping-profile-name*]

**policy exclusive-access**

**policy global-variables**

**policy** [*plcy-name*] [**expand-variables**]

**policy prefix-list** [*prefix-list-name*]

**policy route-distinguisher-list** [*rd-list-name*]

**policy** *plcy-name* **sub-policy entry** *entry-id* [**name** *subpol-name*]

**policy** *plcy-name* **sub-policy entry** *entry-id* **name** *subpol-name* **entry-2** *entry-id* **name-2** *subpol-name*

**policy** *plcy-name* **sub-policy entry** *entry-id* **name** *subpol-name* **entry-2** *entry-id* **name-2** *subpol-name*  
**entry-3** *entry-id* **name-3** *subpol-name*

### Context

[\[Tree\]](#) (show>router policy)

### Full Context

show router policy

### Description

This command displays configured policy statement information.

### Parameters

#### admin

When this keyword is specified, the entire policy option configuration is displayed, including any uncommitted configuration changes. This command is similar to the **info** command.



#### Note:

This parameter is not available in the MD-CLI.

#### as-path

When this keyword is specified, the parameter displays configured as-path regular expressions (optionally filtered by name).

#### as-path-group

When this keyword is specified, the command displays configured as-path-groups, optionally filtered by name.

### **community**

When this keyword is specified, the command displays configured community lists, optionally filtered by name.

### **damping**

When this keyword is specified, the information about the route policy damping configurations is displayed.

### **entry *entry-id***

Displays the configuration (with parameter value substitution) of the subroutine policy called by the entry with entry ID.

### **exclusive-access**

Displays the policy that edits exclusive access and lock information.



#### **Note:**

This parameter is not available in the MD-CLI.

### **expand-variables**

Displays the variables that are replaced with values in main policies or in sub-policies.

### **prefix-list *name***

Displays the prefix lists configured in the route policy.

### **policy *name***

Displays information similar to the info command for a specific policy-statement. If a *name* is provided, the matching policy-statement displays. If no *statement* name is specified, a list of all policies statements and descriptions display.

### **route-distinguisher *rd-list-name***

Keyword to display all the configured route distinguisher lists. If an *rd-list-name* is provided, the specified route distinguisher list is displayed.

### **sub-policy**

When this keyword is specified, the configuration of a subroutine policy is displayed.

### ***subpol-name***

Specifies the policy name up to 64 characters.

### ***entry-id***

Specifies the numeric entry identifier of the policy.

**Values** 1 to 4294967295

## **Platforms**

All

## **Output**

[Table 375: Route Policy Output Fields](#) describes route policy output fields.

Use the following command to display all configured route policies.

```
show router policy
```

### Output Example

```

=====
Route Policies
=====
Policy                Description
-----
Direct And Aggregate  Policy Statement ABC
-----
Policies :
=====
    
```

Use the following command to display the entire policy option configuration, including any uncommitted configuration changes.

```
show router policy admin
```



**Note:** This command option is similar to the **info** command, which displays information about the route policies and parameters.

### Output Example

```

prefix-list "All-Routes"
  prefix 0.0.0.0/0 longer
  prefix 2.0.0.0/8 longer
  prefix 3.0.0.0/8 longer
  prefix 4.0.0.0/8 longer
  prefix 5.0.0.0/8 longer
  prefix 6.0.0.0/8 exact
  prefix 224.0.0.0/24 longer
  exit
  ...
    
```

Use the following command to display information about a specific route policy.

```
show router policy name
```

### Output Example

```

description "Policy Statement For 'BGP To RIP'"
  entry 10
    description "Entry For Policy 'BGP To RIP'"
    from
      protocol bgp
    exit
    to
      protocol rip
    exit
    action accept
      metric set 1
      next-hop 10.0.18.200
      tag 805
    exit
  exit
  default-action reject
    
```

Use the following command to display information about the route policy damping configurations.

```
show router policy damping
```

### Output Example

```
=====
Route Damping Profiles
=====
damping "TEST-LOW"
  half-life 22
  max-suppress 720
  reuse 10000
  suppress 15000
exit
damping "TEST-HIGH"
  half-life 22
  max-suppress 720
  reuse 1000
  suppress 5000
exit
damping "TEST-MEDIUM"
  half-life 22
  max-suppress 720
  reuse 5000
  suppress 11000
exit
=====
```

Use the following command to display information about the subroutine called by an entry of the route policy.

```
show router policy "poll" sub-policy entry 10 name "pol2"
```

### Output Example

```
=====
poll entry 10 sub-policies
=====
-----
Level1 Sub-policy : pol2   Parent-policy : poll, Parent-entry 10
-----
  entry 20
    from
      community "telnet"
    exit
  exit
=====
```

Table 375: Route Policy Output Fields

Label	Description
Policy	Displays a list of route policy names.
Description	Displays the description of each route policy.
Policies	The total number of policies configured.



## policy

### Syntax

**policy** [*policy-id* [**event** *event-type specific-qualifier*]]

### Context

[\[Tree\]](#) (show>vrrp policy)

### Full Context

show vrrp policy

### Description

This command displays VRRP priority control policy information.

If no command line options are specified, a summary of the VRRP priority control event policies displays.

### Parameters

#### *policy-id*

Displays information on the specified priority control policy ID.

**Default** All VRRP policies IDs

**Values** 1 to 9999

#### *event-type*

Displays information on the specified VRRP priority control event within the policy ID.

**Default** All event types and qualifiers

**Values** port-down, lag-port-down, host-unreachable, route-unknown, mc-ipsec-non-forwarding

#### *specific-qualifier*

Display information about the specified qualifier.

**Values** port-id, lag-id, host-ip-addr, route-prefix/mask, tunnel-group-id

### Platforms

All

### Output

**VRRP Policy Output** — The following output is an example of VRRP policy information, and [Table 376: Show VRRP Policy Output Fields](#) describes the fields.

Table 376: Show VRRP Policy Output Fields

Label	Description
Policy Id	The VRRP priority control policy associated with the VRRP virtual router instance  A value of 0 indicates that no control policy is associated with the virtual router instance
Current Priority & Effects	
Current Explicit	When multiple explicitly defined events associated with the priority control policy happen simultaneously, the lowest value of all the current explicit priorities will be used as the in-use priority for the virtual router
Current Delta Sum	The sum of the priorities of all the delta events when multiple delta events associated with the priority control policy happen simultaneously; this sum is subtracted from the base priority of the virtual router to give the in-use priority
Delta Limit	The delta-in-use-limit for a VRRP policy; once the total sum of all delta events has been calculated and subtracted from the base-priority of the virtual router, the result is compared to the delta-in-use-limit value; if the result is less than this value, the delta-in-use-limit value is used as the virtual router in-use priority value; if an explicit priority control event overrides the delta priority control events, the delta-in-use-limit has no effect  If the delta-in-use-limit is 0, the sum of the delta priority control events to reduce the virtual router's in-use-priority to 0 can prevent it from becoming or staying master
Current Priority	The configured delta-in-use-limit priority for a VRRP priority control policy or the configured delta or explicit priority for a priority control event
Applied	The number of virtual router instances to which the policy has been applied; the policy cannot be deleted unless this value is 0
Description	A text string which describes the VRRP policy
Event Type & ID	A delta priority event is a conditional event defined in a priority control policy that subtracts a given amount from the base priority to give the current in-use priority for the VRRP virtual router instances to which the policy is applied  An explicit priority event is a conditional event defined in a priority control policy that explicitly defines the in-use priority for the VRRP virtual router instances to which the policy is applied

Label	Description
	Explicit events override all delta events; when multiple explicit events occur simultaneously, the event with the lowest priority value defines the in-use priority
Event Oper State	The operational state of the event
Hold Set Remaining	The amount of time that must pass before the set state for a VRRP priority control event can transition to the cleared state to dampen flapping events
Priority & Effect	Delta — the <i>priority-level</i> value is subtracted from the associated virtual router instance's base priority when the event is set and no explicit events are set; the sum of the priority event <i>priority-level</i> values on all set delta priority events are subtracted from the virtual router base priority to derive the virtual router instance in-use priority value  If the <b>delta</b> priority event is cleared, the <i>priority-level</i> is no longer used in the in-use priority calculation
	Explicit — the <i>priority-level</i> value is used to override the base priority of the virtual router instance if the priority event is set and no other <b>explicit</b> priority event is set with a lower <i>priority-level</i>  The set <b>explicit</b> priority value with the lowest <i>priority-level</i> determines the actual in-use protocol value for all virtual router instances associated with the policy
In Use	Specifies whether the event is currently affecting the in-use priority of some virtual router

### Output Example

```
A:ALA-A# show vrrp policy
=====
VRRP Policies
=====
Policy      Current      Current      Current      Delta      Applied
Id          Priority & Effect  Explicit      Delta Sum    Limit
-----
1           None         None         None         1          Yes
2           None         None         None         1          No
=====
A:ALA-A#

A:ALA-A# show vrrp policy 1
=====
VRRP Policy 1
=====
Description      : 10.10.200.253 reachability
Current Priority: None          Applied           : No
Current Explicit: None          Current Delta Sum : None
Delta Limit      : 1
-----
```

```

Applied To      VR      Opr      Base      In-use      Master      Is
Interface Name  Id       Pri       Pri       Pri       Pri       Master
-----
None
-----
Priority Control Events
-----
Event Type & ID      Event Oper State      Hold Set      Priority In
Remaining           &Effect           Use
-----
Host Unreach 10.10.200.252      n/a           Expired       20 Del No
Host Unreach 10.10.200.253      n/a           Expired       10 Del No
Route Unknown 10.10.100.0/24      n/a           Expired       1 Exp No
=====
    
```

**VRRP Policy Event Output** — The following output is an example of VRRP policy event information, and [Table 377: Show VRRP Policy Event Output Fields](#) describes the fields.

**Output Example**

```

A:ALA-A#show vrrp policy 1 event port-down
=====
VRRP Policy 1, Event Port Down 1/1/1
=====
Description      :
Current Priority: None           Applied           : Yes
Current Explicit: None          Current Delta Sum : None
Delta Limit      : 1
-----
Applied To      VR      Opr      Base      In-use      Master      Is
Interface Name  Id       Pri       Pri       Pri       Pri       Master
-----
ies301backup    1       Down     100       100         0          No
-----
Priority Control Event Port Down 1/1/1
-----
Priority          : 30           Priority Effect   : Delta
Hold Set Config  : 0 sec        Hold Set Remaining: Expired
Value In Use     : No           Current State    : Cleared
# trans to Set   : 6           Previous State   : Set-down
Last Transition  : 04/13/2007 04:54:35
=====
A:ALA-A#
A:ALA-A# show vrrp policy 1 event host-unreachable
=====
VRRP Policy 1, Event Host Unreachable 10.10.200.252
=====
Description      : 10.10.200.253 reachability
Current Priority: None           Applied           : No
Current Explicit: None          Current Delta Sum : None
Delta Limit      : 1
-----
Applied To      VR      Opr      Base      In-use      Master      Is
Interface Name  Id       Pri       Pri       Pri       Pri       Master
-----
None
-----
    
```

```

Priority Control Event Host Unreachable 10.10.200.252
-----
Priority          : 20                Priority Effect   : Delta
Interval         : 1 sec              Timeout          : 1 sec
Drop Count       : 3
Hold Set Config  : 0 sec              Hold Set Remaining: Expired
Value In Use     : No                 Current State    : n/a
# trans to Set   : 0                 Previous State   : n/a
Last Transition  : 04/13/2007 23:10:24
=====
A:ALA-A#

A:ALA-A# show vrrp policy 1 event route-unknown
=====
VRRP Policy 1, Event Route Unknown 10.10.100.0/24
=====
Description      : 10.10.200.253 reachability
Current Priority  : None                Applied          : No
Current Explicit : None                Current Delta Sum : None
Delta Limit      : 1

-----
Applied To      VR   Opr   Base  In-use  Master  Is
Interface Name  Id   Pri   Pri   Pri    Pri    Master
-----
None

-----
Priority Control Event Route Unknown 10.10.100.0/24
-----
Priority          : 1                Priority Effect   : Explicit
Less Specific    : No                Default Allowed  : No
Next Hop(s)     : None
Protocol(s)     : None
Hold Set Config  : 0 sec              Hold Set Remaining: Expired
Value In Use     : No                 Current State    : n/a
# trans to Set   : 0                 Previous State   : n/a
Last Transition  : 04/13/2007 23:10:24
=====
    
```

Table 377: Show VRRP Policy Event Output Fields

Label	Description
Description	A text string which describes the VRRP policy
Policy Id	The VRRP priority control policy associated with the VRRP virtual router instance  A value of 0 indicates that no control policy is associated with the virtual router instance
Current Priority	The base router priority for the virtual router instance used in the master election process
Current Explicit	When multiple explicitly defined events associated with the priority control policy happen simultaneously, the lowest value of all the current explicit priorities will be used as the in-use priority for the virtual router

Label	Description
Applied	The number of virtual router instances to which the policy has been applied; the policy cannot be deleted unless this value is 0
Current Delta Sum	The sum of the priorities of all the delta events when multiple delta events associated with the priority control policy happen simultaneously; this sum is subtracted from the base priority of the virtual router to give the in-use priority
Delta Limit	The delta-in-use-limit for a VRRP policy; once the total sum of all delta events has been calculated and subtracted from the base-priority of the virtual router, the result is compared to the delta-in-use-limit value; if the result is less than this value, the delta-in-use-limit value is used as the virtual router in-use priority value; if an explicit priority control event overrides the delta priority control events, the delta-in-use-limit has no effect  If the delta-in-use-limit is 0, the sum of the delta priority control events to reduce the virtual router's in-use-priority to 0 can prevent it from becoming or staying master
Applied to Interface Name	The interface name where the VRRP policy is applied
VR ID	The virtual router ID for the IP interface
Opr	Up — indicates that the operational state of the VRRP instance is up
	Down — indicates that the operational state of the VRRP instance is down
Base Pri	The base priority used by the virtual router instance
InUse Priority	The current in-use priority associated with the VRRP virtual router instance
Master Priority	The priority of the virtual router instance which is the current master
Priority	The base priority used by the virtual router instance
Priority Effect	Delta — a delta priority event is a conditional event defined in a priority control policy that subtracts a given amount from the base priority to give the current in-use priority for the VRRP virtual router instances to which the policy is applied
	Explicit — a conditional event defined in a priority control policy that explicitly defines the in-use priority for the VRRP virtual router instances to which the policy is applied

Label	Description
	Explicit events override all delta events; when multiple explicit events occur simultaneously, the event with the lowest priority value defines the in-use priority
Current Priority	The configured delta-in-use-limit priority for a VRRP priority control policy or the configured delta or explicit priority for a priority control event
Event Oper State	The operational state of the event
Hold Set Remaining	The amount of time that must pass before the set state for a VRRP priority control event can transition to the cleared state to dampen flapping events
Priority	The base priority used by the virtual router instance
Priority Effect	Delta — the <i>priority-level</i> value is subtracted from the associated virtual router instance's base priority when the event is set and no explicit events are set; the sum of the priority event <i>priority-level</i> values on all set delta priority events are subtracted from the virtual router base priority to derive the virtual router instance in-use priority value  If the <b>delta</b> priority event is cleared, the <i>priority-level</i> is no longer used in the in-use priority calculation
	Explicit — the <i>priority-level</i> value is used to override the base priority of the virtual router instance if the priority event is set and no other <b>explicit</b> priority event is set with a lower <i>priority-level</i>  The set <b>explicit</b> priority value with the lowest <i>priority-level</i> determines the actual in-use protocol value for all virtual router instances associated with the policy
Hold Set Config	The configured number of seconds that the hold-set timer waits after an event enters a set state or enters a higher threshold set state, depending on the event type
Value In Use	Yes — the event is currently affecting the in-use priority of some virtual router
	No — the event is not affecting the in-use priority of some virtual router
# trans to Set	The number of times the event has transitioned to one of the 'set' states
Last Transition	The time and date when the operational state of the event last changed

## policy

### Syntax

**policy** [*policy-id*] **association**

### Context

[\[Tree\]](#) (show>system>security>dist-cpu-protection policy)

[\[Tree\]](#) (show>system>security>cpu-protection policy)

### Full Context

show system security dist-cpu-protection policy

show system security cpu-protection policy

### Description

This command displays CPU protection policy information.

### Parameters

#### *policy-id*

Displays CPU protection policy information for the specified policy ID.

#### **association**

This keyword displays associations for the specified policy ID.

### Platforms

All

- show system security dist-cpu-protection policy

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

- show system security cpu-protection policy

## policy

### Syntax

**policy** *policy-assoc-name*

### Context

[\[Tree\]](#) (show>router>pcep>pcc>pce-assoc policy)

### Full Context

show router pcep pcc pce-associations policy



## Description

This command displays the policy association information.

If a policy association name is not specified, the information for all configured policy associations is displayed.

## Parameters

### *policy-assoc-name*

Specifies the name of the policy association, up to 32 characters.

## Platforms

All

## Output

The following output is an example of policy association information, and [Table 378: Show Policy Association Descriptions](#) describes the output fields.

### Output Example

```
*A:Dut-C>config>router>mpls>lsp# show router pcep pcc pce-associations policy "test_pol"
=====
PCEP PCC Policy Associations Info
=====
Association Name      : test_pol
Association ID        : 10
Association Source    : 192.168.213.59
=====
```

Table 378: Show Policy Association Descriptions

Label	Description
Association Name	The policy association name
Association ID	The policy association ID
Association Source	The source IP address of the policy association. Both IPv4 and IPv6 are supported.

## 18.59 policy-edits

### policy-edits

## Syntax

**policy-edits**

## Context

[\[Tree\]](#) (show>router policy-edits)

## Full Context

show router policy-edits

## Description

This command displays edited policy information that was entered in the classic CLI.



### Note:

This command is not available in the MD-CLI.

## Platforms

All

## 18.60 policy-test

### policy-test

## Syntax

**policy-test** *plcy-or-long-expr* [ *plcy-or-expr* [*plcy-or-expr*...{up tp 14 max}] ] [**family** *family*] [**rd** *rd*] **prefix** *ip-prefix/ip-prefix-length* [ **longer**] [**neighbor** *ip-address*] [**display-rejects**] [{**detail** | **brief**}] [**display-rejects-only**] [**export**] [ **protocol** *protocol*]

## Context

[\[Tree\]](#) (show>router>bgp policy-test)

## Full Context

show router bgp policy-test

## Description

This command allows the operator to evaluate existing route policy or chain of route policies or route policy logical expression effects, as a BGP import or export policy, by identifying the routes that would be accepted or rejected after the complete evaluation.

When the policy, list of policies or logical expression is used as a BGP export policy, the **export** keyword must be included. When the policy is used as a BGP import policy, the **export** keyword should not be included.

## Parameters

### *plcy-or-long-expr*

Specifies up to 14 policy names or a long expression.

**Values**    *policy-name*: a policy name, up to 64 characters  
            *long-expr*: a long expression, up to 255 characters.

### ***plcy-or-expr***

Specifies the policy name or expression.

**Values**    policy-name: a policy name, up to 64 characters  
              expr: an expression, up to 64 characters

### ***family***

ipv4, ipv6, vpn-ipv4, vpn-ipv6, label-ipv4, label-ipv6.

**Default**    ipv4

### ***rd***

Specifies the route distinguisher value in one of the following formats:

- *ip-addr.comm-val*
- *2byte-asnumber.ext-comm-val*
- *4byte-asnumber.comm-val*

### ***ip-prefix/ip-prefix-length***

Specifies an IPv4 or IPv6 prefix/mask to be evaluated. The keyword **longer** may be specified to evaluate longer prefix matches (optional).

### ***ip-address***

Specifies the IPv4 or IPv6 address of a peer from which the BGP routes to be evaluated were sent, up to 64 characters.

### ***longer***

Matches prefixes with a longer prefix-length.

### ***display-rejects***

Displays routes that were rejected by the policy. If not specified, only a count of rejected routes are shown.

### ***detail***

When the policy modifies route attributes, it displays the modifications made to the routes. This command requires an exact prefix to be specified.

### ***brief***

Provides a summarized display of the route attributes modifications. This command requires an exact prefix to be specified.

### ***display-rejects-only***

Displays only routes rejected by the policy test.

### ***export***

Indicates that the policy test is conducted in the context of a BGP export policy. The analyzed set of routes also include non-BGP routes that can be redistributed by BGP.

### ***protocol***

Displays routes by the protocol type. This keyword is only applicable when the **export** keyword is also present.

## Platforms

All

## Output

The following output is an example of policy test information, and [Table 379: Show Policy Test Field Descriptions](#) describes the output fields.

### Output Example

```
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 0.0.0.0/0
longer neighbor 220.0.0.2
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network                LocalPref  MED
      Nexthop                Path-Id    VPNLabel
      As-Path
-----
Accepted by Policy
u*>?  4.0.0.6/32                None      None
      220.0.0.2                None      -
      14
-----
Total Routes : 17 Routes rejected : 16
=====
A:sim-1# show router bgp policy-test bgpprefix6 prefix 0.0.0.0/0 longer neighbor
220.0.0.2
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network
-----
Accepted by Policy
u*>?  4.0.0.6/32
-----
Total Routes : 17 Routes rejected : 16
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 0.0.0.0/0
longer neighbor 220.0.0.2 display-rejects brief
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network
-----
```

```

Rejected by Default action
u*>? 2.2.2.2/32
Rejected by Default action
u*>? 4.0.0.1/32
Rejected by Default action
u*>? 4.0.0.2/32
Rejected by Default action
u*>? 4.0.0.3/32
Rejected by Default action
u*>? 4.0.0.4/32
Rejected by Default action
u*>? 4.0.0.5/32
Accepted by Policy
u*>? 4.0.0.6/32
Rejected by Default action
u*>? 6.0.0.1/32
Rejected by Default action
u*>? 7.0.0.1/32
Rejected by Default action
u*>i 10.0.4.0/24
Rejected by Default action
*i 10.12.0.0/24
Rejected by Default action
*i 10.14.0.0/24
Rejected by Default action
u*>i 10.24.0.0/24
Rejected by Default action
*i 12.12.12.12/32
Rejected by Default action
*i 220.0.0.2/32
Rejected by Default action
*i 220.0.0.3/32
Rejected by Default action
u*>i 221.0.0.2/32
-----
Total Routes : 17 Routes rejected : 16
=====
A:sim-1# show router bgp policy-test bgpprefix6 prefix 0.0.0.0/0 longer neighbor
220.0.0.2 display-rejects
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network                               LocalPref  MED
      Nexthop                             Path-Id    VPLabel
      As-Path
-----
Rejected by Default action
u*>? 2.2.2.2/32                          None       None
      220.0.0.2                          None       -
      14
Rejected by Default action
u*>? 4.0.0.1/32                          None       None
      220.0.0.2                          None       -
      14
Rejected by Default action
u*>? 4.0.0.2/32                          None       None
      220.0.0.2                          None       -
      14
    
```

```

Rejected by Default action
u*>? 4.0.0.3/32          None      None
      220.0.0.2          None      -
      14
Rejected by Default action
u*>? 4.0.0.4/32          None      None
      220.0.0.2          None      -
      14
Rejected by Default action
u*>? 4.0.0.5/32          None      None
      220.0.0.2          None      -
      14
Accepted by Policy
u*>? 4.0.0.6/32          None      None
      220.0.0.2          None      -
      14
Rejected by Default action
u*>? 6.0.0.1/32         None      None
      220.0.0.2          None      -
      14
Rejected by Default action
u*>? 7.0.0.1/32         None      None
      220.0.0.2          None      -
      14
Rejected by Default action
u*>i 10.0.4.0/24         None      None
      220.0.0.2          None      -
      14
Rejected by Default action
*i 10.12.0.0/24          None      20
      220.0.0.2          None      -
      14
Rejected by Default action
*i 10.14.0.0/24         None      None
      220.0.0.2          None      -
      14
Rejected by Default action
u*>i 10.24.0.0/24       None      None
      220.0.0.2          None      -
      14
Rejected by Default action
*i 12.12.12.12/32       None      20
      220.0.0.2          None      -
      14
Rejected by Default action
*i 220.0.0.2/32         None      None
      220.0.0.2          None      -
      14
Rejected by Default action
*i 220.0.0.3/32         None      10
      220.0.0.2          None      -
      14
Rejected by Default action
u*>i 221.0.0.2/32       None      None
      220.0.0.2          None      -
      14
-----
Total Routes : 17 Routes rejected : 16
=====
A:sim-1# show router bgp policy-test bgpprefix6 prefix 4.0.0.1/32 detail neighbor
220.0.0.2 display-rejects
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
    
```

```
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

=====
BGP IPv4 Routes
=====
Rejected by Default action
Network      : 4.0.0.1/32
Nextthop    : 220.0.0.2
Path Id     : None
From        : 220.0.0.2
Res. Nextthop : 10.14.0.4
Local Pref. : None
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric : None
Connector   : None
Community   : target:65530:20
Cluster     : No Cluster Members
Originator Id : None
Fwd Class   : None
Flags       : Used Valid Best Incomplete
Route Source : External
AS-Path     : 14
Interface Name : to-sim-6
Aggregator    : None
MED           : None
Peer Router Id : 14.14.14.10
Priority       : None

-----
Total Routes : 1 Routes rejected : 1
=====

A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.6/32
neighbor 220.0.0.2
=====
BGP Router ID:11.11.11.10    AS:11    Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

=====
BGP IPv4 Routes
=====
Accepted by Policy
-----
Original Attributes

Network      : 4.0.0.6/32
Nextthop    : 220.0.0.2
Path Id     : None
From        : 220.0.0.2
Res. Nextthop : 10.14.0.4
Local Pref. : n/a
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric : None
Connector   : None
Community   : target:65530:20
Cluster     : No Cluster Members
Originator Id : None
Fwd Class   : None
Flags       : Used Valid Best Incomplete
Route Source : External
AS-Path     : 14
Interface Name : to-sim-6
Aggregator    : None
MED           : None
Peer Router Id : 14.14.14.10
Priority       : None

Modified Attributes
```

```

Network       : 4.0.0.6/32
Nexthop      : 220.0.0.2
Path Id      : None
From         : 220.0.0.2
Res. Nexthop : 10.14.0.4
Local Pref.  : None
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : 2:11 2:12 2:13 target:65530:20
Cluster      : No Cluster Members
Originator Id : None
Fwd Class    : None
Flags        : Used Valid Best Incomplete
Route Source : External
AS-Path      : 14
Interface Name : to-sim-6
Aggregator    : None
MED           : None
Peer Router Id : 14.14.14.10
Priority       : None
    
```

-----  
 Routes : 1  
 =====

```

A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.6/32
longer neighbor 220.0.0.2
    
```

```

=====
BGP Router ID:11.11.11.10    AS:11    Local AS:11
=====
    
```

```

Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
    
```

=====

```

BGP IPv4 Routes
=====
Flag Network LocalPref MED
Nexthop Path-Id VPNLabel
As-Path
-----
Accepted by Policy
u*>? 4.0.0.6/32 None None
      220.0.0.2 None -
      14
    
```

-----  
 Routes : 1  
 =====

```

A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.6/32
longer neighbor 220.0.0.2 detail
    
```

```

=====
BGP Router ID:11.11.11.10    AS:11    Local AS:11
=====
    
```

```

Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
    
```

=====

```

BGP IPv4 Routes
=====
Flag Network
-----
Accepted by Policy
u*>? 4.0.0.6/32
    
```

-----  
 Routes : 1  
 =====

```

A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
    
```



```

longer neighbor 220.0.0.2 brief
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network
-----
Accepted by Policy
u*>? 4.0.0.6/32
-----
Total Routes : 6 Routes rejected : 5
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
longer neighbor 220.0.0.2 display-rejects detail
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network
-----
Rejected by Default action
u*>? 4.0.0.1/32
Rejected by Default action
u*>? 4.0.0.2/32
Rejected by Default action
u*>? 4.0.0.3/32
Rejected by Default action
u*>? 4.0.0.4/32
Rejected by Default action
u*>? 4.0.0.5/32
Accepted by Policy
u*>? 4.0.0.6/32
-----
Total Routes : 6 Routes rejected : 5
=====
A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
longer neighbor 220.0.0.2 display-rejects
=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network                LocalPref  MED
      Nexthop                Path-Id    VPNLabel
      As-Path
-----
Rejected by Default action
u*>? 4.0.0.1/32             None       None
      220.0.0.2             None       -
    
```

```

    14
    Rejected by Default action
    u*>? 4.0.0.2/32          None      None
          220.0.0.2        None      -
    14
    Rejected by Default action
    u*>? 4.0.0.3/32          None      None
          220.0.0.2        None      -
    14
    Rejected by Default action
    u*>? 4.0.0.4/32          None      None
          220.0.0.2        None      -
    14
    Rejected by Default action
    u*>? 4.0.0.5/32          None      None
          220.0.0.2        None      -
    14
    Accepted by Policy
    u*>? 4.0.0.6/32          None      None
          220.0.0.2        None      -
    14
    -----
    Total Routes : 6 Routes rejected : 5
    =====
    A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
    longer neighbor 220.0.0.2 display-rejects brief
    =====
    BGP Router ID:11.11.11.10      AS:11      Local AS:11
    =====
    Legend -
    Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
    Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
    =====
    BGP IPv4 Routes
    =====
    Flag Network
    -----
    Rejected by Default action
    u*>? 4.0.0.1/32
    Rejected by Default action
    u*>? 4.0.0.2/32
    Rejected by Default action
    u*>? 4.0.0.3/32
    Rejected by Default action
    u*>? 4.0.0.4/32
    Rejected by Default action
    u*>? 4.0.0.5/32
    Accepted by Policy
    u*>? 4.0.0.6/32
    -----
    Total Routes : 6 Routes rejected : 5
    =====
    A:sim-1# show router bgp policy-test bgpprefix6 family ipv4 prefix 4.0.0.0/24
    longer neighbor 220.0.0.2
    =====
    BGP Router ID:11.11.11.10      AS:11      Local AS:11
    =====
    Legend -
    Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
    Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
    =====
    BGP IPv4 Routes
    
```

```

=====
Flag Network                               LocalPref MED
  Nexthop                               Path-Id   VPNLabel
  As-Path
-----
Accepted by Policy
u*>? 4.0.0.6/32                             None     None
      220.0.0.2                             None     -
      14
-----
Total Routes : 6 Routes rejected : 5

A:sim-1# show router bgp policy-test bgpprefix44rj family vpn-ipv4 prefix 0.0.0.0/0
longer neighbor display-rejects

=====
BGP Router ID:11.11.11.10      AS:11      Local AS:11
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup

=====
BGP VPN-IPv4 Routes
=====
Flag Network                               LocalPref MED
  Nexthop                               Path-Id   VPNLabel
  As-Path
-----
Accepted by Policy
u*>i 1:30:192.14.15.0/24                   None     None
      220.0.0.2                             None     131069
      14
Accepted by Policy
u*>i 65530:20:8.0.0.1/32                   None     None
      220.0.0.2                             None     131070
      14
Accepted by Policy
u*>i 65530:20:10.0.3.0/24                   None     None
      220.0.0.2                             None     131070
      14 101
Accepted by Policy
u*>i 65530:20:10.13.0.0/24                   None     None
      220.0.0.2                             None     131070
      14 101
Accepted by Policy
u*>i 65530:20:10.23.0.0/24                   None     None
      220.0.0.2                             None     131070
      14 101
Accepted by Policy
u*>i 65530:20:13.13.13.13/32                 None     None
      220.0.0.2                             None     131070
      14 101
Accepted by Policy
u*>i 65530:20:20.20.20.5/32                   None     None
      220.0.0.2                             None     131070
      14
Accepted by Policy
u*>i 65530:20:20.20.20.6/32                   None     None
      220.0.0.2                             None     131070
      14
Rejected by Policy Entry = 10
u*>i 65530:20:44.44.44.0/24                   None     None
    
```

```
220.0.0.2          None          131070
14 101
Accepted by Policy
u*>i 65530:20:192.14.15.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.16.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.17.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.18.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.19.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.20.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.21.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.22.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.23.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:192.14.25.0/24  None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 65530:20:196.34.0.0/24    None          None
220.0.0.2          None          131070
14
Accepted by Policy
u*>i 220.0.0.2:50:192.50.50.0/24  None          None
220.0.0.2          None          131067
14
Accepted by Policy
u*>i 220.0.0.2:50:220.0.0.2/32  None          None
220.0.0.2          None          131067
14
-----
Total Routes : 22 Routes rejected : 1
=====
```

Table 379: Show Policy Test Field Descriptions

Field	Description
Status codes	Codes used for used, suppressed, history, decayed or valid status
Origin codes	Codes used for IGP, EGP, incomplete, best or backup origin
Flag	Indicator for network, nexthop or as-path routes

## 18.61 pool

pool

### Syntax

**pool** *pool-name*

### Context

[\[Tree\]](#) (tools>perform>router>dhcp>server pool)

[\[Tree\]](#) (tools>perform>router>dhcp6>server pool)

### Full Context

tools perform router dhcp local-dhcp-server pool

tools perform router dhcp6 local-dhcp-server pool

### Description

This command performs local DHCP or DHCP6 server IP address pool tasks.

### Parameters

***pool-name***

Specifies the pool name.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

pool

### Syntax

**pool** *pool-name*

## pool

### Context

[\[Tree\]](#) (show>router>nat pool)

### Full Context

show router nat pool

### Description

This command displays NAT pool information.

### Parameters

#### *pool-name*

Specifies the pool name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of this command.

#### Output Example

```
show router nat pool
=====
NAT pools
=====
Pool NAT-group Type Admin-state
-----
MyPool 1 l2Aware inService
MyPool2 1 l2Aware inService
-----
No. of pools: 2
=====

*A:SR12_PPP0E>show>router>nat# show router "Base" nat pool "privpool"
=====
NAT Pool privpool
=====
ISA NAT Group           : 3
Pool type                : largeScale
Admin state              : inService
Mode                     : auto (napt)
Port forwarding range    : 1 - 1023
Port reservation         : 128 blocks
Block usage High Watermark (%) : (Not Specified)
Block usage Low Watermark (%)  : (Not Specified)
Subscriber limit per IP address : 65535
Active                   : true
Last Mgmt Change        : 01/28/2012 14:47:59
=====
NAT address ranges of pool privpool
=====
Range                                     Drain Num-blk
```

```

-----
10.0.0.5 - 10.0.0.6                                     1
-----
No. of ranges: 1
=====
NAT members of pool privpool ISA NAT group 3
=====
Member                                                Block-Usage-% Hi
-----
1                                                       < 1           N
2                                                       < 1           N
-----
No. of members: 2
=====
A:SR12_PPP0E#
    
```

## 18.62 pool-ext-stats

### pool-ext-stats

#### Syntax

**pool-ext-stats** [*pool-name*]

#### Context

[\[Tree\]](#) (show>router>dhcp>server pool-ext-stats)

#### Full Context

show router dhcp local-dhcp-server pool-ext-stats

#### Description

This command displays extended statistics per DHCPv4 pool in local DHCPv4 server.

The following statistics are included in output:

- The number of stable leases in the pool
- The number of provisioned address in the pool
- The number of used address in the pool
- The number of free address in the pool
- The percentage of used address
- The percentage of free address

For each statistic (except for provisioned addresses), there is current value and peak value, peak value is the highest value since pool creation or last reset via the **clear router *rt-id* dhcp local-dhcp-server *svr-name* pool-ext-stats** command.

## Parameters

### *pool-name*

Specifies the name of DHCPv4 local server pool.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of pool extended statistics information.

### Output Example

```
show router 500 dhcp local-dhcp-server "d4" pool-ext-stats "pool-1"
=====
Extended pool statistics for server "d4"
=====
Current      Peak      TimeStamp
-----
Pool         pool-1
Local:
Stable Leases      0          0      01/07/2013 19:07:11
Provisioned Addresses 101
Used Addresses     0          0      01/07/2013 19:07:11
Free Addresses    101        101    01/07/2013 19:07:11
Used Pct          0          0      01/07/2013 19:07:11
Free Pct         100        100    01/07/2013 19:07:11
Last Reset Time   01/07/2013 19:07:11
-----
Number of entries      1
=====
```

[Table 380: Extended Pool Statistics Field Descriptions](#) describes extended pool statistics output fields.

*Table 380: Extended Pool Statistics Field Descriptions*

Field	Description
Current	The current pool statistics
Peak	The peak value since the last reset
Timestamp	The date and time of the last reset
Pool	The pool name
Stable Leases	The number of stable leases in the pool
Provisioned Addresses	The number of provisioned addresses in the pool
Used Addressed	The number of used addresses in the pool
Free Addresses	The number of free addresses in the pool
Used Pct	The percentage of subnets in use in the pool



Field	Description
Free Pct	The percentage of unused subnets in the pool
Last Reset Time	The date and time of the last reset in the pool
Number of entries	The total number of entries

## pool-ext-stats

### Syntax

**pool-ext-stats** [*pool-name*]

### Context

**[Tree]** (show>router>dhcp6>server pool-ext-stats)

### Full Context

show router dhcp6 local-dhcp-server pool-ext-stats

### Description

This command displays extended statistics per DHCPv6 pool in local DHCPv6 server.

The following statistics are included in output:

- The number of stable leases in the pool
- The number of provisioned /64 address block in the pool
- The number of used /64 address block in the pool
- The number of free /64 address block in the pool
- The percentage of used address (with /64 address block)
- The percentage of free address (with /64 address block)

For each statistic (except for Provisioned Addresses), there is current value and peak value, peak value is the highest value since pool creation or last reset via command "clear router <rt-id> dhcp6 local-dhcp-server <svr-name> pool-ext-stats".

### Parameters

***pool-name***

Specifies the name of DHCPv6 local server pool.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of subnet statistics information.

### Output Example

```

show router 500 dhcp6 local-dhcp-server "d6" pool-ext-stats "pool-v6"
=====
Extended pool statistics for server "d6"
=====
-----
Current          Peak          TimeStamp
-----
Pool             pool-v6
Local:
  Stable Leases   0             0             01/07/2013 19:54:52
  Provisioned Blks 4             4             01/07/2013 19:54:52
  Used Blks       0             0             01/07/2013 19:54:52
  Free Blks       4             4             01/07/2013 19:54:52
  Used Pct        0             0             01/07/2013 19:54:52
  Free Pct        100          100          01/07/2013 19:54:52
Last Reset Time  01/07/2013 19:54:52
-----
Number of entries 1
=====
    
```

**Table 381: DHCP6 Pool Ext Stats Field Descriptions** describes DHCP6 extended pool statistics output fields.

*Table 381: DHCP6 Pool Ext Stats Field Descriptions*

Field	Description
Current	The current pool statistics
Peak	The peak value since the last reset
TimeStamp	The date and time of the last reset
Pool	The pool name
Stable Leases	The number of stable leases
Provisioned Blks	The number of provisioned blocks in this pool
Free Blks	The number of free blocks in this pool
Used Pct	The percentage of extended statistics in use
Free Pct	The percentage of /64 blocks currently unused
Last Reset Time	The date and time of the last reset
Number of entries	The total number of entries

### pool-ext-stats

#### Syntax

**pool-ext-stats** [*pool-name*]

### Context

**[Tree]** (clear>router>dhcp>server pool-ext-stats)

**[Tree]** (clear>router>dhcp6>server pool-ext-stats)

### Full Context

clear router dhcp local-dhcp-server pool-ext-stats

clear router dhcp6 local-dhcp-server pool-ext-stats

### Description

This command clears extended pool statistics.

### Parameters

***pool-name***

Clears information about the pool name.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.63 pool-stats

pool-stats

### Syntax

**pool-stats** [*pool-name*]

### Context

**[Tree]** (show>router>dhcp6>server pool-stats)

### Full Context

show router dhcp6 local-dhcp-server pool-stats

### Description

This command displays pool statistics.

### Parameters

***pool-name***

Specifies the name of DHCPv6 local server pool.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of pool statistics information.

### Output Example

```
*A:vsim-2# show router 500 dhcp6 local-dhcp-server "d6" pool-stats
=====
DHCPv6 server pool statistics
=====
Pool                : v6-1
-----
Dropped Int no prefix WAN      : 0
Dropped Int no prefix SLAAC    : 0
=====
*A:vsim-2#
*A:vsim-2# show router 500 dhcp local-dhcp-server "d4" failover-
failover-pool-stats    failover-server-stats
*A:vsim-2# show router 500 dhcp local-dhcp-server "d4" failover-pool-stats
=====
Failover config for pool      v4-1
=====
Failover Admin State          inService
Failover Oper State           normal
Failover Persist Key          0xFFFFFFFF
Administrative MCLT           0h10m0s
Operational MCLT              0h10m0s
Startup Wait Time             0h2m0s
Partner Down Delay            23h59m59s
Ignore MCLT                   disabled
Failover statistics for pool  v4-1
-----
Dropped Invalid Packets       0
Failover Shutdown             0
Lease Already Expired         0
Maximum Lease Count Reached   0
Subnet Not Found              0
Range Not Found               0
Host Conflict                  0
Address Conflict              0
Peer Conflict                  0
Persistence Congestion        0
No Lease Hold Time Configured 0
Lease Not Found               0
-----
Number of pools found         1
=====
*A:vsim-2#
```

[Table 382: Failover Pool Statistics Field Descriptions](#) describes pool statistics output field descriptions.

*Table 382: Failover Pool Statistics Field Descriptions*

Field	Description
Failover Admin State	Identifiers the failover state of the DHCP server instance inService — The failover admin state is in service outOfService — The failover admin state is out of service
Failover Oper State	The operational state of a DHCP server instance

Field	Description
Failover Persist Key	The maximum amount of time that one server can extend a lease for a client's binding beyond the time known by the partner server
Administrative MCLT	The administrative Maximum Client Lead Time (MCLT)
Operational MCLT	Indicates the operational MCLT
Startup Wait Time	The startup wait time. The startup wait time is the time that one IP address pool attempts to contact the partner IP address pool. During this time, the IP address pool is unresponsive to DHCP client requests.
Partner Down Delay	The minimum safe-time after the beginning of COMMUNICATIONS-INTERRUPTED state. After the expiry of this time, the server enters the PARTNER-DOWN state.
Ignore McLT	The ignore McLT status. If, after the transition COMMUNICATIONS-INTERRUPTED-to-PARTNER-DOWN state, the DHCP server instance ignores the safety period with a duration of Maximum Client Lead Time; a 'true' value has the effect that the DHCP server starts offering IP addresses from the partner's scope immediately after this transition, without waiting for existing leases allocated by the partner and not known by this system to time out.  A 'true' value increases the risk that duplicate addresses are offered; if the transition to PARTNER-DOWN state is likely to be caused by a failure of the partner system rather than a communications problem, this risk is reduced.
Failover statistics for pool	The failover statistics for each pool
Dropped Invalid Packets	The number of BNDUPD packets that were dropped because the packet was malformed
Failover Shutdown	The number of BNDUPD packets that were dropped because the failover state if the DHCP server instance is shut down
Lease Already Expired	The number of BNDUPD packets that were dropped because the corresponding lease has expired
Maximum Lease Count Reached	The number of BNDUPD packets that were dropped because the maximum number of leases were reached
Subnet Not Found	The number of BNDUPD packets that were dropped because a valid subnet could not be found for the lease

Field	Description
Range Not Found	The number of BNDUPD packets that were dropped because a valid include range could not be found for the lease.
Host Conflict	The number of BNDUPD packets that were dropped because this DHCP server instance has already leased this address to another host
Address Conflict	The number of BNDUPD packets that were dropped because this DHCP server instance has already leased another address to this host
Peer Conflict	The number of BNDUPD packets that were dropped because the failover peer has leased an address within a subnet range of which the failover control is set to <b>local</b> on this local DHCP server instance
Persist Congestion	The number of BNDUPD packets that were dropped because of persistence congestion on this DHCP server instance
No Lease Hold Time Configured	The number of BNDUPD packets that were dropped because the lease hold time is zero on this DHCP server instance
Lease Not Found	The number of Binding Database Update (BNDUPD) remove packets were dropped because the corresponding lease could not be found.
Number of pools found	The total number of pools found

## 18.64 pool-threshold-stats

### pool-threshold-stats

#### Syntax

**pool-threshold-stats** [*pool-name*] **detail** [ **format** {**exact** | **scientific**}]

**pool-threshold-stats** [*pool-name*]

#### Context

[\[Tree\]](#) (show>router>dhcp6>server pool-threshold-stats)

#### Full Context

show router dhcp6 local-dhcp-server pool-threshold-stats

## Description

This command displays pool level threshold stats of local DHCPv6 server. A minimum-free threshold needs to be configured before system collects threshold stats for the prefix.

The stats for each threshold are calculated based on the configured minimum-free prefix length.

For example, a /59 prefix is provisioned in the local DHCPv6 server, and the server allocated two PD leases, one /62 and one /63. And there is a /63 minimum threshold configured. The threshold stats are calculated based on /63 as the base unit (block). Then the value of current used block would be 3 because there is one /62 lease and one /63 lease, that equals to a total of three /63.

## Parameters

### *pool-name*

Specifies the name of the pool in local DHCPv6 server.

### *detail*

Displays detailed output.

### *format*

Specifies the format in the display to be either **exact** or **scientific**.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of pool threshold statistics information.

### Output Example

```
show router 500 dhcp6 local-dhcp-server "d6" pool-threshold-stats "1"
=====
Server "d6"
=====
  Operational state      : inService
-----
Pool                    : 1
-----
  Stable leases          : 2
  Advertised leases      : 0
-----
  Threshold   Used   Peak   Too low   Depleted   Peak timestamp
-----
  /62         25%   25%   N         N         01/21/2015 21:52:12
  /63         19%   19%   N         N         01/21/2015 21:52:12
```

The command shown above displays an overview of pool level thresholds in the specified pool:

- The **Peak** field indicates the peak value of used
- The **Too low** field indicates if the configured minimum-free threshold is exceeded
- The **Depleted** field indicates if there is no available prefix with the length in the provisioned prefix
- The **Peak timestamp** field indicates the time of peak used value

```
show router 500 dhcp6 local-dhcp-server "d6" pool-threshold-stats "1" detail
```

```
=====
```

```
Server "d6"
```

```
=====
```

```
Operational state      : inService
```

```
-----
```

```
Pool                   : 1
```

```
-----
```

```
Stable leases         : 2
```

```
Advertised leases    : 0
```

```
-----
```

```
Threshold              : /62
```

```
-----
```

```
Current Provisioned Blks : 8.000000x10^0
```

```
Current Used Blks       : 2.000000x10^0
```

```
Current Free Blks      : 6.000000x10^0
```

```
Current Used Percent    : 25%
```

```
Current Used Peak Blks : 2.000000x10^0
```

```
Current Used Peak Percent : 25%
```

```
Current Used Peak Time  : 01/21/2015 21:52:12
```

```
Current Free Percent    : 75%
```

```
Current Free Too Low   : N
```

```
Current Free Depleted  : N
```

```
Local Provisioned Blks : 8.000000x10^0
```

```
Local Used Blks        : 2.000000x10^0
```

```
Local Free Blks       : 6.000000x10^0
```

```
Local Used Peak Blks  : 2.000000x10^0
```

```
Local Used Peak Percent : 25%
```

```
Local Used Peak Time   : 01/21/2015 21:52:12
```

```
Remote Provisioned Blks : 0.000000x10^0
```

```
Remote Used Blks       : 0.000000x10^0
```

```
Remote Free Blks      : 0.000000x10^0
```

```
Remote Used Peak Blks : 0.000000x10^0
```

```
Remote Used Peak Percent : 0%
```

```
Remote Used Peak Time  : 01/21/2015 21:47:39
```

```
Peak Reset Time       : 01/21/2015 21:47:39
```

```
Valid Data            : Y
```

```
-----
```

```
Threshold              : /63
```

```
-----
```

```
Current Provisioned Blks : 1.600000x10^1
```

```
Current Used Blks       : 3.000000x10^0
```

```
Current Free Blks      : 1.300000x10^1
```

```
Current Used Percent    : 19%
```

```
Current Used Peak Blks : 3.000000x10^0
```

```
Current Used Peak Percent : 19%
```

```
Current Used Peak Time  : 01/21/2015 21:52:12
```

```
Current Free Percent    : 81%
```

```
Current Free Too Low   : N
```

```
Current Free Depleted  : N
```

```
Local Provisioned Blks : 1.600000x10^1
```

```
Local Used Blks        : 3.000000x10^0
```

```
Local Free Blks       : 1.300000x10^1
```

```
Local Used Peak Blks  : 3.000000x10^0
```

```
Local Used Peak Percent : 19%
```

```
Local Used Peak Time   : 01/21/2015 21:52:12
```

```
Remote Provisioned Blks : 0.000000x10^0
```

```
Remote Used Blks       : 0.000000x10^0
```

```
Remote Free Blks      : 0.000000x10^0
```

```
Remote Used Peak Blks : 0.000000x10^0
```

```
Remote Used Peak Percent : 0%
```

```
Remote Used Peak Time  : 01/21/2015 21:47:39
```

```
Peak Reset Time       : 01/21/2015 21:47:39
```

```
Valid Data            : Y
```



The above command displays detailed statistics of all pool level thresholds in the specified pool:

- **Blks** in the output means the minimum free prefix length.
- **Valid Data** output indicates whether the data you see is valid or not. The data is invalid when a background stats update is scheduled or busy.

[Table 383: Pool Threshold Statistics Field Descriptions](#) describes pool threshold statistics output fields.

*Table 383: Pool Threshold Statistics Field Descriptions*

Field	Description
Operational state	The operational state of the local DHCP server instance unknown — The operational state is unknown inService — The operational state is in service outOfService — The operational state is out of service transition — The operational state is in transition waitPersistence — The DHCP server instance is waiting for a persistence action to complete.
Pool	The pool ID
Stable Leases	The number of stable leases
Advertised leases	The number of advertised leases
Threshold	The prefix level threshold
Current Provisioned Blks	The number of provisioned blocks in this pool
Current Used Blks	The number of used blocks in this pool
Current Free Blks	The number of free blocks in this pool
Current Used Percent	The percentage of used prefixes with the minimum free threshold length in the pool compared to the number of provisioned prefixes
Current Used Peak Blks	A 64-bit word of the peak value of the number of used blocks in the pool with a prefix length
Current Used Peak Percent	The peak value of the number of used prefixes with the minimum free threshold length in the pool as a percentage of the provisioned prefixes. This depends on the current failover state of the DHCP server or pool
Current Used Peak Time	The time at which the peak value of the number of used prefixes in the pool was reached

Field	Description
Current Free Percent	The percentage of free prefixes with the minimum free threshold length in the pool compared to the number of provisioned prefixes. This depends on the current failover state of the DHCP server or pool
Current Free Too Low	The number of free prefixes with the minimum free threshold length available in the pool that is below the configured number of prefixes with the minimum free threshold length
Current Free Depleted	The number of prefixes with the minimum free threshold length available in the pool
Local Provisioned Blks	A 64-bit word of the number of provisioned prefixes with the minimum free threshold length local in the pool
Local Used Blks	A 64-bit word of the number of used prefixes with the minimum free threshold length local in the pool
Local Free Blks	A 64-bit word of the number of free prefixes with the minimum free threshold length local in the pool
Local Used Peak Blks	A 64-bit word of the peak value of the number of used prefixes with the minimum free threshold length local in the pool
Local Used Peak Percent	The peak value of the number of used prefixes with the minimum free threshold length local in the pool as a percentage of the provisioned prefixes
Local Used Peak Time	The time at which the peak value of the number of used prefixes local in the pool was reached
Remote Provisioned Blks	A 64-bit word of the number of provisioned prefixes with the minimum free threshold length remote in the pool
Remote Used Blks	A 64-bit word of the number of used prefixes with the minimum free threshold length remote in the pool
Remote Free Blks	A 64-bit word of the number of free prefixes with the minimum free threshold length remote in the pool

## pool-threshold-stats

### Syntax

**pool-threshold-stats** [*pool-name*]

## Context

[\[Tree\]](#) (clear>router>dhcp6>server pool-threshold-stats)

## Full Context

clear router dhcp6 local-dhcp-server pool-threshold-stats

## Description

This commands resets the peak stats in the pool level threshold stats in the specified pool. If the pool name is not specified, then the peak stats in all pools in the server are reset.

## Parameters

***pool-name***

Clears information about the specified local DHCPv6 server pool.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

# 18.65 pools

## pools

### Syntax

**pools** *mda-id*[/*port*]

**pools** *mda-id*[/*port*] **access-app** [*pool-name*]

**pools** *mda-id*[/*port*] **access-app** [**service** *service-id*]

**pools** *mda-id*[/*port*] **access-app** **queue-group** *queue-group-name* [**instance** *instance-id*]

**pools** *mda-id*[/*port*] **network-egress** [*pool-name*]

**pools** *mda-id*[/*port*] **network-egress** **queue-group** *queue-group-name* [**instance** *instance-id*]

**pools** *mda-id*[/*port*] [*direction* [{*pool-name* | **service** *service-id* | **queue-group** *queue-group-name*}  
[**instance** *instance-id*]]]

**pools** *slot-number*

**pools** *slot-number* **fp** *fp-number*

**pools** *slot-number* **fp** *fp-number* **app-ingress**

**pools** *slot-number* **fp** *fp-number* **network-ingress** **statistics**

**pools** *port* **access-app** **statistics**

**pools** *port* **network-egress** **statistics**

### Context

[\[Tree\]](#) (show pools)

## Full Context

show pools

## Description

This command displays pool information.

## Parameters

### *mda-id[/port]*

Displays the pool information of the specified MDA and port.

**Values** slot/mda[/port]

### *access-app*

Specifies the pool application as either access ingress or egress.

**Values** access-ingress, access-egress

### *pool-name*

Displays the pool information of the specified pool. If specified, the name must be **default**.

### *service-id*

Displays the pool information for the specified service.

**Values** 1 to 2148278386, *svc-name*: 64 char max

### *queue-group-name*

Displays the information for the specified queue group.

**Values** 32 chars max

### *instance-id*

Specifies the identification of a specific instance of the queue group.

**Values** 1 to 65535

### *network-egress*

Displays the network egress information.

### *direction*

Displays the information for the ingress or egress direction.

**Values** ingress, egress

### *slot-number*

Displays the information for the specified card slot.

**Values** 1 to 10

### *fp-number*

Displays the information for the specified FP.

**Values** 1 to 8

**app-ingress**

Displays the network ingress or access ingress information.

**Values** network-ingress, access-ingress

**statistics**

Displays the buffer pool statistics.

**Platforms**

All

**Output**

The following outputs are example of pool information, and [Table 384: Output Fields: show pools](#) describes the output fields.



**Note:**

The pool shared in use stat only increases when a queue is asking for a buffer outside its reserved size. If all the buffers in a pool are assigned to queues within their reserved size, then only the reserved in use size will increase. In case of resv CBS over subscription (CBS sum for all queues is bigger than pool resvCBS), it is possible that pool resv in use stat can increase above the actual pool reserved size.

**Output Example: show pools**

```
*A:PE# show pools 5/1
=====
MDA Pools
=====
Slot/MDA      App.   Pool Name      Actual ResvCBS  PoolSize
Admin ResvCBS
-----
5/1           Acc-Ing default      0               0
30%
5/1           Acc-Egr default      0               0
30%
5/1           Net-Egr default      0               0
Sum
=====
Port Pools
=====
Port          App.   Pool Name      Actual ResvCBS  PoolSize
Admin ResvCBS
-----
5/1/1        Acc-Ing default      16128           52224
30%
5/1/1        Acc-Egr default      23040           75264
30%
5/1/1        Net-Egr default      0               0
Sum
5/1/2        Acc-Ing default      0               0
30%
5/1/2        Acc-Egr default      0               0
30%
5/1/2        Net-Egr default      32256           75264
Sum
5/1/3        Acc-Ing default      0               0
```

5/1/3	Acc-Egr default	30%	0
5/1/3	Net-Egr default	30%	75264
5/1/4	Acc-Ing default	Sum	0
5/1/4	Acc-Egr default	30%	0
5/1/4	Net-Egr default	30%	75264
5/1/5	Acc-Ing default	Sum	0
5/1/5	Acc-Egr default	30%	0
5/1/5	Net-Egr default	30%	75264
		Sum	

=====

\*A:PE#

### Output Example: show pools network-egress

```
*A:PE# show pools 5/1/5 network-egress
=====
Pool Information
=====
Port          : 5/1/5
Application   : Net-Egr          Pool Name       : default
CLI Config. Resv CBS : Sum
Resv CBS Step : 0%          Resv CBS Max    : 0%
Amber Alarm Threshold: 0%      Red Alarm Threshold : 0%
-----
Queue-Groups
-----
Queue-Group:Instance : qg1:1
-----
Utilization          State      Start-Avg  Max-Avg  Max-Prob
-----
HiPlus-Slope        Down      85%        100%     80%
High-Slope           Down      70%        90%      80%
Low-Slope            Down      50%        75%      80%
Exceed-Slope        Down      30%        55%      80%
Time Avg Factor     : 7
Pool Total          : 75264 KB
Pool Shared         : 43008 KB          Pool Resv       : 32256 KB
-----
Current Resv CBS    Provisioned  Rising      Falling      Alarm
%age               all Queues  Alarm Thd   Alarm Thd    Color
-----
Sum                32232 KB   NA          NA           Green
Pool Total In Use  : 0 KB
Pool Shared In Use : 0 KB          Pool Resv In Use : 0 KB
WA Shared In Use   : 0 KB
HiPlus-Slope Drop Pr*: 0          Hi-Slope Drop Prob : 0
Lo-Slope Drop Prob : 0          Excd-Slope Drop Prob : 0
=====
Queue Information
=====
Queue : 1 Net=be Port=5/1/5
=====
FC Map          : be
```

```
Dest Tap      : not-applicable      Dest FP       : not-applicable
Admin PIR     : 10000000             Oper PIR      : Max
Admin CIR     : 0                   Oper CIR      : 0
Admin MBS     : 37632 KB             Oper MBS      : 37632 KB
High-Plus Drop T*: 37632 KB         High Drop Tail : 37632 KB
Low Drop Tail : 33792 KB             Exceed Drop Tail : 33792 KB
CBS           : 744 KB               Depth         : 0
Slope        : not-applicable
=====
Queue : 2 Net=l2 Port=5/1/5
=====
FC Map       : l2
Dest Tap     : not-applicable      Dest FP       : not-applicable
Admin PIR    : 10000000             Oper PIR      : Max
Admin CIR    : 25000000             Oper CIR      : 25000000
Admin MBS    : 37632 KB             Oper MBS      : 37632 KB
High-Plus Drop T*: 37632 KB         High Drop Tail : 37632 KB
Low Drop Tail : 33792 KB             Exceed Drop Tail : 33792 KB
CBS          : 2256 KB              Depth         : 0
Slope       : not-applicable
=====
Queue : 3 Net=af Port=5/1/5
=====
FC Map       : af
Dest Tap     : not-applicable      Dest FP       : not-applicable
Admin PIR    : 10000000             Oper PIR      : Max
Admin CIR    : 25000000             Oper CIR      : 25000000
Admin MBS    : 37632 KB             Oper MBS      : 37632 KB
High-Plus Drop T*: 37632 KB         High Drop Tail : 37632 KB
Low Drop Tail : 33792 KB             Exceed Drop Tail : 33792 KB
CBS          : 7488 KB              Depth         : 0
Slope       : not-applicable
=====
Queue : 4 Net=l1 Port=5/1/5
=====
FC Map       : l1
Dest Tap     : not-applicable      Dest FP       : not-applicable
Admin PIR    : 10000000             Oper PIR      : Max
Admin CIR    : 25000000             Oper CIR      : 25000000
Admin MBS    : 18816 KB             Oper MBS      : 18816 KB
High-Plus Drop T*: 18816 KB         High Drop Tail : 18816 KB
Low Drop Tail : 16896 KB             Exceed Drop Tail : 16896 KB
CBS          : 2256 KB              Depth         : 0
Slope       : not-applicable
=====
Queue : 5 Net=h2 Port=5/1/5
=====
FC Map       : h2
Dest Tap     : not-applicable      Dest FP       : not-applicable
Admin PIR    : 10000000             Oper PIR      : Max
Admin CIR    : 10000000             Oper CIR      : Max
Admin MBS    : 37632 KB             Oper MBS      : 37632 KB
High-Plus Drop T*: 37632 KB         High Drop Tail : 37632 KB
Low Drop Tail : 33792 KB             Exceed Drop Tail : 33792 KB
CBS          : 7488 KB              Depth         : 0
Slope       : not-applicable
=====
Queue : 6 Net=ef Port=5/1/5
=====
FC Map       : ef
Dest Tap     : not-applicable      Dest FP       : not-applicable
Admin PIR    : 10000000             Oper PIR      : Max
Admin CIR    : 10000000             Oper CIR      : Max
Admin MBS    : 37632 KB             Oper MBS      : 37632 KB
```

```

High-Plus Drop T*: 37632 KB      High Drop Tail   : 37632 KB
Low Drop Tail     : 33792 KB      Exceed Drop Tail : 33792 KB
CBS               : 7488 KB       Depth            : 0
Slope             : not-applicable
=====
Queue : 7 Net=h1 Port=5/1/5
=====
FC Map           : h1
Dest Tap        : not-applicable   Dest FP          : not-applicable
Admin PIR       : 10000000         Oper PIR        : Max
Admin CIR       : 1000000          Oper CIR        : 1000000
Admin MBS       : 18816 KB         Oper MBS        : 18816 KB
High-Plus Drop T*: 18816 KB      High Drop Tail   : 18816 KB
Low Drop Tail   : 16896 KB         Exceed Drop Tail : 16896 KB
CBS             : 2256 KB          Depth           : 0
Slope           : not-applicable
=====
Queue : 8 Net=nc Port=5/1/5
=====
FC Map           : nc
Dest Tap        : not-applicable   Dest FP          : not-applicable
Admin PIR       : 10000000         Oper PIR        : Max
Admin CIR       : 1000000          Oper CIR        : 1000000
Admin MBS       : 18816 KB         Oper MBS        : 18816 KB
High-Plus Drop T*: 18816 KB      High Drop Tail   : 18816 KB
Low Drop Tail   : 16896 KB         Exceed Drop Tail : 16896 KB
CBS             : 2256 KB          Depth           : 0
Slope           : not-applicable
=====
Queue : netQGrp->qg1:1(5/1/5)->1
=====
FC Map           : not-applicable
Dest Tap        : not-applicable   Dest FP          : not-applicable
Admin PIR       : 10000000         Oper PIR        : Max
Admin CIR       : 0                Oper CIR        : 0
Admin MBS       : 12288 KB         Oper MBS        : 12288 KB
High-Plus Drop T*: 12288 KB      High Drop Tail   : 12288 KB
Low Drop Tail   : 10944 KB         Exceed Drop Tail : 9792 KB
CBS             : 0 KB             Depth           : 0
Slope           : not-applicable
=====
* indicates that the corresponding row element may have been truncated.
*A:PE#
    
```

### Output Example: show pool access-ingress

```

*A:PE# show pools 5/1/1 access-ingress
=====
Pool Information
=====
Port           : 5/1/1
Application    : Acc-Ing           Pool Name       : default
CLI Config. Resv CBS : 30%(default)
Resv CBS Step  : 0%               Resv CBS Max    : 0%
Amber Alarm Threshold: 0%         Red Alarm Threshold : 0%
-----
Utilization    State      Start-Avg  Max-Avg  Max-Prob
-----
HiPlus-Slope  Down      85%        100%     80%
High-Slope    Down      70%        90%      80%
Low-Slope     Down      50%        75%      80%
Exceed-Slope  Down      30%        55%      80%
    
```



```

Time Avg Factor      : 7
Pool Total          : 52224 KB
Pool Shared         : 36096 KB          Pool Resv           : 16128 KB
-----
Current Resv CBS    : Provisioned    Rising      Falling      Alarm
%age                : all Queues    Alarm Thd   Alarm Thd    Color
-----
30%                 : 0 KB          NA          NA          Green
Pool Total In Use   : 0 KB
Pool Shared In Use  : 0 KB          Pool Resv In Use : 0 KB
WA Shared In Use    : 0 KB
HiPlus-Slope Drop Pr*: 0          Hi-Slope Drop Prob : 0
Lo-Slope Drop Prob  : 0          Excd-Slope Drop Prob : 0
=====
Queue Information
=====
Queue : 1->5/1/1:1->1
=====
FC Map              : be l2 af l1 h2 ef h1 nc
Dest Tap            : 5/1          Dest FP         : 1
Admin PIR           : 10000000      Oper PIR        : Max
Admin CIR           : 0             Oper CIR        : 0
Admin FIR           : 0             Oper FIR        : 0
Admin MBS           : 12288 KB      Oper MBS        : 12288 KB
High-Plus Drop Tail : 12288 KB      High Drop Tail  : 12288 KB
Low Drop Tail       : 10944 KB      Exceed Drop Tail : 9792 KB
CBS                 : 0 KB          Depth           : 0
Slope               : not-applicable
=====
Queue : 1->5/1/1:1->11
=====
FC Map              : be l2 af l1 h2 ef h1 nc
Dest Tap            : MCast        Dest FP         : not-applicable
Admin PIR           : 10000000      Oper PIR        : Max
Admin CIR           : 0             Oper CIR        : 0
Admin FIR           : 0             Oper FIR        : 0
Admin MBS           : 12288 KB      Oper MBS        : 12288 KB
High-Plus Drop Tail : 12288 KB      High Drop Tail  : 12288 KB
Low Drop Tail       : 10944 KB      Exceed Drop Tail : 9792 KB
CBS                 : 0 KB          Depth           : 0
Slope               : not-applicable
=====
No Matching Entries
=====
* indicates that the corresponding row element may have been truncated.
*A:PE#
    
```

**Output Example: show pools access-egress**

```

*A:PE# show pools 5/1/1 access-egress
=====
Pool Information
=====
Port                : 5/1/1
Application          : Acc-Egr          Pool Name        : default
CLI Config. Resv CBS : 30%(default)
Resv CBS Step        : 0%          Resv CBS Max     : 0%
Amber Alarm Threshold: 0%          Red Alarm Threshold : 0%
-----
    
```

```

Queue-Groups
-----
Queue-Group:Instance : policer-output-queues:1
-----
Utilization          State      Start-Avg   Max-Avg     Max-Prob
-----
HiPlus-Slope        Down      85%         100%        80%
High-Slope          Down      70%         90%         80%
Low-Slope           Down      50%         75%         80%
Exceed-Slope        Down      30%         55%         80%
Time Avg Factor      : 7
Pool Total           : 75264 KB
Pool Shared          : 52224 KB      Pool Resv           : 23040 KB
-----
Current Resv CBS     Provisioned    Rising        Falling       Alarm
%age                all Queues    Alarm Thd     Alarm Thd     Color
-----
30%                 0 KB          NA            NA            Green
Pool Total In Use   : 0 KB
Pool Shared In Use  : 0 KB        Pool Resv In Use : 0 KB
WA Shared In Use    : 0 KB
HiPlus-Slope Drop Pr*: 0      Hi-Slope Drop Prob : 0
Lo-Slope Drop Prob  : 0      Excd-Slope Drop Prob : 0
=====
Queue Information
=====
Queue : 1->5/1/1:1->1
=====
FC Map              : be l2 af l1 h2 ef h1 nc
Dest Tap            : not-applicable   Dest FP          : not-applicable
Admin PIR           : 10000000         Oper PIR         : Max
Admin CIR           : 0                Oper CIR         : 0
Admin MBS           : 12288 KB         Oper MBS         : 12288 KB
High-Plus Drop Tail : 12288 KB         High Drop Tail   : 12288 KB
Low Drop Tail       : 10944 KB         Exceed Drop Tail : 9792 KB
CBS                 : 0 KB             Depth            : 0
Slope               : not-applicable
=====
Queue : accQGrp->policer-output-queues:1(5/1/1)->1
=====
FC Map              : not-applicable
Dest Tap            : not-applicable   Dest FP          : not-applicable
Admin PIR           : 10000000         Oper PIR         : Max
Admin CIR           : 0                Oper CIR         : 0
Admin MBS           : 12288 KB         Oper MBS         : 12288 KB
High-Plus Drop Tail : 12288 KB         High Drop Tail   : 12288 KB
Low Drop Tail       : 10944 KB         Exceed Drop Tail : 9792 KB
CBS                 : 0 KB             Depth            : 0
Slope               : not-applicable
=====
Queue : accQGrp->policer-output-queues:1(5/1/1)->2
=====
FC Map              : not-applicable
Dest Tap            : not-applicable   Dest FP          : not-applicable
Admin PIR           : 10000000         Oper PIR         : Max
Admin CIR           : 0                Oper CIR         : 0
Admin MBS           : 12288 KB         Oper MBS         : 12288 KB
High-Plus Drop Tail : 12288 KB         High Drop Tail   : 12288 KB
Low Drop Tail       : 10944 KB         Exceed Drop Tail : 9792 KB
CBS                 : 0 KB             Depth            : 0

```

```
Slope          : not-applicable
=====
* indicates that the corresponding row element may have been truncated.
*A:PE#
```

**Output Example: show pools access-ingress statistics**

```
:admin@Dut-A# show pools 1/1/c1/1 access-ingress statistics

=====
Pool Stats Information
=====
-----
Packets/Octets
-----
Fwd:                15/15000
Drop due to:
  Queue:            13038037/13038037000
  Exceed-Slope:    0/0
  Low-Slope:       0/0
  High-Slope:      0/0
  HiPlus-Slope:   0/0
  Pool Shared:     0/0
  Pool Total:      0/0
  Other:           0/0
Total:             13038052/13038052000
=====
```

**Output Fields: show pools**

Table 384: Output Fields: show pools describes the output fields for the show pools command.

Table 384: Output Fields: show pools

Label	Description
Type	Specifies the pool type.
ID-FP	Specifies the card-FP or MDA-FP or card, MDA, or port designation.
Application/Type	Specifies what the pool would be used for. The pools could be used for access or network traffic at either ingress or egress.
Pool Name	Specifies the name of the pool being used.
Resv CBS	Specifies the percentage of pool size reserved for CBS.
Utilization	Specifies the type of the slope policy.
State	The administrative status of the port.
Start-Avg	Specifies the percentage of the buffer utilized after which the drop probability starts to rise above 0.
Max-Avg	Specifies the percentage of the buffer utilized after which the drop probability is 100 percent. This implies that all packets beyond this point will be dropped.

Label	Description
Time Avg Factor	Specifies the time average factor the weighting between the previous shared buffer average utilization result and the new shared buffer utilization in determining the new shared buffer average utilization.
Actual ResvCBS	Specifies the actual percentage of pool size reserved for CBS.
Admin ResvCBS	Specifies the percentage of pool size reserved for CBS.
PoolSize	Specifies the size in percentage of buffer space. The value '-1' implies that the pool size should be computed as per fair weighting between all other pools.
Pool Total	Displays the total pool size.
Pool Shared	Displays the amount of the pool which is shared.
Pool Resv	Specifies the percentage of reserved pool size.
Pool Total In Use	Displays the total amount of the pool which is in use.
Pool Shared In Use	Displays the amount of the pool which is shared that is in use.
Queue	Specifies the number of packets/octets discarded in the queue.
Exceed-Slope	Specifies the number of packets/octets discarded because of wred-slope (exceed).
Low-Slope	Specifies the number of packets/octets discarded because of wred-slope (low).
High-Slope	Specifies the number of packets/octets discarded because of wred-slope (high).
HiPlus-Slope	Specifies the number of packets/octets discarded because of wred-slope (hiPlus).
Pool Shared	Specifies the number of packets/octets discarded by exceeding shared-buffer-pool size.
Pool Total	Specifies the number of packets/octets discarded after the total size of the bufferpool is reached.

## pools

### Syntax

**pools** *port-id* {**access-ingress** | **access-egress** | **network-egress**} **statistics**

**pools** *slot-number* **fp** *fp-number* {**network-ingress**} **statistics**

### Context

[\[Tree\]](#) (clear pools)

### Full Context

clear pools

## Description

This command clears buffer pool statistics.

## Parameters

### *port-id*

Clears information for the specified port.

**Values** 18 characters maximum

### *slot-number*

Clears information for the specified card slot.

**Values** 1 to 10

### *fp-number*

Clears information for the specified FP.

**Values** 1 to 8

### **statistics**

Clears buffer pool statistics.

**Values** **Keyword**

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS

## 18.66 port

port

## Syntax

**port** [*port-id*] [**statistics** [**egress-aggregate**]] [**detail**]

**port** [*port-id*] **statistics aggregate-queue**

**port** *port-id* **associations**

**port** [*port-id*] **description** [**detail**]

**port** *port-id* **dotx1** [**detail**]

**port** **aps**

**port** [*port-id*] **cem**

**port** *port-id* **ethernet** [**association** | **detail**]

**port** *port-id* **ethernet** [**association** | **detail**] **efm-oam** [**event-logs** [{**failure** | **degraded**}] [{**active** | **cleared**}]

**port** *port-id* **ethernet** [**association** | **detail**] **lldp** [**nearest-bridge** | **nearest-non-tpmr** | **nearest-customer**] [**remote-info**] [**detail**]

**port** **A/gnss**

**port** **B/gnss**

**port** *port-id* **hs-secondary-shaper** *secondary-shaper-name* [**statistics** | **associations**]

**port** *port-id* **hs-secondary-shaper**

**port** *port-id* **hw-agg-shaper-scheduler** [**statistics**] [**monitor-threshold**]

**port** *port-id* **macsec** **sub-port** *sub-port-id* [**detail**] [**statistics**]

**port** *port-id* **monitor-threshold**

**port** *port-id* **optical**

**port** *port-id* **otu**

**port** *port-id* **port-queues** **queue** *queue-id*

**port** *port-id* **port-queues** **queue-depth** [*queue* *queue-id*]

**port** *port-id* **port-scheduler** **statistics**

**port** *port-id* **queue-group** [**ingress** | **egress**] [*queue-group-name*] [**access** | **network**] [**instance** *instance-id*]

**port** *port-id* **queue-group** [**ingress** | **egress**] [*queue-group-name*] [**access** | **network**] **associations** [**instance** *instance-id*]

**port** *port-id* **queue-group** [**ingress** | **egress**] *queue-group-name* [**access** | **network**] [**instance** *instance-id*] **queue-depth** [*queue* *queue-id*]

**port** *port-id* **queue-group** [**ingress** | **egress**] [*queue-group-name*] [**access** | **network**] **statistics** [**instance** *instance-id*]

**port** *port-id* **queue-group** **summary**

**port** *port-id* **vport** *vport-name* **monitor-threshold**

## Context

[\[Tree\]](#) (show port)

## Full Context

show port

## Description

This command displays port or channel information.

If the *port-id* parameter only specifies a portion of a port identifier, a summary of all ports that start with that portion is displayed. For example, specifying a slot number and MDA number displays a summary of all ports on that MDA. If no *port-id* is provided, a summary of all ports in the system is displayed.

If the **detail** keyword is specified without any *port-id*, the detailed output of every port is displayed. This is useful for generating a complete report or as an input into the **| match** post-filtering command to display only specific fields for all ports (customized summaries).

If the *port-id* specifies a unique port, information about that port is displayed. The specific information displayed depends on the type of port. Additional information can be displayed if the **detail** keyword is

included. In addition, information subsets can be displayed by using various keywords. For example, the **otu** keyword displays only the OTU interface information for the port.

When the **associations** keyword is specified and the *port-id* is a member of a LAG, the command is interpreted as a request to display the associations of that LAG (see the **show lag lag-id associations** command).

### Parameters

#### *port-id*

Specifies the physical port ID in the form *slot/mda/port*. The following table describes the port ID values.

Table 385: Port ID values

Product	Slot	MDA	Port	Values
7750 SR-12	1 to 10	1, 2	1 to 60 (depending on the MDA type)	—
7750 SR-7	1 to 5	1, 2		—
7950 XRS	1 to 20	—		—
7450 ESS-7	—	—		1 to 4
7450 ESS-12	—	—		1 to 0
7750 SR single-slot FP5	—	—		A/gnss
7750 SR-2se	—	—		A/gnss B/gnss
<b>Channelized MDAs</b>				
CHOC12-SFP	—	—	—	<i>slot/mda/port</i> [1 to 4]. [1 to 3]. [1 to 28]. [..24] For example, 7/2/1.1.1.28.24
CHOC3-SFP	—	—	—	<i>slot/mda/port</i> . [1 to 3]. [1 to 28]. [..24] For example, 7/2/1.1.28.24
DS3	—	—	—	<i>slot/mda/port</i> . [1 to 28] . [..24] For example, 7/1/1.1.1

#### Values

*port-id*

*slot[/mda[/port]]* or

*slot/mda/port* [.channel]

aps-id    *aps-group-id* [.channel]

aps

keyword

	<i>group-id</i>	1 to 64
ccag-id	<i>slot/mda/path-id[cc-type]</i>	
	<i>path-id</i>	a,b
	cc-type	.sap-net, .net-sap
eth-sat-id	<i>esat-id [/slot/[u]port]</i>	
	esat	keyword
	id	1 to 20
	u	keyword for up-link port
pxc-id	<i>pxc-id.sub-port</i>	
	pxc	keyword
	id	1 to 64
	sub-port	a, b
<i>esa-port</i>	<i>esa-esa-id[/vm-id[/esa-keyword]]</i>	
	esa	keyword
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4
	<i>esa-keyword</i>	<p><b>fm-sub</b> Information/statistics on the internal interface toward an AA ESA-VM for from-subscriber traffic</p> <p><b>to-sub</b> Information/statistics on the internal interface toward an AA ESA-VM for to-subscriber traffic</p> <p><b>aa-svc</b> Information/statistics on the internal interface toward an AA ESA-VM for aa-service traffic</p> <p><b>private</b> Information/statistics on the internal interface toward a tunnel ESA-VM for private traffic</p> <p><b>public</b> Information/statistics on the internal interface toward a tunnel ESA-VM for public traffic</p> <p><b>ike</b> Information/statistics on the internal interface toward a tunnel ESA-VM for IKE traffic</p>



---

<b>icmp</b>	Information/statistics on the internal interface toward a tunnel ESA-VM for ICMP traffic
<b>frag</b>	Information/statistics on the internal interface toward a tunnel ESA-VM for fragmented traffic
<b>nat-in-ip</b>	Information/statistics on the internal interface toward a BB ESA-VM for NAT44 and NAT64 upstream/downstream traffic on the inside, for WLAN-GW tunnel traffic from/toward access points, or for a reassembly traffic over a SAP-based interface
<b>nat-out-ip</b>	Information/statistics on the internal interface toward a BB ESA-VM for NAT44, DS-Lite, NAT64 and L2-aware NAT upstream/downstream traffic on the outside, or for WLAN-GW UE traffic from/toward the network
<b>nat-in-l2</b>	Information/statistics on the internal interface toward a BB ESA-VM for L2-aware NAT
<b>lns-net</b>	Information/statistics on the internal interface toward a LNS ESA-VM, L2TP encapsulated packets from the LAC undergoes L2TP header removal
<b>lns-esm</b>	Information/statistics on the internal interface toward a LNS ESA-VM, IP packets from the network which undergoes L2TP encapsulation
<b>nat-in-ds</b>	Information/statistics on the internal interface toward a BB ESA-VM for DS-lite upstream/downstream traffic on the inside
<b>lo-gre</b>	Information/statistics on the internal interface between a WLAN-GW anchor ESA VM and tunnel ESA VM, for both up and downstream traffic

**access**

Keyword that displays the queue group name is on an access port.

**active**

Keyword that displays only active events.

### **aggregate-queue**

Keyword that displays the aggregated number of forwarded and dropped packets and bytes per direction across all queues on a PXC port (pxc-<id>.a or pxc-<id>.b).

The system aggregates statistics from all queues under the specified PXC port for presentation. The duration required to gather these statistics is typically brief, though it may vary based on the system load at the time of querying and the number of queues and member ports in a LAG.

Statistics are cached for a 30-second interval. Consequently, executing this command more frequently than every 30 seconds yields identical results and the tmnxPortLastFetchedTime MIB entry and YANG state variable does not change.

### **aps**

Keyword that displays the ports on APS groups.

### **associations**

Keyword that displays a list of port association.

### **cem**

Keyword that displays CEM encap ports and channels.

### **cleared**

Keyword that displays remote information about the bridge MAC.

### **degraded**

Keyword that displays degrade severity events.

### **description**

Keyword that displays port description strings.

### **detail**

Keyword that displays detailed information.

### **dot1x**

Keyword that displays information about 802.1x status and statistics.

### **egress**

Keyword that displays whether the queue group name is an egress policy.

### **egress-aggregate**

Keyword that displays aggregate egress statistics.

### **ethernet**

Keyword that displays Ethernet port information.

### **failure**

Keyword that displays failure severity events.

### **A/gnss**

Keyword that displays interface information for the GNSS port on CPM A.

### **B/gnss**

Keyword that displays interface information for the GNSS port on CPM B.

### **hs-secondary-shaper**

Keyword that displays information about a specific HS secondary shaper on a port.

**ingress**

Keyword that displays whether the queue group name is an ingress policy.

**instance-id**

Specifies the identification of a specific instance of the queue group.

**Values** 1 to 65535

**macsec**

Keyword that displays the MACsec information for the port.

**monitor-threshold**

Keyword that displays the exceed-count for the port-scheduler under Vport (if specified) or for a physical port.

**optical**

Keyword that displays optical information.

**otu**

Keyword that displays optical transport unit (OTU) information.

**nearest-bridge**

Keyword that displays nearest bridge information.

**nearest-customer**

Keyword that displays nearest customer information.

**nearest-non-tpmr**

Keyword that displays nearest Two-Port MAC Relay (TPMR) information.

**network**

Keyword that displays the queue group name is on a network port.

**port-scheduler**

Keyword that displays the packet and octet counters for traffic exiting the specified port with an applied port scheduler policy, showing the total forwarded and dropped packets and octets, and the forwarded and dropped packets and octets per level.

**queue**

Keyword that displays the queue information.

**queue-depth**

Keyword that displays queue depth information for the specified queue group queue.

**queue-group**

Keyword that displays the queue group information.

**queue-group-name**

Specifies the name of an existing queue group template, up to 32 characters.

**queue-id**

Specifies the queue identification.

**Values** 1 to 16

**remote-info**

Keyword that displays remote information about the bridge MAC.

**secondary-shaper-name**

Displays information about the HS secondary name, up to 32 characters.

**statistics**

Keyword that displays port statistics.

**vport-name**

Specifies the name of the Vport up, to 32 characters in length.

**Platforms**

All

**Output**

The following outputs are examples, and [Table 386: Output Fields: show port <port-id>](#) provides an alphabetized list of descriptions for the output fields.

- [Output Example: show port <port-id>](#)
- [Output Example: show port <port-id> \(Summary Table of Ports\)](#)
- [Output Example: show port <port-id> associations](#)
- [Output Example: show port <port-id> detail \(Ethernet Interface Port\)](#)
- [Output Example: show port <port-id> \(Excerpt Showing CFP Port with a QSFP28 Adapter\)](#)
- [Output Example: show port <port-id> dot1x](#)
- [Output Example: show port <port-id> ethernet](#)
- [Output Example: show port <port-id> ethernet efm-oam](#)
- [Output Example: show port <port-id> ethernet efm-oam event-logs](#)
- [Output Example: show port <port-id> ethernet efm-oam event-logs](#)
- [Output Example: show port <port-id> ethernet lldp remote-info detail](#)
- [Output Example: show port <port-id> ethernet lldp detail](#)
- [Output Example: show port A/gnss \(GNSS RF port\)](#)
- [Output Example: show port <port-id> macsec sub-port <sub-port-id> detail](#)
- [Output Example: show port <port-id> macsec sub-port <sub-port-id> statistics](#)
- [Output Example: show port <port-id> optical detail](#)
- [Output Example: show port <port-id> for a QSFP-LS optical line system](#)
- [Output Example: show port <port-id> otu detail](#)
- [Output Example: show port <port-id> port-scheduler statistics](#)
- [Output Example: show port <port-id> port-queues queue <queue-id>](#)
- [Output Example: show port <port-id> queue-group ingress](#)
- [Output Example: show port <port-id> sonet path detail](#)
- [Output Example: show port <port-id> \(Showing Channelized Ports\)](#)

- [Output Example: show port <port-id> \[statistics \[egress-aggregate\]\] \[detail\]](#)
- [Output Example: show port <port-id> vport <vport-name>](#)
- [Output Example: show port](#)
- [Output Example: show port detail for a satellite uplink port](#)
- [Output Example: show port detail for a satellite client port](#)
- [Output Example: show port statistics aggregate-queue](#)

**Output Example: show port <port-id>**

```
*A:cses-V22# show port
=====
Ports on Slot 1
=====
Port      Admin Link Port  Cfg  Oper  LAG/  Port  Port  Port  C/QS/S/XFP/
Id        State      State State  MTU  MTU  Bndl Mode Encp Type  MDIMDX
-----
1/1/1     Down  Yes  Up    8704 8704  - netw null xcme  GIGE-LX 10KM
1/1/2     Up    Yes  Up    1514 1514  - accs null xcme  GIGE-LX 10KM
1/1/3     Up    Yes  Up    1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/4     Up    Yes  Up    1514 1514  - accs null xcme  GIGE-LX 10KM
1/1/5     Up    Yes  Up    1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/6     Up    Yes  Up    1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/7     Up    Yes  Up    1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/8     Up    Yes  Up    8704 8704  - hybr dotq xcme  GIGE-LX 10KM
1/1/9     Up    Yes  Up    1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/10    Down  Yes  Down  8704 8704  - netw null xcme  GIGE-LX 10KM
```

```
A:admin@mci(right-b4)# show port
=====
Ports on Slot 1
=====
Port      Admin Link Port  Cfg  Oper  LAG/  Port  Port  Port  C/QS/S/XFP/
Id        State      State State  MTU  MTU  Bndl Mode Encp Type  MDIMDX
-----
1/1/m1/1  Link Up                anchor  100G
1/1/c1    Up          Link Up
1/1/c1/1  Up    No  Down  9212 9212  - netw null xgige
1/1/c1/2  Down  No  Down  9212 9212  - netw null xgige
1/1/c1/3  Down  No  Down  9212 9212  - netw null xgige
...
=====
Ports on Port Cross Connect 1
=====
Port      Admin Link Port  Cfg  Oper  LAG/  Port  Port  Port  C/QS/S/XFP/
Id        State      State State  MTU  MTU  Bndl Mode Encp Type  MDIMDX
-----
pxc-1.a   Up    Yes  Link Up 1574 1574  - hybr dotq xgige
pxc-1.b   Up    Yes  Link Up 1574 1574  - hybr dotq xgige
pxc-2.a   Up    Yes  Link Up 1574 1574  - hybr dotq xgige
pxc-2.b   Up    Yes  Link Up 1574 1574  - hybr dotq xgige
```

**Output Example: show port <port-id> (Summary Table of Ports)**

```
*A:ALU-1# show port 1/1
=====
Ports on Slot 1
=====
Port      Admin Link Port  Cfg  Oper  LAG/  Port  Port  Port  SFP/XFP/
```

```

Id          State   State   MTU  MTU  Bndl Mode Encp Type  MDIMDX
-----
1/1/1      Down   No      Down 1518 1518 1 accs dotq gige
1/1/2      Down   No      Down 1578 1578 - netw null gige
1/1/3      Down   No      Down 1578 1578 - netw null gige
1/1/4      Up     No      Down 1514 1514 - accs null gige
1/1/5      Up     No      Down 1578 1578 - netw null gige
=====
*A:ALU-1#
    
```

**Output Example: show port <port-id> associations**

```

A:ALA-1# show port 1/1/6 associations
=====
Interface Table
=====
Router/ServiceId      Name                Encap Val
-----
Router: Base          if1000              1000
Router: Base          if2000              2000
-----
Interfaces
=====
A;ALA-1#
    
```

**Output Example: show port <port-id> detail (Ethernet Interface Port)**

```

A:ALU-1# show port 5/1/4 detail
=====
Ethernet Interface
=====
Description           : 10-Gig Ethernet
Interface             : 5/1/4
Link-level            : Ethernet
Admin State           : up
Oper State             : down
Physical Link         : No
Single Fiber Mode     : No
IfIndex               : 170000384
Last State Change    : 04/28/2017 13:09:15
Hold Time Down Rmng  : 0 cs
Last Cleared Time     : N/A
Phys State Chng Cnt  : 10
Oper Speed             : 10 Gbps
Config Speed          : N/A
Oper Duplex           : full
Config Duplex         : N/A
MTU                   : 9212
Min Frame Length     : 64 Bytes
Hold time up         : 0 seconds
Hold time down       : 0 seconds
Hold Time Up Rmng    : 0 cs
DDM Events            : Enabled
RS-FEC Mode          : None

Configured Mode       : network
Dot1Q Ethertype       : 0x8100
PBB Ethertype         : 0x88e7
Ing. Pool % Rate     : 100
Egr. Pool % Rate     : 100
Ing. Pool Policy      : n/a
Egr. Pool Policy      : n/a
Net. Egr. Queue Pol  : default
Egr. Sched. Pol      : n/a
HS Scheduler Plcy    : default
HS Port Pool Plcy    : default
Monitor Port Sched   : Disabled
Monitor Agg Q Stats  : Disabled
Auto-negotiate       : N/A
Oper Phy-tx-clock     : not-applicable
Accounting Policy     : None
Acct Plcy Eth Phys   : None
Egress Rate           : Default
Oper Egress Rate     : unrestricted
Load-balance-algo    : Default
MDI/MDX              : N/A
Collect-stats        : Disabled
Collect Eth Phys     : Disabled
Ingress Rate         : Default
LACP Tunnel          : Disabled
    
```

```

Access Bandwidth   : Not-Applicable           Booking Factor    : 100
Access Available BW: 0
Access Booked BW  : 0
Sflow              : Disabled

Dampening State   : Active                   Current Penalties: 2297
Suppress Threshold: 1500                     Reuse Threshold  : 1000
Max Penalties     : 4000                     Max Suppress Time: 40 seconds
Half Life        : 20 seconds

Down-when-looped  : Disabled                 Keep-alive       : 10
Loop Detected    : False                     Retry            : 120
Use Broadcast Addr: False

Sync. Status Msg. : Disabled                 Rx Quality Level : N/A
Tx DUS/DNU       : Disabled                 Tx Quality Level : N/A
SSM Code Type    : sdh                       ESMC Tunnel      : Disabled

PTP Timestamping  : Enabled
PTP IPv4 address  : 10.0.0.1
PTP IPv6 address  : 2001:db8::1

Down On Int. Error: Disabled                 DOIE Tx Disable  : Disabled

CRC Mon SD Thresh: Disabled                 CRC Mon Window   : 10 seconds
CRC Mon SF Thresh: Disabled

Sym Mon SD Thresh: Disabled                 Sym Mon Window   : 10 seconds
Sym Mon SF Thresh: Disabled                 Tot Sym Mon Errs : 0

EFM OAM           : Disabled                 EFM OAM Link Mon: Disabled
Ignr EFM OAM State: False

Configured Address: 10:e8:78:4d:24:f0
Hardware Address  : 10:e8:78:4d:24:f0
Cfg Alarm         : remote local
    
```

Transceiver Data

```

Transceiver Status : operational
Transceiver Type   : SFP
Model Number       : 3HE04823AAAA01 ALA IPU3ANKEAA
TX Laser Wavelength: 1310 nm                 Diag Capable     : yes
Connector Code     : LC                       Vendor OUI        : 00:90:65
Manufacture date   : 2016/07/23              Media             : Ethernet
Serial Number      : AW40PC8
Part Number        : FTLX1471D3BCL-A5
Optical Compliance: 10GBASE-LR
Link Length support: 10km for SMF
    
```

=====  
 Transceiver Digital Diagnostic Monitoring (DDM), Internally Calibrated  
 =====

	Value	High Alarm	High Warn	Low Warn	Low Alarm
Temperature (C)	+38.1	+78.0	+73.0	-8.0	-13.0
Supply Voltage (V)	3.31	3.70	3.60	3.00	2.90
Tx Bias Current (mA)	40.3	85.0	80.0	20.0	15.0
Tx Output Power (dBm)	-1.29	2.00	1.00	-7.00	-8.00
Rx Optical Power (avg dBm)	-1.38	2.50	2.00	-18.01	-20.00

=====  
 =====

```

OTU Interface
=====
OTU Status      : Disabled
=====

Traffic Statistics
=====
                                     Input      Output
-----
Octets          0              0
Packets         0              0
Errors          0              0
Utilization (300 seconds)  0.00%      0.00%
=====

Ethernet Statistics
=====
Broadcast Pckts : 0 Drop Events      : 0
Multicast Pckts : 0 CRC/Align Errors : 0
Undersize Pckts : 0 Fragments       : 0
Oversize Pckts  : 0 Jabbers        : 0
Collisions      : 0
Octets          : 0
Packets         : 0
Packets of 64 Octets : 0
Packets of 65 to 127 Octets : 0
Packets of 128 to 255 Octets : 0
Packets of 256 to 511 Octets : 0
Packets of 512 to 1023 Octets : 0
Packets of 1024 to 1518 Octets : 0
Packets of 1519 or more Octets : 0
=====

Port Statistics
=====
                                     Input      Output
-----
Unicast Packets 0              0
Multicast Packets 0              0
Broadcast Packets 0              0
Discards        0              0
Unknown Proto Discards 0
=====

Ethernet-like Medium Statistics
=====
Alignment Errors : 0 Sngl Collisions : 0
FCS Errors       : 0 Mult Collisions : 0
SQE Test Errors  : 0 Late Collisions : 0
CSE              : 0 Excess Collisns : 0
Too long Frames  : 0 Int MAC Tx Errs : 0
Symbol Errors    : 0 Int MAC Rx Errs : 0
In Pause Frames  : 0 Out Pause Frames : 0
=====

Per Threshold MDA Discard Statistics
=====
                                     Packets      Octets
-----
Threshold 0 Dropped : 0              0
  
```



```

Threshold 1 Dropped :           0           0
Threshold 2 Dropped :           0           0
Threshold 3 Dropped :           0           0
Threshold 4 Dropped :           0           0
Threshold 5 Dropped :           0           0
Threshold 6 Dropped :           0           0
Threshold 7 Dropped :           0           0
Threshold 8 Dropped :           0           0
Threshold 9 Dropped :           0           0
Threshold 10 Dropped :          0           0
Threshold 11 Dropped :          0           0
Threshold 12 Dropped :          0           0
Threshold 13 Dropped :          0           0
Threshold 14 Dropped :          0           0
Threshold 15 Dropped :          0           0
=====
    
```

```

=====
Ingress Port Forwarding Engine Drop Reason Statistics
=====
    
```

```

IPv4 Header Error                0
IPv4 Invalid Address             0
IPv6 Header Error                0
IPv6 Invalid Address             0
IP Route Blackholed              0
ACL Filter Discards              0
Unicast RPF Check Failed         0
BFD Spoof Check Failed          0
Unicast MAC Destination Address Mismatch 0
Multicast MAC With Unicast Dest IP 0
Unknown MAC Destination Address Discarded in VPLS 0
L2 Service MTU Exceeded         0
Needs ICMP                       0
=====
    
```

```

=====
Queue Statistics
=====
    
```

```

-----
Ingress Queue 1      Packets      Octets
  In Profile forwarded :    0          0
  In Profile dropped   :    0          0
  Out Profile forwarded :    0          0
  Out Profile dropped  :    0          0
Ingress Queue 2      Packets      Octets
  In Profile forwarded :    0          0
  In Profile dropped   :    0          0
  Out Profile forwarded :    0          0
  Out Profile dropped  :    0          0
Ingress Queue 3      Packets      Octets
  In Profile forwarded :    0          0
  In Profile dropped   :    0          0
  Out Profile forwarded :    0          0
  Out Profile dropped  :    0          0
Ingress Queue 4      Packets      Octets
  In Profile forwarded :    0          0
  In Profile dropped   :    0          0
  Out Profile forwarded :    0          0
  Out Profile dropped  :    0          0
Ingress Queue 5      Packets      Octets
  In Profile forwarded :    0          0
  In Profile dropped   :    0          0
  Out Profile forwarded :    0          0
    
```

```

    Out Profile dropped      :    0          0
Ingress Queue 6           Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 7           Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 8           Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 9           Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 10          Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 11          Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 12          Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 13          Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 14          Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 15          Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0
Ingress Queue 16          Packets      Octets
    In Profile forwarded    :    0          0
    In Profile dropped      :    0          0
    Out Profile forwarded   :    0          0
    Out Profile dropped     :    0          0

Egress Queue 1           Packets      Octets
    In/Inplus Prof fwded   :    0          0
    In/Inplus Prof dropped :    0          0
    Out/Exc Prof fwded     :    0          0
    Out/Exc Prof dropped   :    0          0
Egress Queue 2           Packets      Octets
    In/Inplus Prof fwded   :    0          0
    
```

```

        In/Inplus Prof dropped:    0                0
        Out/Exc Prof fwded       :    0                0
        Out/Exc Prof dropped     :    0                0
    Egress Queue 3                Packets            Octets
        In/Inplus Prof fwded     :    0                0
        In/Inplus Prof dropped   :    0                0
        Out/Exc Prof fwded       :    0                0
        Out/Exc Prof dropped     :    0                0
    Egress Queue 4                Packets            Octets
        In/Inplus Prof fwded     :    0                0
        In/Inplus Prof dropped   :    0                0
        Out/Exc Prof fwded       :    0                0
        Out/Exc Prof dropped     :    0                0
    Egress Queue 5                Packets            Octets
        In/Inplus Prof fwded     :    0                0
        In/Inplus Prof dropped   :    0                0
        Out/Exc Prof fwded       :    0                0
        Out/Exc Prof dropped     :    0                0
    Egress Queue 6                Packets            Octets
        In/Inplus Prof fwded     :    0                0
        In/Inplus Prof dropped   :    0                0
        Out/Exc Prof fwded       :    0                0
        Out/Exc Prof dropped     :    0                0
    Egress Queue 7                Packets            Octets
        In/Inplus Prof fwded     :    0                0
        In/Inplus Prof dropped   :    0                0
        Out/Exc Prof fwded       :    0                0
        Out/Exc Prof dropped     :    0                0
    Egress Queue 8                Packets            Octets
        In/Inplus Prof fwded     :    0                0
        In/Inplus Prof dropped   :    0                0
        Out/Exc Prof fwded       :    0                0
        Out/Exc Prof dropped     :    0                0
    =====
    
```

**Output Example: show port <port-id> (Excerpt Showing CFP Port with a QSFP28 Adapter)**

```

B:Dut-A# show port 3/2/1
=====
...
=====
Adapter Data
Adapter Type : cfp-to-qsfp28
Model Number : 3HE13894AARA01
Vendor OUI   : 00:00:00
Manufacture date : 2018/07/07
Serial Number : R5183000030002
Part Number  : 3HE13894AARA01
    
```

**Output Example: show port <port-id> dot1x**

```

A:Dut-C# show port 2/1/11 dot1x
=====
802.1x Port Status
=====
Port control          : force-auth
Port status           : authorized
Authenticator PAE state : force-auth
Backend state         : idle
Reauth enabled        : no           Reauth period           : N/A
Max auth requests     : 2           Transmit period         : 30
Supplicant timeout    : 30          Server timeout          : 30
Quiet period          : 60
    
```

```

Radius-plcy      : N/A
Tunneling       : false
=====
802.1x Session Statistics
=====
authentication method : remote-radius
last session id       : PAC-04258000-6E64D82E
last session time     : 49213d04h
last session username : N/A
last session term cause : N/A
user tx octets        : 1525626453326
user tx frames        : 329677551
user rx octets        : 1399995911442
user rx frames        : 302536308
=====
Macsec
=====
Admin State      : Up
eapol-destination-address :
Security Zone    : 3
ca-name          : dut_B_C_256_01
=====
  
```

**Output Example: show port <port-id> ethernet**

```

*A:ALA-12>config# show port 1/1/1 ethernet
=====
Ethernet Interface
=====
Description      : 1-Gig/10-Gig Ethernet
Interface        : 1/1/1
Link-level       : Ethernet
Admin State      : down
Oper State       : down
Config Duplex    : N/A
Physical Link    : No
Single Fiber Mode : No
IfIndex          : 35684352
Last State Change : 06/09/2022 17:09:47
Hold Time Down Rmng: 0 cs
Last Cleared Time : N/A
Phys State Chng Cnt: 0
RS-FEC Config Mode : None
RS-FEC Oper Mode  : None
Configured Mode  : network
Dot1Q Ethertype  : 0x8100
PBB Ethertype    : 0x88e7
Ing. Pool % Rate : 100
Net. Egr. Queue Pol: default
Egr. Sched. Pol  : n/a
DCPU Prot Policy : _default-port-policy
Oper DCPU Prot Plcy: _default-port-policy
Monitor Port Sched : Disabled
Monitor Agg Q Stats: Disabled
Monitor Oper Group : test
Auto-negotiate   : N/A
Oper Phy-tx-clock : not-applicable
Accounting Policy : None
Acct Plcy Eth Phys : None
Egress Rate      : Default
Oper Egress Rate : Unrestricted
Load-balance-algo : Default
Access Bandwidth : Not-Applicable

Oper Speed       : 10 Gbps
Config Speed     : 10 Gbps
Oper Duplex      : full

MTU              : 8704
Min Frame Length : 64 Bytes
Hold time up     : 0 seconds
Hold time down   : 0 seconds
Hold Time Up Rmng: 0 cs
DDM Events       : Enabled

Encap Type       : null
QinQ Ethertype   : 0x8100

Egr. Pool % Rate : 100

MDI/MDX          : N/A

Collect-stats    : Disabled
Collect Eth Phys : Disabled
Ingress Rate     : Default

LACP Tunnel      : Disabled
Booking Factor   : 100
  
```

```

Access Available BW: 0
Access Booked BW   : 0
Sflow              : Disabled
Discard Rx Pause   : Disabled
Tx Pause Frames    : Enabled
Suppress Threshold : 2000
Max Penalties      : 16000
Half Life          : 5 seconds
Down-when-looped   : Disabled
Loop Detected      : False
Use Broadcast Addr : False
Sync. Status Msg.  : Disabled
Tx DUS/DNU         : Disabled
SSM Code Type      : sdh

Reuse Threshold    : 1000
Max Suppress Time : 20 seconds

Keep-alive         : 10
Retry              : 120

Rx Quality Level   : N/A
Tx Quality Level   : N/A
ESMC Tunnel        : Disabled

PTP Timestamping   : Enabled
PTP IPv4 address   : 10.0.0.1
PTP IPv6 address   : 2001:db8::1

Down On Int. Error : Disabled
CRC Mon SD Thresh  : Disabled
CRC Mon SF Thresh  : Disabled
Sym Mon SD Thresh  : Disabled
Sym Mon SF Thresh  : Disabled
EFM OAM            : Disabled
Ignr EFM OAM State : False
Configured Address : b6:1b:01:01:00:01
Hardware Address    : b6:1b:01:01:00:01
Cfg Alarm           : remote local

DOIE Tx Disable    : Disabled
CRC Mon Window     : 10 seconds

Sym Mon Window     : 10 seconds
Tot Sym Mon Errs   : 0
EFM OAM Link Mon   : Disabled

Transceiver Data
Transceiver Status : operational
Transceiver Type    : SFP
Model Number        : 3HE04823AAAA01 ALA IPU3ANKEAA
TX Laser Wavelength: 1310 nm
Connector Code      : LC
Manufacture date    : 2009/12/17
Serial Number        : UGR04DK
Part Number         : FTLX1471D3BCL-A5
Optical Compliance  : 10GBASE-LR
Link Length support : 10km for SMF

DCO                 : Disabled
Diag Capable        : yes
Vendor OUI           : 00:90:65
Media                : Ethernet

=====
Transceiver Digital Diagnostic Monitoring (DDM), Internally Calibrated
=====
              Value High Alarm  High Warn   Low Warn   Low Alarm
-----
Temperature (C)      +25.4      +78.0       +73.0      -8.0       -13.0
Supply Voltage (V)   3.31        3.70        3.60        3.00        2.90
Tx Bias Current (mA) 35.6        85.0        80.0        20.0        15.0
Tx Output Power (dBm) -1.46       2.00        1.00       -7.00       -8.00
Rx Optical Power (avg dBm) -2.18       2.50        2.00      -18.01      -20.00
=====
Traffic Statistics
=====
              Input              Output
-----
Octets                0                0
Packets               0                0
Errors                0                0
Utilization (300 seconds) 0.00%           0.00%
=====
Port Statistics
=====

```

	Input	Output
-----	-----	-----
Unicast Packets	0	0
Multicast Packets	0	0
Broadcast Packets	0	0
Discards	0	0
Unknown Proto Discards	0	
=====	=====	=====
Ethernet-like Medium Statistics		
=====	=====	=====
Alignment Errors :	0 Sngl Collisions :	0
FCS Errors :	0 Mult Collisions :	0
SQE Test Errors :	0 Late Collisions :	0
CSE :	0 Excess Collisns :	0
Too long Frames :	0 Int MAC Tx Errs :	0
Symbol Errors :	0 Int MAC Rx Errs :	0
In Pause Frames :	0 Out Pause Frames :	0
=====	=====	=====

**Output Example: show port <port-id> ethernet efm-oam**

```

show port 1/1/1 ethernet efm-oam
=====
Ethernet Oam (802.3ah)
=====
Admin State      : down
Oper State      : disabled
Mode            : active
Pdu Size        : 1518
Config Revision  : 0
Function Support : LB
Transmit Interval : 1000 ms
Multiplier      : 5
Hold Time       : 0
Tunneling       : false
Loop Detected   : false
Grace Tx Enable  : true (inactive)
Grace Vendor OUI : 00:16:4d
Dying Gasp on Reset : true (inactive)
Soft Reset Tx Act : none
Trigger Fault   : none
Vendor OUI      : 00:16:4d (alu)
Vendor Info     : 00:01:00:02
No Peer Information Available
Loopback State  : None
Loopback Ignore Rx : Ignore
Ignore Efm State : false
Link Monitoring : disabled
Peer RDI Rx
  Critical Event : out-of-service
  Dying Gasp     : out-of-service
  Link Fault     : out-of-service
  Event Notify   : log-only
Local SF Action
  Event Burst    : 1
  Port Action    : out-of-service
  Dying Gasp     : disabled
  Critical Event : disabled
Errored Frame
  Enabled        : no
  Event Notify   : enabled
Discovery
  Ad Link Mon Cap : yes
Errored Frame Period
  Enabled        : no
  Event Notify   : enabled
    
```

```

SF Threshold      : 1                SF Threshold      : 1
SD Threshold      : disabled (0)     SD Threshold      : disabled (0)
Window            : 10 ds            Window            : 1488095 frames
Errored Symbol Period
Enabled           : no                Enabled           : no
Event Notify      : enabled           Event Notify      : enabled
SF Threshold      : 1                SF Threshold      : 1
SD Threshold      : disabled (0)     SD Threshold      : disabled (0)
Window (time)     : 10 ds            Window            : 600 ds
Window (symbols)  : 125000000

=====
Active Failure Ethernet OAM Event Logs
=====
Number of Logs : 0
=====

Ethernet Oam Statistics
=====
                                     Input           Output
-----
Information                          0              0
Loopback Control                      0              0
Unique Event Notify                   0              0
Duplicate Event Notify                 0              0
Unsupported Codes                     0              0
Frames Lost                           0              0
=====
    
```

**Output Example: show port <port-id> ethernet efm-oam event-logs**

```

show port 1/2/1 ethernet efm-oam event-logs
=====
Active Failure Ethernet OAM Event Logs
=====
Log Index          : 2
Event Time Reference : 10d 03:58:24
Location           : remote
Type               : Dying Gasp
Event Total        : 1
Port Affecting     : yes
-----
Number of Logs : 1
=====

Active Degraded Ethernet OAM Event Logs
=====
Number of Logs : 0
=====

Cleared Failure Ethernet OAM Event Logs
=====
Number of Logs : 0
=====

Cleared Degraded Ethernet OAM Event Logs
=====
Number of Logs : 0
=====
    
```

### Output Example: show port <port-id> ethernet lldp remote-info detail

```
show port 1/1/1 ethernet lldp remote-info detail
=====
Link Layer Discovery Protocol (LLDP) Port Information
=====
Port 1/1/1 Bridge nearest-bridge Remote Peer Information
-----
Remote Peer Index 9 at timestamp 12/08/2014 21:34:30:
Supported Caps      : bridge router
Enabled Caps       : bridge router
Chassis Id Subtype : 4 (macAddress)
Chassis Id         : D8:1C:FF:00:00:00
PortId Subtype     : 5 (interfaceName)
Port Id            : 31:2F:32:2F:32
                   "1/2/2"
Port Description   : n/a
System Name        : cses-V28
System Description : TiMOS-B-0.0.I4269 both/i386 Nokia 7750 SR Copyright
                   (c) 2000-2016 Nokia.
                   All rights reserved. All use subject to applicable
                   license agreements.
                   Built on Wed Dec 3 19:14:27 PST 2014 by builder in /
                   re10.0/I4269/panos/main

Remote Peer Index 9 management addresses at time 12/08/2014 21:34:30:
Address SubType    : 1 (IPv4)
Address            : 10.1.1.28
Address If SubType : 2                Address If Id      : 1
Address OID        : .1.3.6.1.4.1.1.6527.1.3.3

Port 1/1/1 Bridge nearest-non-tpmr Remote Peer Information
-----
No remote peers found

Port 1/1/1 Bridge nearest-customer Remote Peer Information
-----
No remote peers found

=====
```

### Output Example: show port <port-id> ethernet lldp detail

```
show port 1/1/1 ethernet lldp detail
=====
Link Layer Discovery Protocol (LLDP) Port Information
=====
Port 1/1/1 Bridge nearest-bridge
-----
Admin State      : txAndRx      Notifications      : Disabled
Tunnel Nearest Bridge : Disabled
Transmit TLVs   : portDesc sysName sysDesc sysCap
PortID TLV Subtype : tx-if-name

Management Address Transmit Configuration:
Index 1 (system) : Enabled      Address           : 10.1.1.31
Index 2 (IPv6 system) : Disabled    Address           : ::

Port LLDP Stats:
Tx Frames        : 11749          Tx Length Err Frames : 0
Rx Frames        : 70399          Rx Frame Discard     : 0
```



```

Rx Frame Errors      : 0           Rx TLV Discard      : 0
Rx TLV Unknown       : 0           Rx Ageouts         : 3

Port 1/1/1 Bridge nearest-non-tpmr
-----
Admin State          : disabled      Notifications      : Disabled
Transmit TLVs        : None
PortID TLV Subtype   : tx-local

Management Address Transmit Configuration:
Index 1 (system)     : Disabled      Address            : 10.1.1.31
Index 2 (IPv6 system): Disabled      Address            : ::

Port LLDP Stats:
Tx Frames            : 0           Tx Length Err Frames : 0
Rx Frames            : 0           Rx Frame Discard     : 0
Rx Frame Errors      : 0           Rx TLV Discard       : 0
Rx TLV Unknown       : 0           Rx Ageouts           : 0

Port 1/1/1 Bridge nearest-customer
-----
Admin State          : disabled      Notifications      : Disabled
Transmit TLVs        : None
PortID TLV Subtype   : tx-local

Management Address Transmit Configuration:
Index 1 (system)     : Disabled      Address            : 10.1.1.31
Index 2 (IPv6 system): Disabled      Address            : ::

Port LLDP Stats:
Tx Frames            : 0           Tx Length Err Frames : 0
Rx Frames            : 0           Rx Frame Discard     : 0
Rx Frame Errors      : 0           Rx TLV Discard       : 0
Rx TLV Unknown       : 0           Rx Ageouts           : 0

=====
    
```

**Output Example: show port A/gnss (GNSS RF port)**

```

# show port A/gnss
=====
GNSS Physical Interface
=====
Description          : GNSS receiver
Interface            : A/gnss          Port IfIndex        : 1611137290
Admin Status         : up              Oper Status         : up
Physical Link        : Yes
Constellation        : gps
Ant. Cable Delay     : 0              Elev. Mask Angle    : 10

Antenna Status       : ok              Visible Satellites  : 9
Sync Status          : locked          Used Satellites     : 7
Receiver Status      : Position Hold
Time                 : 2020/04/23 18:47:38  Latitude            : +45.34811
UTC Offset           : 17              Longitude           : -75.92142
Firmware Version     : 2.04.0          Altitude (m MSL)   : 90
=====
    
```

**Output Example: show port <port-id> macsec sub-port <sub-port-id> detail**

```
*A:Dut-C# show port 2/1/11 macsec sub-port 1 statistics
```

```

=====
MACsec Statistics
=====
-----
txSecyStats
-----
    Untagged Packets           : 0
    Too Long Packets          : 0
-----
txSCSecyStats
-----
TxSc SCI PortNum : 1
    Protected Packets         : 0
    Encrypted Packets         : 0
    Protected Octets          : 0
    Encrypted Octets          : 0
-----
txSASecyStats
-----
    AN : 0
        Protected SA Packets   : 0
        Encrypted SA Packets   : 0
    AN : 1
        Protected SA Packets   : 0
        Encrypted SA Packets   : 0
    AN : 2
        Protected SA Packets   : 0
        Encrypted SA Packets   : 0
    AN : 3
        Protected SA Packets   : 0
        Encrypted SA Packets   : 0
-----
rxSecyStats
-----
    No Tag Packets            : 4681
    Bad Tag Packets           : 0
    No SCI Packets            : 0
    Overrun Packets           : 0
-----
rxSCSecyStats
-----
SCI : a47b2ce1110d0001
    No Using SA Packets       : 0
    Late Packets               : 0
    Not Valid Packets         : 0
    Delayed Packets           : 0
    Unchecked Packets         : 0
    OK Packets                 : 0
    Validated Octets          : 0
    Decrypted Octets          : 0
-----
rxSASecyStats
-----
SCI : a47b2ce1110d0001
    AN : 2
        No Using SA Packets     : 0
        Not Valid Packets       : 0
        OK Packets               : 0
    AN : 3
        No Using SA Packets     : 0
        Not Valid Packets       : 0
        OK Packets               : 0
-----
rxSCSecyStats
    
```

```

-----
SCI : a47b2ce1128e0001
  No Using SA Packets      : 0
  Late Packets             : 0
  Not Valid Packets       : 0
  Delayed Packets         : 0
  Unchecked Packets       : 0
  OK Packets               : 0
  Validated Octets        : 0
  Decrypted Octets        : 0
-----
rxSASecyStats
-----
SCI : a47b2ce1128e0001
  AN : 0
    No Using SA Packets      : 0
    Not Valid Packets       : 0
    OK Packets               : 0
  AN : 1
    No Using SA Packets      : 0
    Not Valid Packets       : 0
    OK Packets               : 0
  AN : 2
    No Using SA Packets      : 0
    Not Valid Packets       : 0
    OK Packets               : 0
  AN : 3
    No Using SA Packets      : 0
    Not Valid Packets       : 0
    OK Packets               : 0
=====
    
```

**Output Example: show port <port-id> macsec sub-port <sub-port-id> statistics**

```

A:Dut-C# show port 2/1/11 macsec statistics
=====
MACsec Statistics
=====
-----
txSecyStats
-----
  Untagged Packets      : 0
  Too Long Packets     : 0
-----
rxSecyStats
-----
  No Tag Packets        : 758
  Bad Tag Packets       : 0
  No SCI Packets        : 0
  Overrun Packets      : 0
-----
txSCSecyStats
-----
  Protected Packets     : 0
  Encrypted Packets     : 355170025
  Protected Octets      : 0
  Encrypted Octets      : 1637917300250
-----
rxSCSecyStats
-----
SCI : 00:00:a4:7b:2c:e1
  No Using SA Packets   : 0
  Late Packets          : 0
    
```

```

Not Valid Packets      : 0
Delayed Packets       : 0
Unchecked Packets     : 0
OK Packets            : 325904694
Validated Octets      : 0
Decrypted Octets      : 1502922287478
-----
txSASecyStats
-----
AN : 0
  Protected SA Packets : 0
  Encrypted SA Packets : 355170201
-----
rxSASecyStats
-----
SCI : 00:00:a4:7b:2c:e1
AN : 0
  No Using SA Packets : 0
  Not Valid Packets   : 0
  OK Packets          : 325904947
=====
    
```

**Output Example: show port <port-id> optical detail**



**Note:**

In the **"Coherent Optical Module"** section of the output example, the configurable **Tx Pwr** values are only shown if the module supports this option.

```

*A:ALU-1# show port 4/1/1 optical detail
=====
Optical Interface
=====
Transceiver Data

Transceiver Status : operational
Transceiver Type   : MSA-100GLH
Model Number       : 28-0089-XX
TX Laser Wavelength: 1558.172 nm
TX Laser Frequency : 192.400 THz
Laser Tunability   : fully-tunable
Config Freq (MHz)  : 195300000           Min Freq (MHz)      : 191300000
Oper Freq (MHz)    : 195300000           Max Freq (MHz)      : 196100000
Fine Tune Range    : 6000 MHz             Fine Tune Resolution : 1 MHz
Supported Grids    : 100GHz 75GHz 50GHz 25GHz 12.5GHz 6.25GHz
Diag Capable       : yes
Number of Lanes    : 1
Connector Code     : LC                   Vendor OUI           : 00:03:fa
Manufacture date   : 2012/07/16           Media                 : Ethernet
Serial Number      : 122900645
Part Number        : AC100-201-00E
Optical Compliance : DWDM-TUN
Link Length support: 80km for SMF

=====
Transceiver Digital Diagnostic Monitoring (DDM)
=====
                                     Value High Alarm  High Warn   Low Warn   Low Alarm
-----
Temperature (C)                      +60.9        +80.0       +70.0      +0.0       -5.0
Supply Voltage (V)                    12.07        13.00       12.60      11.40      11.00
=====
    
```

```

=====
Transceiver Lane Digital Diagnostic Monitoring (DDM)
=====

```

	High Alarm	High Warn	Low Warn	Low Alarm
Lane Temperature (C)	+75.0	+70.0	+20.0	+15.0
Lane Tx Bias Current (mA)	10.0	9.0	3.0	2.0
Lane Tx Output Power (dBm)	3.00	2.00	0.00	-1.00
Lane Rx Optical Pwr (avg dBm)	8.16	5.00	-20.00	-23.01

```

-----
Lane ID Temp(C)/Alm      Tx Bias(mA)/Alm      Tx Pwr(dBm)/Alm      Rx Pwr(dBm)/Alm
-----
1          +48.4          5.1          0.99          -10.45
=====

```

```

=====
Coherent Optical Module
=====
Cfg Tx Target Power:  1.00 dBm
Cfg Rx LOS Thresh  : -23.00 dBm

Disp Control Mode   : automatic           Sweep Start Disp   : -25500 ps/nm
Cfg Dispersion      : 0 ps/nm             Sweep End Disp     : 2000 ps/nm
CPR Window Size     : 4 symbols
Cfg Tx Pwr Minimum  : -22.90 dBm
Cfg Tx Pwr Maximum  : 4.00 dBm

Cfg Alarms          : modflt mod netrx nettx hosttx
Alarm Status        :
Defect Points       :

Rx Q Margin         : 10.1 dB              Chromatic Disp     : 1 ps/nm
SNR X Polar         : 19.7 dB              Diff Group Delay   : 0 ps
SNR Y Polar         : 19.8 dB              Pre-FEC BER        : 0.000E+00

Module State        : ready
Tx Turn-Up States   : init laserTurnUp laserReadyOff laserReady
                    : modulatorConverge outputPowerAdjust
Rx Turn-Up States   : init laserReady waitForInput adcSignal opticalLock
                    : demodLock
=====

```

```

-----
Coherent Optical Port Statistics (Elapsed Seconds: 1281709)
-----

```

Statistic	Current	Average	Minimum	Maximum
Rx BER	9.060E-04	2.500E-01	0.000E+00	5.000E-01
Rx SNR (dB)	17.9	9.0	0.0	18.0
Rx OSNR (dB)	29.5	15.0	0.0	30.1
Rx Chromatic Disp (ps/nm)	2050	1027	0	2054
Rx Diff Group Delay (ps)	1	1	0	2
Rx Freq Offset (MHz)	108	90	-42	223
Rx Q (dB)	9.8	4.9	0.0	9.9
Rx Signal Power (dBm)	-0.04	-2.57	-99.00	0.44
Tx Total Power (dBm)	-11.88	-3.01	-99.00	0.00
Rx Total Power (dbm)	-11.88	-3.01	-99.00	0.00
Polar Depend Loss (dB)	0.6	0.6	0.5	0.7
State of polar ROC (krad/s)	0	65535	65535	0
Rx Media Frame Error Count	122	65535	65535	0

```

-----

```

**Output Example: show port <port-id> for a QSFP-LS optical line system**

```

show port 1/1/c2
=====
QSFP-DD Connector
=====
Description      : QSFP-DD Connector
Interface        : 1/1/c2
Admin State      : up
Oper State       : up
IfIndex          : 1610899584
Last State Change : 09/28/2023 16:43:14
Last Cleared Time : N/A
Breakout         : no breakout
RS-FEC Config Mode : None
DDM Events       : Enabled

Transceiver Data

Transceiver Status : unsupported
Transceiver Type   : QSFP28
OLS                : Enabled
Model Number       : none
TX Laser Wavelength: 1550 nm
Number of Lanes    : 2
Connector Code     : CS
Manufacture date   : 2022/10/21
Serial Number      : P20600032
Part Number        : QSFP-AMP-ZR
Optical Compliance : QSFP-AMP-ZR
Link Length support: 100km for SMF
DCO                : Disabled
OLS Egr Amp Gain   : 22.00 dB
Diag Capable      : yes
Vendor OUI         : 00:1c:73
Media              : Ethernet

=====
Transceiver Digital Diagnostic Monitoring (DDM)
=====
Value High Alarm  High Warn  Low Warn  Low Alarm
-----
Temperature (C)   +33.1     +70.0     +65.0     +0.0     -5.0
Supply Voltage (V) 3.29      3.46      3.40      3.20      3.13
=====

Transceiver Lane Digital Diagnostic Monitoring (DDM)
=====
High Alarm  High Warn  Low Warn  Low Alarm
-----
Pump Temperature (C) +75.0     +70.0     +5.0     +0.0
Amplifier Gain (dB) 25.50     25.10     0.00     0.00
Amplifier Output Power (dBm) 17.10     17.00     0.00     -6.04
Amplifier Input Power (dBm) 14.80     13.80     -22.52    -26.20

-----
Amp ID  Pump Temp(C)/Alm  Gain (dB)/Alm  Out Pwr(dBm)/Alm  In Pwr(dBm)/Alm
-----
EgrAmp  +33.6              22.00           1.35              -21.94
IngAmp  +33.5              20.30           2.80              -18.18
=====
    
```

**Output Example: show port <port-id> otu detail**

```

A:ALA-49>config>port# show port 3/2/1 otu detail
=====
OTU Interface
    
```

```

=====
OTU Status      : Enabled          FEC Mode      : enhanced
                  Data Rate      : 11.049 Gb/s
Cfg Alarms      : loc los lof lom otu-ber-sf otu-bdi fec-sf
Alarm Status    :
SF/SD Method    : FEC              SF Threshold   : 1E-5
                  SD Threshold   : 1E-7

SM-TTI Tx (auto) : ALA-49:3/2/1/C17
SM-TTI Rx       : (Not Specified)
=====
OTU Statistics
=====
Statistics                               Count
-----
FEC Corrected 0s                          0
FEC Corrected 1s                          0
FEC Unrectable Sub-rows                   0
FEC SES                                    0
SM BIP8                                    0
SM BEI                                    0
SM SES                                    0
PM BIP8                                    0
PM BEI                                    0
PM SES                                    0
=====
    
```

**Output Example: show port <port-id> port-scheduler statistics**

```

*A:PE1# show port 5/1/5 port-scheduler statistics
=====
Port 5/1/5 Port Scheduler
=====
Policy-Name      : esp1
Description      : (Not Specified)
Last Cleared Time : 11/16/2018 15:30:10
Forwarded:      Packets      Octets
                211912      27124736
Dropped* :      853335      109226880
-----
Port Scheduler per Level Queueing Statistics
Packets      Octets
Level : 8
Forwarded:    0          0
Dropped* :    0          0
Level : 7
Forwarded:    0          0
Dropped* :    0          0
Level : 6
Forwarded:    0          0
Dropped* :    0          0
Level : 5
Forwarded:    0          0
Dropped* :    0          0
Level : 4
Forwarded:    0          0
Dropped* :    0          0
Level : 3
Forwarded:    0          0
Dropped* :    0          0
Level : 2
Forwarded:    84784      10852352
Dropped* :    270297      34598016
    
```

```

Level : 1
Forwarded:          127128          16272384
Dropped* :          583038          74628864
-----
* indicates that the policer drop statistics are not included if HQoS policers
are managed by the scheduler.
=====
  
```

**Output Example: show port <port-id> port-queues queue <queue-id>**

```

# show port port-queues queue-depth queue 5
=====
Queue Depth Information (Port-based Network Egress)
=====
-----
Name                : Queue: 5 Port=1/1/1
MBS                 : Def
Violation Threshold Percnt: xx.xx
Violation Total Count   : xxx
Violation Last Seen    : Thu Mar 26 12:39:33 PDT 2020
-----
Queue Depths (percentage)
-----
0%-10% 11%-20% 21%-30% 31%-40% 41%-50% 51%-60% 61%-70% 71%-80% 81%-90% 91%-100%
-----
100.00 0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
-----
Average Elapsed Time      : 0d 00:11:11
Wghtd Avg Queue Poll Interval : 100 ms
Wghtd Avg HiWtrMark Poll Interval: 1000 ms
=====
  
```

**Output Example: show port <port-id> queue-group ingress**

```

*A:PE# show port 5/1/1 queue-group ingress
=====
Ethernet Port 5/1/1 Access Ingress Queue-Group
=====
Group Name       : qg1
Description      : (Not Specified)
Sched Policy     : None           Acct Pol       : None
Collect Stats    : disabled

Queues
-----
Ing. QGroup      : qg1           Queue-Id       : 1 (Unicast) (Priority)
Description      : (Not Specified)
Admin PIR        : max*          Admin CIR       : 0*
PIR Rule         : closest*      CIR Rule        : closest*
Admin FIR        : 0*            FIR Rule        : closest*
CBS              : def*          MBS             : def*
Monitor Depth    : not-applicable
Low Drop Tail    : def*

* means the value is inherited
=====
*A:PE#

*A:PE# show port 5/1/1 queue-group egress
=====
Ethernet port 5/1/1 Access Egress queue-group
  
```



```
=====
Group Name      : qg1           Instance-Id   : 1
Description     : (Not Specified)
Sched Policy    : None         Acct Pol      : None
Collect Stats   : disabled     Agg. Limit    : max
Limit Unused BW : Disabled
Frame Based Acc : Disabled
HS Turbo Queues : Disabled

Queues
-----
Queue-Group     : qg1           Instance-Id   : 1      Queue-Id    : 1
Description     : (Not Specified)
Admin PIR       : 50000*       Admin CIR     : 0*
PIR Rule        : closest*     CIR Rule      : closest*
CBS             : def*         MBS           : 1000 KB*
Weight          : not-applicable CIR Weight    : not-applicable
Monitor Depth   : not-applicable
HiPlus Drop Tail : def*       Hi Drop Tail  : def*
Low Drop Tail   : def*         Exceed Drop * : def*

* means the value is inherited
=====

Host-Matches
-----
No Host-Matches found

-----
Group Name      : policer-output-qu* Instance-Id   : 1
Description     : (Not Specified)
Sched Policy    : None         Acct Pol      : None
Collect Stats   : disabled     Agg. Limit    : max
Limit Unused BW : Disabled
Frame Based Acc : Disabled
HS Turbo Queues : Disabled

Queues
-----
Queue-Group     : policer-output-qu* Instance-Id   : 1      Queue-Id    : 1
Description     : Default egress policer output queues.
Admin PIR       : max*         Admin CIR     : 0*
PIR Rule        : closest*     CIR Rule      : closest*
CBS             : def*         MBS           : def*
Weight          : not-applicable CIR Weight    : not-applicable
Monitor Depth   : not-applicable
HiPlus Drop Tail : def*       Hi Drop Tail  : def*
Low Drop Tail   : def*         Exceed Drop * : def*

Queue-Group     : policer-output-qu* Instance-Id   : 1      Queue-Id    : 2
Description     : Default egress policer output queues.
Admin PIR       : max*         Admin CIR     : 0*
PIR Rule        : closest*     CIR Rule      : closest*
CBS             : def*         MBS           : def*
Weight          : not-applicable CIR Weight    : not-applicable
Monitor Depth   : not-applicable
HiPlus Drop Tail : def*       Hi Drop Tail  : def*
Low Drop Tail   : def*         Exceed Drop * : def*

* means the value is inherited
=====

Host-Matches
-----
No Host-Matches found
```

```

=====
* indicates that the corresponding row element may have been truncated.
*A:PE#

*A:PE# show port 5/1/1 queue-group summary
=====
Port queue-group summary
=====
Access-egress queue groups:
-----
qg1
policer-output-queues
Total number of access-egress queue groups : 2

Network-egress queue groups:
-----
Total number of network-egress queue groups : 0

Access-ingress queue groups:
-----
qg1
Total number of access-ingress queue groups : 1
=====
*A:PE#
    
```

**Output Example: show port <port-id> sonet path detail**

```

A:ALA-48# show port 1/2/1.sts192 detail
=====
WAN Interface Sublayer Path Info
=====
Oper Status      : up
Signal Label     : 0x1a          Rx Signal Label      : 0x1a
Trace String     : Nokia 7750 SR
Rx Trace Str(Hex) : 89 00 00 00 00 00 00 00 00 00 00 00 00 00
Cfg Alarm        : pais plop prdi pplm prei puneq plcd
Alarm Status     :

=====
Sonet Path
=====
                                Far End
-----
ES-P           1                0
SES-P          1                0
UAS-P          0                0
CV-P           10               0
=====
Transmit:
LOP-P          :                0
Fifo Error     :                96
Max Packet Error :              0
Min Packet Error :              0
LLP Packet Error :              0
FIFO Underflow Error :          0

Receive:
LOP-P          :                0
AIS-P          :                1
RDI-P          :                0
    
```

```

PLM-P           :           0
LCD-P           :           0
Unequipped      :           0
Remote Error    :           6
Parity Error     :          10
Fifo Error      :           0
Max Pkt Error   :           0
Min Pkt Error   :           0
FCS Error       :           0
Packet Abort Error :         0
Addr Ctrl Invalid :         0
=====
Port Statistics
=====
Input
Output
-----
Unicast Packets          369758853
5312
Multicast Packets        0
0
Broadcast Packets       0
0
Discards                 0
0
Unknown Proto Discards  0
=====
A:ALA-48#
    
```

**Output Example: show port <port-id> (Showing Channelized Ports)**

```

A:ALA-7# show port 7/1/1.ds0grp-1.1
=====
TDM DS0 Chan Group
=====
Description       : DS3
Interface         : 7/1/1.ds0grp-1.1
TimeSlots         : 1
Speed             : 64          CRC           : 16
Admin Status      : up          Oper status    : down
Last State Change : 2007/04/11 01:14:37  Chan-Grp IfIndex : 656441433

Configured mode   : access      Encap Type     : bcp-null
Admin MTU         : 1522        Oper MTU       : 1522
Physical Link     : No
=====
Port Statistics
=====
                               Input           Output
-----
Unicast Packets          0             0
Multicast Packets        0             0
Broadcast Packets        0             0
Discards                 0             0
Unknown Proto Discards   0
=====
A:ALA-7#

A:ALA-48# show port 3/1/3.e3
=====
TDM Interface
=====
    
```

```

Description      : E3
Interface       : 3/1/3.e3
Type            : e3
Admin Status    : up
Physical Link   : No
Last State Change : 04/11/2007 06:54:28
Framing         : g751
Oper status    : down
Clock Source    : loop-timed
Port IfIndex    : 589398019

Configured mode : access
Admin MTU       : 1518
CRC             : 16
Idle Cycle Flags : flags
FEAC Loop Respond : Disabled
BERT Pattern    : none
Encap Type      : bcp-null
Oper MTU       : 1518
Channelized    : none
Loopback       : none
In FEAC Loop   : No
BERT Duration  : N/A
=====
A:ALA-48#
    
```

**Output Example: show port <port-id> [statistics [egress-aggregate]] [detail]**

The output displays the aggregate egress queue statistics for ports configured with monitor-agg-egress-queue-stats which have non-zero counters. This can be shown for a single port, or all ports on an MDA or card. When the detail parameter is added, the output includes those ports with counters that are all zero.

```

*A:PE# show port 2 statistics egress-aggregate detail
=====
Port 2/1/1 Egress Aggregate Statistics on Slot 2
=====
              Forwarded              Dropped              Total
-----
PacketsIn           303                0                303
PacketsOut           0                0                0
OctetsIn            25996               0            25996
OctetsOut            0                0                0
=====

Port 2/1/2 Egress Aggregate Statistics on Slot 2
=====
              Forwarded              Dropped              Total
-----
PacketsIn           140                0                140
PacketsOut           0                0                0
OctetsIn            9598               0            9598
OctetsOut            0                0                0
=====
    
```

**Output Example: show port <port-id> vport <vport-name>**

```

*A:Dut-A# show port 1/1/2 vport "vp1"
=====
Ethernet port 1/1/2 Access Egress vport
=====
VPort Name      : vp1
Description     : (Not Specified)
Sched Policy    : psp

Host-Matches
-----
Dest: dslam1
-----
=====
*A:Dut-A#
    
```

```
*A:Dut-A# show port 1/1/2 vport "vp1" associations
=====
Ethernet port 1/1/2 Access Egress vport
=====
-----
VPort "vp1"
-----
svc-id : 1
sap   : 1/1/2:1
subscr: s1
ip    : 10.1.1.2
mac   : 00:00:00:00:00:01 pppoe-sid: N/A
=====
*A:Dut-A

*A:Dut-A# show port 1/1/1 vport "abc" monitor-threshold
=====
Port 1/1/1 Vport "abc" Monitor Threshold Info
=====
Attribute                               Exceed Count Config Rate   Threshold Prcnt
-----
Agg-Eps                                0                212                32
Lvl-1                                   0               12323               89
Lvl-2                                   0               32132               32
Lvl-5                                   0                2323                4
Grp-01234567890123458746513513355656 0                2121                12
-----
Start Time   : 01/07/2015 16:53:16   End Time      : 01/07/2015 16:53:36
Total Samples :
=====
*A:Dut-A
```

If the Vport name is omitted, statistics for all Vports are displayed (bulk read). The statistics are displayed only for the levels, groups, and agg-eps for which the monitor-threshold is enabled. The output information filtering per level, group, or agg-eps is not embedded in the show commands natively. Instead, the output can be filtered with the match extensions for the show command. For example, **show port 1/1/1 vport test monitor-threshold | match Lvl-1**.

```
*A:sne# show port 1/1/4 vport statistics
=====
Port 1/1/4 Access Egress vport
=====
VPort Name      : vp1
Description     : (Not Specified)
Sched Policy    : portschedpoll
Rate Limit      : Max
Rate Modify     : disabled
Modify delta    : 0
Vport Queueing Statistics

Last Cleared Time : N/A

Forwarded:      Packets      Octets
Dropped :      0            0
-----
Vport per Level Queueing Statistics
Level : 8
Forwarded:      Packets      Octets
Dropped :      0            0
```

```

Level : 7
Forwarded:          0          0
Dropped  :          0          0
Level : 6
Forwarded:          0          0
Dropped  :          0          0
Level : 5
Forwarded:          0          0
Dropped  :          0          0
Level : 4
Forwarded:          0          0
Dropped  :          0          0
Level : 3
Forwarded:          0          0
Dropped  :          0          0
Level : 2
Forwarded:          0          0
Dropped  :          0          0
Level : 1
Forwarded:          0          0
Dropped  :          0          0

Host-Matches
-----
Dest: dslam1
=====
*A:sne#
    
```

**Output Example: show port**

```

*A:cses-V22# show port
=====
Ports on Slot 1
=====
Port      Admin Link Port  Cfg  Oper  LAG/  Port  Port  Port  C/QS/S/XFP/
Id        State  State State  MTU  MTU  Bndl  Mode  Encp  Type  MDIMDX
-----
1/1/1    Down  Yes  Up     8704 8704  - netw null xcme  GIGE-LX 10KM
1/1/2    Up    Yes  Up     1514 1514  - accs null xcme  GIGE-LX 10KM
1/1/3    Up    Yes  Up     1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/4    Up    Yes  Up     1514 1514  - accs null xcme  GIGE-LX 10KM
1/1/5    Up    Yes  Up     1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/6    Up    Yes  Up     1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/7    Up    Yes  Up     1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/8    Up    Yes  Up     8704 8704  - hybr dotq xcme  GIGE-LX 10KM
1/1/9    Up    Yes  Up     1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/10   Down  Yes  Down   8704 8704  - netw null xcme  GIGE-LX 10KM
    
```

```

A:admin@mci(right-b4)# show port
=====
Ports on Slot 1
=====
Port      Admin Link Port  Cfg  Oper  LAG/  Port  Port  Port  C/QS/S/XFP/
Id        State  State State  MTU  MTU  Bndl  Mode  Encp  Type  MDIMDX
-----
1/1/m1/1  Link Up                                anchor  100G
1/1/c1    Up    Link Up                                conn   100GBASE-LR4*
1/1/c1/1  Up    No   Down   9212 9212  - netw null xgige
1/1/c1/2  Down  No   Down   9212 9212  - netw null xgige
1/1/c1/3  Down  No   Down   9212 9212  - netw null xgige
...
=====
    
```

Ports on Port Cross Connect 1

Port Id	Admin State	Link State	Port State	Cfg MTU	Oper MTU	LAG/Bndl Mode	Port Encp	Port Type	Port Type	C/QS/S/XFP/MDIMDX
pxc-1.a	Up	Yes	Link Up	1574	1574	-	hybr dotq	xcgige		
pxc-1.b	Up	Yes	Link Up	1574	1574	-	hybr dotq	xcgige		
pxc-2.a	Up	Yes	Link Up	1574	1574	-	hybr dotq	xcgige		
pxc-2.b	Up	Yes	Link Up	1574	1574	-	hybr dotq	xcgige		

**Output Example: show port detail for a satellite uplink port**

show port esat-1/1/c5/u1 detail

Ethernet Interface

```

Description          : 400-Gig Ethernet
Interface            : esat-1/1/c5/u1          Oper Speed       : 400 Gbps
Link-level           : Ethernet               Config Speed     : N/A
Admin State          : up                     Oper Duplex      : full
Oper State           : up
Config Duplex        : N/A
Physical Link        : Yes                    MTU               : 9212
Single Fiber Mode    : No                     Min Frame Length : 64 Bytes
IfIndex              : 1140966017             Hold time up     : 0 seconds
Last State Change    : 09/30/2023 07:42:28    Hold time down   : 0 seconds
Hold Time Down Rmng : 0 cs                    Hold Time Up Rmng: 0 cs
Last Cleared Time    : N/A
Phys State Chng Cnt : 55
RS-FEC Config Mode  : None
RS-FEC Oper Mode    : cl119
Far-end port ID     : 1/x1/1/c2/1

Configured Mode      : access                  Encap Type       : 802.1q
Dot1Q Ethertype     : 0x8100                  QinQ Ethertype   : 0x8100
PBB Ethertype       : 0x88e7
Ing. Pool % Rate    : 100                      Egr. Pool % Rate : 100
Net. Egr. Queue Pol: n/a
Egr. Sched. Pol     : n/a
HwAggShaper Sch Pol: n/a
Monitor Port Sched  : Disabled
Monitor Agg Q Stats: Disabled
Monitor Oper Group  : none
Monitor HwAggShap *: Disabled
Auto-negotiate      : N/A                      MDI/MDX          : N/A
Oper Phy-tx-clock   : not-applicable
Accounting Policy   : None                     Collect-stats    : Disabled
Acct Plcy Eth Phys : None                     Collect Eth Phys : Disabled
Egress Rate         : Default                  Ingress Rate     : Default
Oper Egress Rate    : Unrestricted
Load-balance-algo  : Default                  LACP Tunnel     : Disabled
Access Bandwidth    : Not-Applicable          Booking Factor   : 100
Access Available BW : 0
Access Booked BW    : 0
Sflow               : Disabled
Discard Rx Pause    : Disabled
Tx Pause Frames     : Enabled
Down-when-looped   : Disabled
Loop Detected       : False
Use Broadcast Addr  : False
Sync. Status Msg.  : Disabled
Tx DUS/DNU         : Disabled
Rx Quality Level   : N/A
Tx Quality Level    : N/A
    
```

```
SSM Code Type      : sdh                ESMC Tunnel       : Disabled
CRC Mon SD Thresh  : 6*10E-7            CRC Mon Window    : 10 seconds
CRC Mon SF Thresh  : 4*10E-5

EFM OAM           : Disabled            EFM OAM Link Mon : Disabled
Ignr EFM OAM State : False

Configured Address : e4:41:64:7b:42:27
Hardware Address   : e4:41:64:7b:42:27
Cfg Alarm          : remote local
```

-----  
 Ethernet Bandwidth Notification Message Information  
 -----

```
ETH-BN Egr Rate Changes: Disabled
ETH-BN Rate (kbps)      : None
-----
```

=====  
 \* indicates that the corresponding row element may have been truncated.  
 =====

Traffic Statistics  
 =====

	Input	Output
Octets	12287868837323	12276482441319
Packets	29574258275	29537765516
Errors	0	0

-----  
 Ethernet Statistics  
 =====

Broadcast Pkts :	1235438977	Drop Events :	0
Multicast Pkts :	3667667411	CRC/Align Errors :	0
Undersize Pkts :	0	Fragments :	0
Oversize Pkts :	0	Jabbers :	0
Collisions :	0		

```
Octets      : 24564351278642
Packets     : 59112023791
Packets of 64 Octets : 19931
Packets of 65 to 127 Octets : 49484559475
Packets of 128 to 255 Octets : 3035408192
Packets of 256 to 511 Octets : 1661149068
Packets of 512 to 1023 Octets : 1094762996
Packets of 1024 to 1518 Octets : 668024442
Packets of 1519 or more Octets : 3168099687
=====
```

-----  
 Port Statistics  
 =====

	Input	Output
Unicast Packets	27115598668	27093318735
Multicast Packets	1838494691	1829172720
Broadcast Packets	620164916	615274061
Discards	0	0
Unknown Proto Discards	0	



Ethernet-like Medium Statistics

```

=====
Alignment Errors :                0  Sngl Collisions :                0
FCS Errors       :                0  Mult Collisions :                0
SQE Test Errors  :                0  Late Collisions :                0
CSE              :                0  Excess Collisns :                0
Too long Frames  :                0  Int MAC Tx Errs :                0
Symbol Errors    :                0  Int MAC Rx Errs :                0
In Pause Frames  :                0  Out Pause Frames :                0
=====
    
```

Sat Port Queue Statistics

```

-----
Sat Egress Queue 1      Packets      Octets
Fwd Stats      :      8257120707      4112066787804
Drop Stats     :                0
Sat Egress Queue 2      Packets      Octets
Fwd Stats      :      317138867      21905134529
Drop Stats     :                0
Sat Egress Queue 3      Packets      Octets
Fwd Stats      :      312021096      22007488810
Drop Stats     :                0
Sat Egress Queue 4      Packets      Octets
Fwd Stats      :      14673309206     998842948449
Drop Stats     :                0
Sat Egress Queue 5      Packets      Octets
Fwd Stats      :                0
Drop Stats     :                0
Sat Egress Queue 6      Packets      Octets
Fwd Stats      :                0
Drop Stats     :                0
Sat Egress Queue 7      Packets      Octets
Fwd Stats      :                0
Drop Stats     :                0
Sat Egress Queue 8      Packets      Octets
Fwd Stats      :                0
Drop Stats     :                0
=====
    
```

**Output Example: show port detail for a satellite client port**

show port esat-1/1/c2/4 detail

Ethernet Interface

```

=====
Description      : 25-Gig Ethernet
Interface        : esat-1/1/c2/4      Oper Speed       : 25 Gbps
Link-level       : Ethernet           Config Speed     : N/A
Admin State      : down              Oper Duplex      : full
Oper State       : down
Config Duplex    : N/A
Physical Link    : No                 MTU              : 9208
Single Fiber Mode : No                 Min Frame Length : 64 Bytes
IfIndex          : 1140932868         Hold time up     : 0 seconds
Last State Change : 09/30/2023 07:41:51         Hold time down   : 0 seconds
Hold Time Down Rmng: 0 cs             Hold Time Up Rmng: 0 cs
Last Cleared Time : N/A
Phys State Chng Cnt: 0
    
```

```
RS-FEC Config Mode : None
RS-FEC Oper Mode   : None

Configured Mode    : network
Dot1Q Ethertype    : 0x8100
PBB Ethertype      : 0x88e7
Ing. Pool % Rate   : 100
Net. Egr. Queue Pol : default
Egr. Sched. Pol    : n/a
DCPU Prot Policy   : _default-port-policy
Oper DCPU Prot Plcy : _default-port-policy
HwAggShaper Sch Pol : n/a
Monitor Port Sched : Disabled
Monitor Agg Q Stats : Disabled
Monitor Oper Group : none
Monitor HwAggShap * : Disabled
Auto-negotiate     : N/A
Oper Phy-tx-clock  : not-applicable
Accounting Policy  : None
Acct Plcy Eth Phys : None
Egress Rate        : Default
Oper Egress Rate   : Unrestricted
Load-balance-algo  : Default
Access Bandwidth   : Not-Applicable
Access Available BW : 0
Access Booked BW   : 0
Sflow              : Disabled
Discard Rx Pause   : Disabled
Tx Pause Frames    : Enabled
Down-when-looped   : Disabled
Loop Detected      : False
Use Broadcast Addr : False

Encap Type         : null
QinQ Ethertype     : 0x8100
Egr. Pool % Rate   : 100
MDI/MDX            : N/A
Collect-stats      : Disabled
Collect Eth Phys   : Disabled
Ingress Rate       : Default
LACP Tunnel        : Disabled
Booking Factor     : 100

Sync. Status Msg.  : Disabled
Tx DUS/DNU         : Disabled
SSM Code Type      : sdh
Rx Quality Level   : N/A
Tx Quality Level   : N/A
ESMC Tunnel        : Disabled

PTP TS Capability  :

CRC Mon SD Thresh  : Disabled
CRC Mon SF Thresh  : Disabled
CRC Mon Window     : 10 seconds

EFM OAM            : Disabled
Ignr EFM OAM State : False
EFM OAM Link Mon   : Disabled

Configured Address : e4:41:64:7b:42:12
Hardware Address   : e4:41:64:7b:42:12
Cfg Alarm          : remote local
Alarm Status       : local
Reported Alarms    : local

-----
Ethernet Bandwidth Notification Message Information
-----
ETH-BN Egr Rate Changes: Disabled
ETH-BN Rate (kbps)      : None
-----

=====
* indicates that the corresponding row element may have been truncated.
=====

Traffic Statistics
=====
                                Input                Output
=====
```

```
-----
Octets                               735804410152          735804410344
Packets                             5454727392           5454727395
Errors                               0                    0
-----
```

```
=====
Ethernet Statistics
=====
```

```
Broadcast Pckts :                3 Drop Events      :                0
Multicast Pckts :                0 CRC/Align Errors :                0
Undersize Pckts :                0 Fragments        :                0
Oversize Pckts  :                0 Jabbers           :                0
Collisions      :                0
```

```
Octets      :          1471608820496
Packets     :          10909454787
Packets of 64 Octets :          2333235065
Packets of 65 to 127 Octets :          8495213712
Packets of 128 to 255 Octets :                0
Packets of 256 to 511 Octets :                0
Packets of 512 to 1023 Octets :                0
Packets of 1024 to 1518 Octets :                0
Packets of 1519 or more Octets :          81006010
=====
```

```
=====
Port Statistics
=====
```

```
-----
                                Input          Output
-----
Unicast Packets                5454727392          5454727392
Multicast Packets                0                  0
Broadcast Packets                0                  3
Discards                        0                  0
Unknown Proto Discards          0
=====
```

```
=====
Ethernet-like Medium Statistics
=====
```

```
Alignment Errors :                0 Sngl Collisions :                0
FCS Errors       :                0 Mult Collisions :                0
SQE Test Errors  :                0 Late Collisions :                0
CSE              :                0 Excess Collisns :                0
Too long Frames  :                0 Int MAC Tx Errs :                0
Symbol Errors    :                0 Int MAC Rx Errs :                0
In Pause Frames  :                0 Out Pause Frames :                0
=====
```

```
=====
Ingress Port Forwarding Engine Drop Reason Statistics
=====
```

```
IPv4 Header Error                0
IPv4 Invalid Address              0
IPv6 Header Error                0
IPv6 Invalid Address              0
IP Route Blackholed               0
ACL Filter Discards               0
Unicast RPF Check Failed           0
BFD Spoof Check Failed            0
Unicast MAC Destination Address Mismatch 0
Multicast MAC With Unicast Dest IP 0
=====
```

```
Unknown MAC Destination Address Discarded in VPLS      0
L2 Service MTU Exceeded                               0
Needs ICMP                                             0
=====
```

```
=====
Sat Port Queue Statistics
=====
```

```
-----
Sat Egress Queue 1      Packets      Octets
Fwd Stats      :      5454727392      757623319720
Drop Stats     :              0              0
Sat Egress Queue 2      Packets      Octets
Fwd Stats      :              0              0
Drop Stats     :              0              0
Sat Egress Queue 3      Packets      Octets
Fwd Stats      :              0              0
Drop Stats     :              0              0
Sat Egress Queue 4      Packets      Octets
Fwd Stats      :              0              0
Drop Stats     :              0              0
Sat Egress Queue 5      Packets      Octets
Fwd Stats      :              0              0
Drop Stats     :              0              0
Sat Egress Queue 6      Packets      Octets
Fwd Stats      :              0              0
Drop Stats     :              0              0
Sat Egress Queue 7      Packets      Octets
Fwd Stats      :              0              0
Drop Stats     :              0              0
Sat Egress Queue 8      Packets      Octets
Fwd Stats      :              3              204
Drop Stats     :              0              0
=====
```

```
=====
Queue Statistics
=====
```

```
-----
Ingress Queue 1      Packets      Octets
  In Profile forwarded :      0              0
  In Profile dropped   :      0              0
  Out Profile forwarded :      0              0
  Out Profile dropped  :      0              0
Ingress Queue 2      Packets      Octets
  In Profile forwarded :      0              0
  In Profile dropped   :      0              0
  Out Profile forwarded :      0              0
  Out Profile dropped  :      0              0
Ingress Queue 3      Packets      Octets
  In Profile forwarded :      0              0
  In Profile dropped   :      0              0
  Out Profile forwarded :      0              0
  Out Profile dropped  :      0              0
Ingress Queue 4      Packets      Octets
  In Profile forwarded :      0              0
  In Profile dropped   :      0              0
  Out Profile forwarded :      0              0
  Out Profile dropped  :      0              0
Ingress Queue 5      Packets      Octets
  In Profile forwarded :      0              0
  In Profile dropped   :      0              0
```

Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 6	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 7	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 8	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 9	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 10	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 11	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 12	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 13	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 14	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 15	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Ingress Queue 16	Packets	Octets
In Profile forwarded :	0	0
In Profile dropped :	0	0
Out Profile forwarded :	0	0
Out Profile dropped :	0	0
Egress Queue 1	Packets	Octets
In/Inplus Prof fwded :	0	0
In/Inplus Prof dropped:	0	0
Out/Exc Prof fwded :	0	0
Out/Exc Prof dropped :	0	0
Egress Queue 2	Packets	Octets

```

In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
Egress Queue 3 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
Egress Queue 4 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
Egress Queue 5 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
Egress Queue 6 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
Egress Queue 7 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
Egress Queue 8 Packets Octets
In/Inplus Prof fwded : 0 0
In/Inplus Prof dropped: 0 0
Out/Exc Prof fwded : 0 0
Out/Exc Prof dropped : 0 0
=====
    
```

**Output Example: show port statistics aggregate-queue**

```

=====
Port Statistics on Slot 1
=====
Port-id          Ingress Packets Fwd  Ingress Octets Fwd
                  Ingress Packets Drop  Ingress Octets Drop
                  Egress Packets Fwd   Egress Octets Fwd
                  Egress Packets Drop   Egress Octets Drop
-----
pxcl.a           4654649             94523288
                  22544               99852
                  98652214            65889554
                  55451               22144
=====
    
```

Table 386: Output Fields: `show port <port-id>` describes the output fields for the `show port <port-id>` command.

Table 386: Output Fields: `show port <port-id>`

Label	Description
50GHz Ch Min/Max	The 50 GHz channel minimum and maximum

Label	Description
100GHz Ch Min/Max	The 100 GHz channel minimum and maximum
Acct Pol	The accounting policy for the egress queue-group
ACL Filter Discards	The packet was dropped by a filter (ACL) on the line card (such as IP or MAC filter). Packets dropped by CPM filters or ESM anti-spoof filters do not increment this counter.
Active Pre-Shared Key CKN	The active PSK CAK name
Active Pre-Shared Key Index	The active pre-shared key index: 1 to 2 (default 1)
Adapter Type	The type of adapter module
Addr Ctrl Invalid	The number of invalid address control received
Address	The IP address associated with the index
Admin CIR	The administrative Committed Information Rate (CIR) parameters for the queue. The CIR defines the rate at which the system prioritizes the queue over other queues competing for the same bandwidth.
Admin FIR	The admin queue FIR rate
Admin PIR	The administrative Peak Information Rate (PIR) parameters for the queue. The PIR defines the maximum rate that the queue can transmit packets through the switch fabric out an egress interface.
Admin State	Up — The entity is administratively up Down — The entity is administratively down
Agg. Limit	The agg-rate adaptation rule setting
AIS	The number of AIS cells transmitted and received on this connection for both end to end and segment
AIS-P	The number of AIS-P packets received
Alarm Status	The bits used to indicate alarms: loc — A loss of clock which causes the operational state of the port to be downed lais — Line alarm indication signal errors lrdi — Line remote defect indication errors. LRDIs are caused by remote LOF, LOC, and LOS ss1f — Section synchronization failure as reported by the S1 byte sb1err — Section B1 errors lb2erSd — Line signal degradation BER errors

Label	Description
	lb2erSf — Line signal failure BER errors slof — Section loss of frame errors slos — Section loss of signal errors stxptr — Section synchronization error on the transmit side. Indicates if there is a positive or negative justification count per channel srxptr — Section synchronization error on the receive side. Indicates if there is a positive or negative justification count per SONET path lrei — Line error condition raised by the remote as a result of B1 errors received from this node
Alignment Errors	The total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, but had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets
Altitude (m MSL)	The altitude of the GNSS antenna above mean sea level, in meters
Amplifier Gain (dB)	The amplifier gain high and low warning alarms
Amplifier Input Power (dBm)	The amplifier input power high and low warning alarms
Amplifier Output Power (dBm)	The amplifier output power high and low warning alarms
AN	The AN for identifying the receiving SA
Ant. Cable Delay	The amount of time, in nanoseconds, compensated for signal delay because of cable length Refer to the cable manufacturer data to determine accurate signal delay statistics for the type and length of cable used
Antenna status	ok: valid antenna connection under-current: open condition. The port remains operationally up in the event that any GNSS splitters used do not provide a load. over-current: short circuit, or maximum power limits for the receiver have been exceeded no-bias voltage: antenna power disabled
Assigned ports	Specifies all ports that contain this CA
authentication method	The 802.1x session authentication method
Authenticator PAE state	The 802.1x port authenticator PAE state



Label	Description
Auto-negotiate	True — The link attempts to automatically negotiate the link speed and duplex parameters False — The duplex and speed values are used for the link
Average Elapsed Time	The average elapsed time
Backend state	The 802.1x port backend state
Bad Tag Packets	The number of received packets discarded with an invalid SecTAG or a zero value Packet Number (PN) or an invalid Integrity Check Value (ICV)
BFD Spoof Check Failed	The received BFD packet either failed the TTL check (single hop BFD TTL should be 255) or failed the source IP address lookup of known sessions. This counter may increment when BFD sessions are first configured since one side may start sending before the other is completely programmed and ready.
Breakout	The connector breakout configured for the port
Broadcast Packets Input/Output	The number of packets, delivered by this sub-layer to a higher (sub-) layer, which were addressed to a broadcast address at this sub-layer. The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses.
Broadcast Packets	Input — The number of input broadcast packets Output — The number of output broadcast packets
Broadcast Pckts	The number of packets, delivered by this sub-layer to a higher (sub-) layer, which were addressed to a broadcast address at this sub-layer. The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses.
CA name/ca-name	The CA name assigned to the port
Cast Type	The connection topology type
CBS	The CBS value defining the reserved size for the queue
Cells	The number of input and output cells HEC discarded cells are not included in the input cell numbers
Cfg Alarm	The alarms that are reported when raised or cleared. Alarms that are not in this list are not reported when they are raised or cleared but appear in the Alarm Status. pais — Path alarm indication signal errors

Label	Description
	<p>plop — Path loss of pointer (per tributary) errors</p> <p>prdi — Path remote defect indication errors</p> <p>pb3err — Path B3 errors</p> <p>pplm — Path payload mismatch. As a result, the path can be operationally downed</p> <p>prei — Path error condition raised by the remote as a result of B3 errors received from this node</p> <p>puneq — Unequipped path errors.</p> <p>plcd — Path loss of codegroup delineation error. It is applicable only when the value of <code>tmnxPortEtherXGigMode</code> is set to 'wan'.</p>
Cfg MTU	The configured MTU
Cfg Rx Channel	The configured DWDM ITU channel at which the coherent optical module is expected to operate
Cfg Rx LOS Thresh	The configured LOS threshold of the average input power
Cfg Tx Pwr Maximum	The maximum power setting supported by the transceiver (only displayed if the equipped optical module supports configurable transmit power)
Cfg Tx Pwr Minimum	The minimum power setting supported by the transceiver (only displayed if the equipped optical module supports configurable transmit power)
Cfg Tx Target power	The manually-configured average target output power
Chan-Grp IfIndex	The channel group's interface index number which reflects its initialization sequence
Cipher Suite	The cipher suite used for encrypting the SAK: <code>gcm-aes-128</code> , <code>gcm-aes-256</code> , <code>gcm-aes-xpn-128</code> , <code>gcm-aes-xpn-256</code>
CIR Rule	<p>min — The operational CIR for the queue is equal to or greater than the administrative rate specified using the rate command except where the derived operational CIR is greater than the operational PIR. If the derived operational CIR is greater than the derived operational PIR, the operational CIR will be made equal to the operational PIR.</p> <p>max — The operational CIR for the queue is equal to or less than the administrative rate specified using the rate command.</p> <p>closest — The operational CIR for the queue is the rate closest to the rate specified using the rate command without exceeding the operational CIR.</p>
CIR Weight	The weight the queue or scheduler uses at the within-CIR port priority level
Clear Tag Mode	<p>In the case of VLAN-tagged traffic, if the traffic is crossing a network, one or two VLAN tags can be transmitted in clear text so that this traffic can receive preferential treatment over the network based on 802.1 q-tag or p-bits.</p> <p>Values: <code>single-tag</code>, <code>dual-tag</code></p>

Label	Description
Coherent Optical Module	Information for the coherent optical module
Coherent Optical Port Statistics	Statistics for the coherent optical port For Coherent CFP, the Rx Power field displays per-channel power.
Collect-stats Collect Stats	Enabled — The collection of accounting and statistical data for the network Ethernet port is enabled. When applying accounting policies the data by default will be collected in the appropriate records and written to the designated billing file.  Disabled — Collection is disabled. Statistics are still accumulated by the IOM cards, however, the CPU will not obtain the results and write them to the billing file.
Collisions	The best estimate of the total number of collisions on this Ethernet segment
Config Duplex	Full — The link is set to full duplex mode Half — The link is set to half duplex mode
Config Revision	The configuration revision
Config Speed	The configured speed of the interface
Configured Address	The configured Ethernet MAC address
Configured Freq	The configured frequency for the transceiver
Configured Mode	network — The port is configured for transport network use access — The port is configured for service access
Configured Mode	network — The port is configured for transport network use access — The port is configured for service access. Channelized ports are always access ports
Configured VCs	The number of configured VCs
Connector Code	The vendor organizationally unique identifier field (OUI) contains the IEEE company identifier for the vendor
Constellation	The type of GNSS satellite navigation system used
CRC	The precision of the cyclic redundancy check. 16 — A 16-bit CRC calculation. 32 — A 32-bit CRC calculation. 32-bit CRC increases the error detection ability, but it also adds some performance overhead.
CRC Mon SD Thresh	The error rate (for CRC errors) at which to declare the Signal Degrade (SD) condition on an Ethernet interface. If the field displays Disabled, no error rate has been specified.

Label	Description
CRC Mon SF Thresh	The CRC error rate at which to declare the Signal Fail (SF) condition on an Ethernet interface. If the field displays Disabled, no error rate has been specified.
CRC Mon Window	The size of the sliding window, in seconds, over which the Ethernet frames are sampled to detect signal fail or signal degrade conditions.
CRC/Align Errors	The total number of packets received that had a length (excluding framing bits, but including FCS octets) of between 64 and 1518 octets, inclusive, but had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error).
CRC-10 Errors	The number of cells discarded on this VPL with CRC 10 errors
CRC-32 Errors	The number of valid AAL-5 SDUs and AAL-5 SDUs with CRC-32 errors received by the AAL-5 VCC
CSE	The number of times that the carrier sense condition was lost or never asserted when attempting to transmit a frame on a particular interface
CV-P	The number of Coding Violations
Current Freq	The current frequency
Current Penalties	The current accumulated penalties for port dampening
DAC Percent	The DAC percentage of the transceiver
Dampening State	The port dampening state: Disabled, Idle, or Active
Data Rate	The data rate at which the port is operating. When OTU is encapsulating 10-Gigabit Ethernet WAN, the data rate is 10.709 Gb/s, the G.709 standard OTU2 data rate. When OTU is encapsulating 10-Gigabit Ethernet LAN, the data rate is either 11.049 Gb/s or 11.096 Gb/s, depending on the otu2-lan-data-rate configuration parameter of the port's OTU parameters. These data rates (11.049 Gb/s and 11.096 Gb/s) are considered OTU2e data rates that are non-standard or over-clocked with respect to G.709, but have become widely used in optical networking to transport un-altered 10-Gigabit Ethernet LAN payloads.
DDM Events	Enabled — DDM events are enabled Disabled — DDM events are disabled
Decrypted Octets	The number of octets of plain text recovered from received packets that were integrity protected and encrypted
Delayed Packets	The number of received packets with the condition a PN lower than the lower bound of the replay protection on this SC
Description	A text description for the entity
Diag Capable	Indicates whether the transceiver is capable of performing diagnostics
Discards	Input — The number of discarded input packets

Label	Description
	Output — The number of discarded output packets
Discards Input/Output	The number of inbound packets chosen to be discarded to possibly free up buffer space
Disp Control Mode	The current operational mode of the tunable dispersion compensation module
DOIE Tx Disable	Enabled — Laser is enabled if an internal MAC transmit error is encountered Disabled — Laser is disabled if an internal MAC transmit error is encountered
Dot1Q Ethertype	The Ethertype expected when the port's encapsulation type is Dot1Q
Down On Int. Error	Enabled — Down on internal error feature is enabled Disabled — Down on internal error feature is disabled
Down-when-looped	The feature is enabled or disabled
Drop Count	The number of keepalive or LQR messages that were missed before the line was brought down
Dropped	The number of dropped packets and octets
Drop Events	The total number of events in which packets were dropped by the probe due to lack of resources. Note that this number is not necessarily the number of packets dropped; it is just the number of times this condition has been detected.
Dropped CLP	The number of times the CLP1 cells have been dropped. CLP1 cells have lower priority than CLP0 cells and are expected to be discarded first in times of congestion.
Dying Gasp	Indicates whether dying gasp is enabled or disabled
Dying Gasp on Reset	EFM OAM dying gasp messages on reset: true or false
eapol-destination-address	The destination MAC address used in the EAPoL packet for MACsec Key Agreement (MKA) PDUs
EgrAmp	The egress amplifier alarm information, including: <ul style="list-style-type: none"> <li>• temperature</li> <li>• gain</li> <li>• power out</li> <li>• power in</li> </ul>
Encryption Offset	The encryption offset configured on this node: 0, 30, 50.  In the case of IP traffic, the IP header can be transmitted in clear text so that the traffic is routed accordingly when crossing the network. A value of 30 is used for IPv4 and 50 for IPv6.

Label	Description
EFM OAM	Enabled — EFM OAM is enabled Disabled — EFM OAM is disabled
EFM OAM Link Mon	Enabled — Link monitoring functionality is enabled Disabled — Link monitoring functionality is disabled
Egr. Sched. Pol	The port scheduler policy or that the default policy default is in use
Egress CBR	The total CBR bandwidth consumed on this interface in the egress direction
Egress NRT-VBR	The total non-real-time variable bit rate (nrt-VBR) bandwidth consumed on this interface in the egress direction
Egress Octets	The egress octets on a per-port basis
Egress Octets Drop	The number of egress octets dropped
Egress Octets Fwd	The number of egress octets forwarded
Egress Packets	The egress packets on a per-port basis
Egress Packets Drop	The number of egress packets dropped
Egress Packets Fwd	The number of egress packets forwarded
Egress Rate	The maximum amount of egress bandwidth (in kilobits per second) that this Ethernet interface can generate
Egress RT-VBR	The total real-time variable bit rate (rt-VBR) bandwidth consumed on this interface in the egress direction
Egress UBR	The total unspecified bit rate (UBR) bandwidth consumed on this interface in the egress direction
Elev. Mask Angle	The configured elevation angle below which satellites are ignored. The default elevation mask angle is 10°. Five or more satellites must be in view of the GNSS receiver antenna at all times when the receiver is in the process of obtaining a position fix, and these satellites must be above the configured elevation mask angle.
Encap-match	Specifies which types of traffic MACsec is enabled for
Encap Type	Null — Ingress frames will not use any tags or labels to delineate a service dot1q — Ingress frames carry 802.1Q tags where each tag signifies a different service
Encap Value	The dot1q or qinq encapsulation value on the port for this IP interface
Encrypted Octets	The number of plain text octets that are integrity protected and encrypted on the transmitting SC

Label	Description
Encrypted Packets	The number of packets that are integrity protected and encrypted for this transmitting SA
Encrypted SA Packets	The number of packets that are integrity protected and encrypted for this SA
Encryption Offset	Specifies the encryption offset configured on this node: 0, 30, 50. In the case of IP traffic, the IP header can be transmitted in clear text so that the traffic is routed accordingly when crossing the network. A value of 30 will be used for IPv4 and 50 for IPv6.
Endpoint Type	The endpoint type
Errored Frame Enabled	Specifies whether errored frames are enabled
Errored Frame Event Notify	Specifies whether errored frame events notification is enabled
Errored Frame Period Enabled	Specifies whether an errored frame period is enabled
Errored Frame Period Event Notify	Specifies whether an errored frame period event notification is enabled
Errors Input/Output	For packet-oriented interfaces, the number of inbound packets that contained errors preventing them from being deliverable to a higher-layer protocol. For character-oriented or fixed-length interfaces, the number of inbound transmission units that contained errors preventing them from being deliverable to a higher-layer protocol.  For packet-oriented interfaces, the number of outbound packets that could not be transmitted because of errors. For character-oriented or fixed-length interfaces, the number of outbound transmission units that could not be transmitted because of errors.
ESMC Tunnel	Indicates whether ESMC frames are tunneled in Epipe or VPLS service
ES-P	The number of Errored Seconds
Exceed Drop	The queue depth beyond which exceed-profile packets are not accepted into the queue and are discarded
Excess Collisns	The number of frames for which transmission on a particular interface fails due to excessive collisions
Far End	The SONET path far end
FCS Errors	The number of frames received on a particular interface that are an integral number of octets in length but do not pass the FCS check
FEC Corrected 0s	The number of bits that were received as 0s but corrected to 1s

Label	Description
FEC Corrected 1s	The number of bits that were received as 1s but corrected to 0s
FEC Mode	Type of FEC (Forward Error Correction) in effect: g709, enhanced or disabled. When g709 is selected, the standard FEC method is used. When enhanced is selected, a proprietary FEC algorithm is used that extends optical reach in long haul applications. When disabled the bytes that are reserved for FEC in the OTU frame are transmitted as zeros and the FEC decoder is bypassed, but OTU framing is still in effect.
FEC SES	The number of severely Errored seconds were the number of uncorrectable sub-rows was greater than 15% of the maximum
FEC Uncorrectable Sub-Rows	The number of sub-rows that were not corrected because too many errors were detected
Fifo Error	The number of FIFO errors
Fine Tuning	Indicates whether the transceiver supports fine tuning for the frequency
FIR Rule	The queue FIR rule
Firmware Version	Firmware version of the GNSS receiver
FR Interface Status	The status of the Frame Relay interface as determined by the performance of the DLCMI. If no DLCMI is running, the Frame Relay interface stays in the running state indefinitely.
Forwarded	The number of forwarded packets and octets
FP Number	The number of the FP that manages this port
Fragments	The total number of packets received that were less than 64 octets in length (excluding framing bits but including FCS octets) and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error)
Frame Based Acc	Frame-based accounting for queues parented to the scheduling policy and for the schedulers within the scheduler policy
Grace Tx Enable	Specifies whether grace Tx is enabled
Grace Vendor OUI	The EFM OAM grace vendor Organizationally Unique Identifier (OUI)
Grp-<name> Group Name	The group name
Half Life	The time, in seconds, that must pass before penalties decay to one-half the initial amount
Hardware Address	The interface's hardware or system assigned MAC address at its protocol sub-layer



Label	Description
HEC Errors (Dropped)	The number of cells with uncorrectable HEC errors on this interface
HEC Errors (Fixed)	The number of fixed HEC errors on this interface
HiPlus Drop Tail	The queue depth beyond which inplus-profile packets are not accepted into the queue and are discarded
Hi Drop Tail	The queue depth beyond which in-profile packets are not accepted into the queue and are discarded
Hold Time	The EFM OAM hold-time
Hold time down	The link down dampening time in seconds. The <b>down</b> timer controls the dampening timer for link down transitions
Hold Time Down Rmng	The time remaining for a hold down timer. If the <b>hold</b> timer is not active, this displays zero.
Hold time up	The link up dampening time in seconds. The port link dampening timer value which reduces the number of link transitions reported to upper layer protocols.
Hold Time Up Rmng	The time remaining for a hold up timer. If the <b>hold</b> timer is not active, this displays zero.
HS Turbo Queues	HS turbo queues that allow the corresponding HSQ queue group queues for higher throughput
lflIndex	The interface's index number which reflects its initialization sequence
Ignore Efm State	The suppress port operational state changes due to EFM OAM: true or false
Ignr EFM OAM State	Enabled — Any failure in the protocol state machine does not impact the state of the port Disabled — The port state is affected by any existing EFM-OAM protocol fault condition
Index 1	Management IP information, one per type maximum (system IPv4, IPv6 system, oob, oob IPv6)
IngAmp	The ingress amplifier alarm information, including: <ul style="list-style-type: none"> <li>• temperature</li> <li>• gain</li> <li>• power out</li> <li>• power in</li> </ul>
In Packets	The number of echo-reply packets received
In Pause Frames	The number of In Pause frames

Label	Description
Ingress CBR	The total CBR bandwidth consumed on this interface in the ingress direction
Ingress NRT-VBR	The total non-real-time variable bit rate (nrt-VBR) bandwidth consumed on this interface in the ingress direction
Ingress Octets	The ingress octets on a per-port basis
Ingress Octets Drop	The number of ingress octets dropped
Ingress Octets Fwd	The number of ingress octets forwarded
Ingress Packets	The ingress packets on a per-port basis
Ingress Packets Drop	The number of ingress packets dropped
Ingress Packets Fwd	The number of ingress packets forwarded
Ingress Port Forwarding Engine Drop Reason Statistics	When any of the packet counters increments, it indicates that a packet was dropped in the ingress data path or extracted to the control plane for further processing. The detailed per-reason drop statistics are available per-port for Ethernet ports (local on the 7450 ESS, 7750 SR, 7950 XRS, or satellite client ports) and for PXC sub-ports. An aggregate forwarding engine drop counter (packet and byte) is available per-SAP.
Ing. QGroup	The ingress queue group name
Ingress Rate	The maximum amount of ingress bandwidth (in mb/s) that this Ethernet port can receive with the configured sub-rate using packet-based accounting
Ingress RT-VBR	The total real-time variable bit rate (rt-VBR) bandwidth consumed on this interface in the ingress direction
Ingress UBR	The total unspecified bit rate (UBR) bandwidth consumed on this interface in the ingress direction
Host-Matches	A string optionally used by subscriber management to map subscriber's and subscriber host's queued traffic to a specific egress port virtual port
Input/Output	When the collection of accounting and statistical data is enabled, then octet, packet, error, and utilization statistics are displayed
Instance-Id	The queue-group instance ID
Int MAC Rx Errs	The number of frames for which reception on a particular interface fails due to an internal MAC sublayer receive error
Int MAC Tx Errs	The number of frames for which transmission on a particular interface fails due to an internal MAC sublayer transmit error
Interface	The port ID displayed in the <i>slot/mda/port</i> format

Label	Description
Interface-name port-id	The interface name of the port
ip ip-address	The IP address
IP Route Blackholed	The destination IP address of the packet matches a black hole route
IPv4 Header Error	The IPv4 packet header contains an error such as an IPv4 header checksum error, an invalid IP version number (not 4 or 6), or an incorrect Total Length field
IPv4 Invalid Address	An error in the source (SA) or destination (DA) IPv4 address was detected. For example class D or class E IPv4 DAs, loopback SA (127.0.0.0/8), 0.0.0.0/8 DA, SA is a subnet broadcast or network address and cases where the IPv4 address is a multicast address but the Ethernet destination address is not RFC1112 compliant. RFC1112 checks are also carried out on Ipipe traffic.
IPv6 Header Error	The IPv6 packet header contains an error such as an incorrect Payload Length field or an IP version not equal to '6' when the Ethernet etype indicates it is IPv6
IPv6 Invalid Address	An error in the source (SA) or destination (DA) IPv6 address was detected. For example, an unspecified IPv6 DA, an IPv6 multicast SA and cases where the IPv6 address is a multicast address but the Ethernet destination address is not RFC2464 compliant. RFC 2464 checks are also carried out on IPIPE traffic.
Jabbers	The total number of packets received that were longer than 1518 octets (excluding framing bits, but including FCS octets), and had either a bad Frame Check Sequence (FCS) with an integral number of octets (FCS Error) or a bad FCS with a non-integral number of octets (Alignment Error)
Keep Alive	The time interval, in seconds, between keep-alive PDUs
L2 Service MTU Exceeded	The length of the packet received on a SAP bound to a layer 2 service (such as VPLS or EPIPE) exceeded the configured MTU for the service
LACP Tunnel	Indicates whether LACP packet tunneling is enabled or disabled
LAG ID	The LAG or multi-link trunk (MLT) that the port is assigned to
Laser Tunability	The laser tune-ability of the transceiver
Last Changed	The date and time when the interface connection entered its current operational state
Last Cleared Last Cleared Time	The date and time the restart count reset to zero
Last cleared time Last Cleared Time	The time of the last clear
last session id	The 802.1x last session ID

Label	Description
last session term cause	The 802.1x last session term cause
last session time	The 802.1x last session time
last session username	The 802.1x last session username
Last State Change	The system time moment that the entity is up
Last Unknown VPI/VCI	The last unknown VPI/VCI that was received on this interface
Late Collisions	The number of times that a collision is detected on a particular interface later than one slot time into the transmission of a packet
Late Packets	The number of received packets that have been discarded due to replay window protection on this SC
Latitude	The latitude of the GNSS antenna
LCD-P	The number of LCD-P packets received
Level	The level number
Licensed	The licensed state
Limit Unused BW	The aggregate rate overrun protection on the aggregate context
Link Length support	The link length support for the transceiver
Link Monitoring	The EFM OAM link monitoring parameters: enabled or disabled
Link-level	Ethernet — The port is configured as Ethernet SONET — The port is configured as SONET-SDH
LMI Type	The LMI type
Load-balance-algo	The load balancing algorithm used on the port
Local Magic Number	The local magic number to be sent to the peer. The magic number provides a method to detect loopbacks. If the value of the local magic number is the same as the value of remote magic number, then it is possible that the link might be looped back. If the two magic numbers do not match, then the link is not looped back.
Longitude	The longitude of the GNSS antenna
Loopback	The number of loopback requests and responses transmitted and received on this connection for both end to end and segment
Loop Detected	True — Loop detected False — No loop detected

Label	Description
LOP-P	The number of Loss Of Pointer path (LOP) occurrences
Low Drop Tail	The low drop tail percent reduction from MBS
mac mac-address	The MAC address
MAC Chip Number	The number of the MAC chip that manages this port
Macsec Encrypt	Enabled — MACsec encryption is enabled on the traffic. All fields behind source or destination MAC addresses are encrypted on each packet.  Disabled — MACsec encryption is disabled for the traffic. The packet fields are sent in clear text but data integrity is checked on each packet, and the MACsec overhead (header and ICV) is still added to each packet.
macsec-enabled	The MACsec is enabled or disabled
Manufacture date	The manufacturing date of the hardware component in the mmddyyyy ASCII format
Max auth requests	The 802.1x port maximum authorization requests
Max Packet Error	The number of maximum packet errors
Min Packet Error	The number of minimum packet errors
Max Penalties	The maximum penalty value for port dampening
Maximum Frequency	The supported maximum frequency for the transceiver
Max Suppress Time	Elapsed time, in seconds, after the link comes up before the worst case accumulated penalties have decayed to the reuse threshold
MBS	The MBS value defining the maximum size for the queue
Media	The media supported for the SFP
Min Frame Length	The configured minimum transmitted frame length
Minimum Frequency	The supported minimum frequency for the transceiver
MKA Key Server Priority	The MKA key server priority: 0 to 255 (default 16).  A priority of 0 means more it is more likely to become the MKA server. If multiple participants have the same priority, the MAC address becomes the differentiator for electing the MKA server.
Mode	The mode of the interface. It can be set as Data Terminal Equipment (DTE) or Data Circuit-terminating Equipment (DCE)
Mode	The mode of OAM operation for an Ethernet port: active or passive

Label	Description
Model Number	The model number of the transceiver or adapter
Monitor Depth	Queue depth monitoring for the specified queue enabled or disabled
Monitor Oper Group	Operational group being monitored
Monitor Port Sched	Enabled — Congestion monitoring on an Egress Port Schedule (EPS) is enabled Disabled — Congestion monitoring on an EPS is disabled
MTU	The size of the largest packet which can be sent/received on the Ethernet physical interface, specified in octets
Mult Collisions	The number of frames that are involved in more than one collision and are subsequently transmitted successfully
Multicast MAC With Unicast Dest IP	The Ethernet destination (MAC) address is multicast but the IP address is unicast
Multicast Packets Input/Output	The number of packets, delivered by this sub-layer to a higher (sub-) layer, which were addressed to a multicast address at this sub-layer. For a MAC layer protocol, this includes both group and functional addresses. The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses.
Multicast Packets	Input — The number of input multicast packets Output — The number of output multicast packets
Multicast Pckts	The number of packets, delivered by this sub-layer to a higher (sub-) layer, which were addressed to a multicast address at this sub-layer. For a MAC layer protocol, this includes both Group and Functional addresses. The total number of packets that higher-level protocols requested be transmitted, and which were addressed to a multicast address at this sub-layer, including those that were discarded or not sent. For a MAC layer protocol, this includes both Group and Functional addresses.
Name	The entity name
Needs ICMP	The received packet requires the router to generate an ICMP message. For example, the IP packet TTL is expired or the destination host, network, or ESM subscriber is unreachable. Host unreachable can occur, among other reasons, if the destination address (for example, 10.0.1.2) of a packet resolves to a loopback interface subnet (for example, 10.0.1.1/24) but does not match the specific loopback address (for example, 10.0.1.1). Destination unreachable can also occur, for example, in response to an IPv6 packet received by a router from a point-to-point link (a non-Ethernet link) destined to an address within a subnet assigned to that same link (other than one of the receiving router's own addresses) as described in RFC 4443.

Label	Description
Net. Egr. Queue Pol	The network egress queue policy or that the default policy is used
No SCI Packets	The number of received packets discarded with unknown SCI information when the C bit in the SecTAG is set
No Tag Packets	The number of received packets discarded without the MAC security tag (SecTAG)
No Using SA Packets	The number of received packets that have been discarded on this SA which is not currently in use
Notifications	LLDP notifications (enabled, disabled)
Not Valid Packets	The number of not valid packets that have been discarded on this active SA
Number OCD Events	The number of times the Out of Cell Delineation (OCD) events occurred
Number of Lanes	The number of lanes of the transceiver
Number of Logs	The number of logs
Octets	The number of input and output octets. HEC discarded cells are not included in the input octet numbers.
Octets	The total number of octets received
OctetsIn Dropped	The number dropped egress octets that were in-profile
OctetsIn Forwarded	The number of forwarded egress octets that were in-profile
OctetsIn Total	The total number of egress octets that were forwarded and dropped
OctetsOut Dropped	The number of dropped egress octets that were out-of-profile
OctetsOut Forwarded	The number of forwarded egress octets that were in-profile
OctetsOut Total	The total number of egress octets that were forwarded and dropped
OK Packets	The number of validated packets on this SA
Oper Duplex	full — The link is set to full duplex mode half — The link is set to half duplex mode
Oper Egress Rate	The operational egress bandwidth (in kilobits per second) that the Ethernet interface can generate
Oper MTU	The negotiated size of the largest packet that can be sent on the port SONET/SDH, channel, specified in octets.  For channels that are used for transmitting network datagrams, this is the size of the largest network datagram that can be sent on the channel.

Label	Description
Oper Speed	The operating speed of the interface
Oper State	up — The entity is operationally up down — The entity is operationally down Additionally, the <i>lag-id</i> of the LAG it belongs to in addition to the status of the LAG member (active or standby) is specified
Oper Status	The operational status of the port
Oper Status	up: the port is operationally up (communication between the main board and the GNSS receiver is established and the port is ready to receive GNSS signals) down: the port is operationally down (none of the up conditions have been met)
Operational Channel	The operational channel for the transceiver
Operational Frequency	The operational frequency for the transceiver
Optical Compliance	The optical compliance code of the transceiver
Optical Compliance	The optical compliance code of the transceiver
Other	The number of OAM cells that are received but not identified
OTU Status	The status of the OTU (Optical Transport Unit): enabled or disabled. When OTU is enabled, and additional layer of framing encapsulates an MDA's natively programmed mode of operation, 10-Gigabit Ethernet LAN or WAN, adding SONET-Like Framing with FEC (Forward Error Correction). When OTU is disabled, the MDA operates in a 10-Gigabit Ethernet LAN or WAN as per Ethernet provisioning.
Out packets	The number of echo-request packets sent
Out Pause Frames	The number of Out Pause frames
Over Sized SDUs	The total number of oversized SDU discards
Overrun Packets	The number of packets discarded because the number of received packets exceeded the cryptographic performance capabilities
Oversize Pckts	The total number of packets received that were longer than can be accepted by the physical layer of that port (9900 octets excluding framing bits, but including FCS octets for GE ports) and were otherwise well formed
Packet Abort Error	The number of packets aborted due to errors received
Packets	The total number of packets received
Packets	The number of input and output packets.



Label	Description
	Packets discarded due to HEC or oversize discards are not counted. CRC errors are also in the packet counts show up on the VC level statistics but not on the port level.
PacketsIn Dropped	The number dropped egress packets that were out-of-profile
PacketsIn Forwarded	The number of forwarded egress packets that were in-profile
PacketsIn Total	The total number of egress packets that were forwarded and dropped
PacketsOut Dropped	The number of dropped egress packets that were out-of-profile
PacketsOut Forwarded	The number of forwarded egress packets that were in-profile
PacketsOut Total	The total number of egress packets that were forwarded and dropped
Parity Error	The number of parity errors received
Part Number	The vendor part number contains ASCII characters, defining the vendor part number or product name
PBB Ethertype	The Ethertype used for PBB encapsulation
Per Threshold MDA Discard Statistics	See the 7450 ESS, 7750 SR, 7950 XRS, and VSR Interface Configuration Guide, "Packet Classification and Scheduling" section
Phy Link	Yes — A physical link is present
Physical Link	No — A physical link is not present
Phys State Chng Cnt	<p>Increments when a fully qualified (de-bounced) transition occurs at the physical layer of an Ethernet port which includes the following transitions of the Port State as shown in the <b>show port</b> summary:</p> <ul style="list-style-type: none"> <li>- from "Down" to either "Link Up" or "Up"</li> <li>- from either "Link Up" or "Up" to "Down"</li> </ul> <p>This counter does not increment for changes purely in the link protocol states (for example, "Link Up" to "Up"). The counter is reset if the container objects for the port are deleted (for example, MDA deconfigured, or IOM type changes).</p>
PIR Rule	<p>min — The operational PIR for the queue is equal to or greater than the administrative rate specified using the rate command</p> <p>max — The operational PIR for the queue is equal to or less than the administrative rate specified using the rate command</p> <p>closest — The operational PIR for the queue is the rate closest to the rate specified using the rate command</p>
Physical Link	Yes — A physical link is present

Label	Description
	<p>No — A physical link is not present</p> <p>For GNSS ports:</p> <p>Yes — The port is operationally up (communication between the main board and the GNSS receiver is established and the port is ready to receive GNSS signals. For example, if the GNSS port is configured, the operational status is up, the receiver status is 3D FIX, and you disconnect the GNSS RF cable from the port, the physical link on the port still shows as up.</p> <p>No — The port is operationally down (none of the up conditions apply)</p>
PLM-P	The number of PLM-P packets received
PM BEI	The number of backward error indications received from the far end in the path monitor overhead
PM BIP8	The number of detected BIP-8 errors in the path monitor overhead
PM SES	The section monitor severely errored seconds where the number of PM-BIP8 was greater than 15% of the maximum
Polar Depend Loss (dB)	The polarization dependent loss in decibels
Policy-Name	The policy name
Port control	The 802.1x port control: auto, force-auth, force-unauth
Port Encap	<p>Null — Ingress frames will not use tags or labels to delineate a service</p> <p>dot1q — Ingress frames carry 802.1Q tags where each tag signifies a different service</p>
Port ID	The port ID that is configured or displayed.
Port <id> Bridge nearest-bridge	
Port <id> Bridge nearest-non-tpmr	
Port <id> Bridge nearest-customer	
Port IfIndex	The GNSS interface index number, which reflects its initialization sequence
Port Mode	<p>Network — The port is configured for transport network use</p> <p>Access — The port is configured for service access</p> <p>Hybrid — The port is configured for both access and network use</p>
Port State	<p>Up — The port is physically present and has physical link present</p> <p>Down — The port is physically present but does not have a link. This state may also be considered as Link Down</p> <p>Ghost — A port that is not physically present</p> <p>None — The port is in its initial creation state or about to be deleted</p>

Label	Description
	<p>Link Up — A port that is physically present and has physical link present</p> <p>Note that when Link Up appears at the lowest level of a SONET/SDH path or a TDM tributary, it means the physical connection is active but the port is waiting on some other state before data traffic can flow. It is a waiting state and indicates that data traffic will not flow until it transitions to the Up state.</p>
Port status	The 802.1x port status
PorID TLV Subtype	The encoding of the port identifier TLVs transmitted to the peer (tx-if-alias, tx-if-name, tx-local)
Port Type	The type of port or optics installed
Present Channel	The channel that the transceiver is currently on
Protected Octets	The number of plain text octets that are integrity protected but not encrypted on the transmitting SC
Protected Packets	The number of packets that are integrity protected but not encrypted for this transmitting SA
Protected SA Packets	The number of packets that are integrity protected but not encrypted for this SA
Protocol	The applicable protocols for the specified port
PTP IPv4 address	IPv4 destination address of incoming PTP messages that should be timestamped. Only unicast addresses are supported.
PTP IPv6 address	IPv6 destination address of incoming PTP messages that should be timestamped. Only unicast addresses are supported.
PTP Timestamping	Filter status for ingress timestamping of PTP messages to match multiple PTP flows
Pump Temperature (C)	The pump temperature high and low warning alarms
QinQ Ethertype	The Ethertype expected when the port's encapsulation type is QinQ
Queue	The queue information
Queue Depths (percentage)	The queue depth percentages
Queue-Id	The <i>queue-id</i> that uniquely identifies the queue
Quiet period	The 802.1x port quiet period: 1 to 3600 seconds
Radius-plcy	The 802.1x port RADIUS policy name
Range	The usable range to fine tune the frequency

Label	Description
RDI	The number of RDI cells transmitted and received on this connection for both end to end and segment
RDI-P	The number of RDI-P packets received
Reassembly Timeouts	The number of reassembly timeout occurrences
Reauth enabled	no — The 802.1x port reauth enabled is not up yes — The 802.1x port reauth enabled is up
Reauth period	The 802.1x port reauthorization period
Receiver status	Acquiring Satellites: GNSS receiver is attempting to track satellite Position Hold: GNSS receiver position is determined and GNSS receiver is no longer solving for position; TRAIM algorithm is correcting for time bias 2D Fix: GNSS receiver is attempting to obtain a two-dimensional position (latitude, longitude) solution 3D Fix: GNSS receiver is attempting to obtain a three-dimensional position (latitude, longitude, altitude) solution Unknown: default state on power-up Communication Lost: occurs after 30 s of missing Channel/Data/Status messages or TRAIM status messages from the GNSS receiver Communication Established: occurs after a successful reestablishment of communication following a Communication Lost status
Remote Error	The number of remote error received
Remote Magic Number	The magic number sent by the peer. If the value of remote magic number is the same as the value of the local magic number, then it is possible that the link might be looped back. If the two magic numbers do not match, then the link is not looped back.
Replay Protection	Enabled — Replay Protection is enabled Disabled — Replay Protection is disabled If replay protection is enabled for this CA, the out of replay-window packets will be discarded. Otherwise, the Replay Window Size value is ignored. The default value is disabled, so that when adding MACsec to an interface, it will not affect traffic immediately.
Replay Window Size	The size, in packets, of the replay window. Each packet is assigned a unique packet number. Replay protection enforces strict ordering of the packets and protects against replay attacks. In networks where out-of-order packets are expected, the window size can be set up to 4294967295.
Request Interval	The time interval in seconds at which keepalive requests are issued

Label	Description
Resolution	The resolution used to fine tuning the frequency
Restart Count	The number of times that this Control Protocol has reached the 'open' state
Retry	The minimum wait time, in seconds, before re-enabling the port after loop detection
Reuse Threshold	The threshold at which the port up state is no longer suppressed, after the port has been in a suppressed state and the accumulated penalties decay drops below this threshold
RS-FEC Mode	The RS-FEC mode
RxDTV Adjust	The Rx DTV adjust status
Rx Ageouts	The number of LLDP frames received on the port with a properly formatted TLV that was not supported on the receiving port
Rx Frames	The number of LLDP frames received on the port
Rx Frame Discard	The number of LLDP frames received but discarded on the port
Rx Frame Errors	The number of LLDP frames received with errors on the port
Rx Media Frame Error Count	The receive media frame error count
Rx TLV Discard	The number of LLDP frames received on the port discarded because of the TLV
Rx TLV Unknown	The number of LLDP frames received on the port with a properly formatted TLV that was not supported on the receiving port
Rx Total Power (dbm)	The receive total power
Rx Quality Level	Indicates which QL value has been received from the interface
Rx Signal Label	The received signal label
Rx Trace Str (Hex)	The received SONET path trace string in hexadecimal
sap	The physical port identifier portion of the SAP definition
Sat Port Queue Statistics	The satellite queue statistics with per-queue forward and drop information (packet and octet counters) for satellite uplink and client ports
Sched Policy	The name of the scheduler policy assigned to the virtual port
SCI	The Secure Channel Identifier (SCI)
SD Threshold	The configured error rate threshold at which the SD (Signal Degrade) alarm is raised

Label	Description
Security Zone	The security zone this port belongs
Serial Number	The vendor serial number of the hardware component
Server timeout	The 802.1x port server timeout
Service-id port-id	The service IDs affected by the encap-match configured under this sub-port. One or more services can be affected by the match (by using * or by targeting ports with traffic aggregations, for example).
SES-P	The number of Severely Errored Seconds
SF Threshold	The configured error rate threshold at which the SF (Signal Fail) alarm is raised
SF/SD Method	The selected method for declaring the SF (Signal Fail) or SD (Signal Degrade) alarm. When BIP8 is selected, the error rate of SM-BIP8 errors in the OTU frames declares SF or SD (This is very similar to SONET SF/SD which uses a rate of B2 errors). When FEC is selected, the rate of corrected bits declares SF or SD. This effectively indicates that the link would be degraded (SD) or failed (SF) if FEC was disabled and gives the user an early warning that the link is degrading or is about to fail.
Sflow	Enabled — sFlow data collection for the port is enabled Disabled — sFlow data collection is disabled
C/QS/S/XFP/MDI MDX	Additional information related to the port. This can include optical compliance and the link length if available from the installed optics. If there is no optical compliance information programmed in the part, "Unspecified" is displayed. GIGE — The GigE SFP type FASTE — The FastE SFP type GIGX — The GigX SFP type MDI — Indicates that the Ethernet interface is of type MDI (Media Dependent Interface) MDX — Indicates that the Ethernet interface is of type MDX (Media Dependent Interface with crossovers)
Shaped Bandwidth	The total shaped bandwidth consumed on this interface in the egress direction
Signal Label	The C2 byte value
Single Fiber Mode	Yes - Single fiber option is configured No - Single fiber option is not configured
Slot ID	The slot number of the card in the chassis
SM BEI	The number of backward error indications received from the far end in the section monitor overhead
SM BIP8	The number of detected BIP-8 errors in the section monitor overhead

Label	Description
SM SES	Section monitor severely errored seconds where the number of SM-BIP8 was greater than 15% of the maximum
SM-TTI Rx	This is the SM-TTI (Section Monitor Trail Trace Identifier received by this port. When the received TTI is a printable string of characters, it will be displayed as a text string. When the received TTI contains one or more non-printable characters, it will be displayed at a sequence of 64 hex bytes. When the received TTI is all zeros, the string "Not Specified" will be displayed.
SM-TTI Tx (<mode>)	This is the configured SM-TTI (Section Monitor Trail Trace Identifier) to be transmitted by this port in the OTU overhead bytes. The modes are auto, string, or bytes. In the auto and string modes, a printable character string will be displayed. In bytes mode, up to 64 hex bytes are displayed.
Sngl Collisions	The number of frames that are involved in a single collision, and are subsequently transmitted successfully
Speed	The speed of the DS0 channels used in the associated channel-group
SQE Errors	The number of times that the SQE TEST ERROR is received on a particular interface
SSM Code Type	The SSM code type in use on the port
State of polar ROC (krad/s)	The state of polarization rate of change
Subport	The MACsec sub-port used. Multiple MACsec instances can be configured under one port, matching traffic based on the <b>encap-match</b> parameter.
subscr Subscriber	The subscriber ID
Supplicant timeout	The 802.1x port supplicant timeout
Supply Voltage (V)	The supply voltage of the DDM
Supported Grids	A list of supported grids for the transceiver
Suppress Threshold	The threshold at which the port up state is suppressed until the accumulated penalties drop below the reuse threshold again
Svc ID svc-id	The service identifier
Symbol Errors	For an interface operating at 100 Mb/s, the number of times there was an invalid data symbol when a valid carrier was present

Label	Description
Sym Mon SD Thresh	The error rate (for symbol errors) at which to declare the Signal Degrade (SD) condition on an Ethernet interface. If the field displays Disabled, no error rate has been specified
Sym Mon SF Thresh	The symbol error rate at which to declare the Signal Fail (SF) condition on an Ethernet interface. If the field displays Disabled, no error rate has been specified
Sym Mon Window	The size of the sliding window, in seconds, over which the errors are measured
Sync Status	locked: GNSS time is within alarm limits not locked: GNSS time is outside of the alarm limits and/or there is an insufficient number of tracked satellites
Sync. Status Msg	Whether synchronization status messages are enabled or disabled
Tagged Cells	The number of cells that have been demoted from CLP0 to CLP1
Temperature (C)	The temperature of the DDM
Threshold exceeded	The number of times that the drop count was reached
Time	GPS date and time
Time to link drop	The time remaining before the link will be declared dropped if a keepalive echo reply packet is not received
TimeSlots	The DS0 time slot used in the T1/E1 channel-group
Too long Frames	The number of frames received on a particular interface that exceed the maximum permitted frame size
Too Long Packets	The number of transmitted packets discarded because the packet length is greater than the Maximum Transmission Unit (MTU) of the Ethernet physical interface
Total number of access-egress queue groups	The total number of access-egress queue groups associated with the queue-group summary
Total number of network-egress queue groups	The total number of network-egress queue groups associated with the queue-group summary
Total number of access-ingress queue groups	The total number of access-ingress queue groups associated with the queue-group summary
Tot Sym Mon Errs	The total number of symbol errors
Trace String	The SONET path trace string
Traffic Statistics	See the <i>7450 ESS, 7750 SR, 7950 XRS, and VSR Interface Configuration Guide</i> , "Statistics on Physical PXC Ports" section



Label	Description
Transceiver Code	The code for the transmission media
Transceiver Digital Diagnostic Monitoring (DDM)	Transceiver Digital Diagnostic Monitoring (DDM) information, such as temperature and supply voltage
Transceiver Lane Digital Diagnostic Monitoring (DDM)	Transceiver lane DDM information, such as lane temperature and Tx bias current
Transceiver Status	The status of the transceiver
Transceiver Type	The type of transceiver
Transmit Interval	The transmit interval of OAMPDUs
Transmit period	The 802.1x port transmit period
Transmit TLVs	The LLDP TLV to transmit (port-desc, sys-name, sys-desc, sys-cap)
Trigger Fault	The triggered EFM OAM fault
Tunneling	true — The 802.1x port tunneling is on false — The 802.1x port tunneling is not on.
Tunnel Nearest Bridge	The nearest bridge tunneling frames (enabled, disabled)
Tx DUS/DNU	Whether the QL value is forcibly set to QL-DUS/QL-DNU
Tx Frames	The number of LLDP frames transmitted from the port
TX Laser Frequency	The transceiver laser frequency
TX Laser Wavelength	The transceiver laser wavelength
Tx Length Err Frames	The number of LLDP frames transmitted with length error from the port
Tx Pause Frames	Setting to control transmission of PAUSE frames
Tx Quality Level	The QL value being transmitted out of the interface
Type	The connection type
UAS-P	The number of Unavailable Seconds
Unchecked Packets	The number of packets that have failed the integrity check on this SC
Unequipped	The number of unequipped packets received

Label	Description
Undersize Pckts	The total number of packets received that were less than 64 octets long (excluding framing bits, but including FCS octets) and were otherwise well formed
Unicast MAC Destination Address Mismatch	The unicast destination MAC address is a null address or does not match any of the expected MAC addresses associated with the receiving interface. Packets with multicast or broadcast MAC addresses do not increment this counter
Unicast Packets	Input — The number of input unicast packets Output — The number of output unicast packets
Unicast Packets Input/Output	The number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer. The total number of packets that higher-level protocols requested be transmitted, and which were not addressed to a multicast or broadcast address at this sub-layer, including those that were discarded or not sent.
Unicast Packets Input/Output	The number of packets, delivered by this sub-layer to a higher (sub-) layer, which were not addressed to a multicast or broadcast address at this sub-layer
Unicast RPF Check Failed	The IP packet failed the unicast reverse path forwarding (uRPF) check
Unknown MAC Destination Address Discarded in VPLS	The MAC destination address lookup in the MAC FDB failed and the VPLS service is configured to discard packets with unknown destination MAC addresses
Unknown Proto Discards Input/Output	For packet-oriented interfaces, the number of packets received through the interface which were discarded because of an unknown or unsupported protocol. For character-oriented or fixed-length interfaces that support protocol multiplexing the number of transmission units received via the interface which were discarded because of an unknown or unsupported protocol. For any interface that does not support protocol multiplexing, this counter will always be 0.
Unknown Proto Discards	Input — The number of discarded unknown protocol packets
Untagged Packets	The number of transmitted packets without the MAC security tag (SecTAG) when the value of <code>oftmxCmacsecConnAssocReplayProtect</code> for the configured CA is set to 'false'
Use Broadcast Addr	True — Indicates that the broadcast address is to be used for the destination MAC address False — Indicates that the local port MAC address is to be used for the destination MAC address
Used Satellites	Displays the number of tracked satellites
user rx frames	The 802.1x session user Rx frames
user rx octets	The 802.1x session user Rx octets

Label	Description
user tx frames	The 802.1x session user Tx frames
user tx octets	The 802.1x session user Tx octets
UTC offset	Displays the difference between GPS time and UTC time <i>UTC time = GPS time – UTC offset</i>
Utilization Input/ Output	The value computed as the average of the traffic observed over the configured interval, presented as a percentage of the maximum possible traffic
Validated Octets	The number of octets of plain text recovered from received packets that were integrity protected but not encrypted
Vendor OUI	The vendor-specific Organizationally Unique Identifier (OUI) field containing the IEEE company identifier for the vendor
Violation Last Seen	The date and time of the last violation
Violation Threshold Percent	The violation threshold percentage
Violation Total Count	The violation total count
Visible Satellites	The number of satellites that the GNSS receiver should see at the current time. This number can be 0 if the GNSS receiver has not yet downloaded an almanac, even if Used Satellites is more than 0.
VPI/VCI	The VPI/VCI values
Vport Name	The virtual port name
Weight	The relative weight of this scheduler in comparison to other child schedulers and queues at the same strict level
Wghtd Avg Queue Poll Interval	The weighted average queue poll interval
Wghtd Avg HiWtr Mark Poll Interval	The weighted average high water mark queue poll interval

## port

### Syntax

**port** [detail]

### Context

[\[Tree\]](#) (show port)

## Full Context

show port

## Description

This command displays information about all ports configured on all cards in the chassis.

## Parameters

### detail

Displays detailed information.

## Platforms

All

## Output

The following output is an example of port information.

### Output Example

```
*A:cses-V22# show port
=====
Ports on Slot 1
=====
Port      Admin Link Port   Cfg  Oper  LAG/ Port Port Port  C/QS/S/XFP/
Id        State      State MTU  MTU  Bndl Mode Encp Type MDIMDX
-----
1/1/1     Down  Yes  Up      8704 8704  - netw null xcme  GIGE-LX 10KM
1/1/2     Up    Yes  Up      1514 1514  - accs null xcme  GIGE-LX 10KM
1/1/3     Up    Yes  Up      1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/4     Up    Yes  Up      1514 1514  - accs null xcme  GIGE-LX 10KM
1/1/5     Up    Yes  Up      1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/6     Up    Yes  Up      1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/7     Up    Yes  Up      1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/8     Up    Yes  Up      8704 8704  - hybr dotq xcme  GIGE-LX 10KM
1/1/9     Up    Yes  Up      1518 1518  - accs dotq xcme  GIGE-LX 10KM
1/1/10    Down  Yes  Down    8704 8704  - netw null xcme  GIGE-LX 10KM

A:admin@mci(right-b4)# show port
=====
Ports on Slot 1
=====
Port      Admin Link Port   Cfg  Oper  LAG/ Port Port Port  C/QS/S/XFP/
Id        State      State MTU  MTU  Bndl Mode Encp Type MDIMDX
-----
1/1/m1/1  Link Up                anchor  100G
1/1/cl    Up    Link Up                conn
1/1/cl/1  Up    No  Down    9212 9212  - netw null xgige 100GBASE-LR4*
1/1/cl/2  Down No  Down    9212 9212  - netw null xgige
1/1/cl/3  Down No  Down    9212 9212  - netw null xgige
...

Ports on Port Cross Connect 1
=====
Port      Admin Link Port   Cfg  Oper  LAG/ Port Port Port  C/QS/S/XFP/
Id        State      State MTU  MTU  Bndl Mode Encp Type MDIMDX
-----
pxc-1.a   Up    Yes  Link Up 1574 1574  - hybr dotq xgige
```

```
pxc-1.b      Up    Yes  Link Up 1574 1574 - hybr dotq xgige
pxc-2.a      Up    Yes  Link Up 1574 1574 - hybr dotq xgige
pxc-2.b      Up    Yes  Link Up 1574 1574 - hybr dotq xgige
```

## port

### Syntax

```
port {port-id | connector-id | connector-port-id | aps-id | esa-vm-id} statistics
port port-id ethernet dampening
port port-id ethernet efm-oam events [local | remote]
port port-id exp-secondary-shaper shaper-name statistics
port port-id fwd-engine drop-reason statistics
port port-id hs-secondary-shaper shaper-name statistics
port port-id monitor-threshold
port port-id hs-pool high-water-mark {[standard value] | [alternate value]}
port port-id phys-state-change-count
port port-id port-scheduler statistics
port port-id queue-group queue-group-name [instance instance-id] queue-depth [ queue queue-id]
  {ingress | egress} [ access | network]
port port-id queue-group queue-group-name [ instance instance-id] [access | network] { ingress |
  egress} statistics
port port-id vport [name] monitor-threshold
port port-id vport name statistics
port port-id statistics aggregate-queue
```

### Context

[\[Tree\]](#) (clear port)

### Full Context

clear port

### Description

This command clears port statistics for the specified ports.

### Parameters

#### ***port-id***

Specifies the physical port identifier.

**Values** *slot* [*/mda*[/*port*]] or *slot/mda/port* [*.channel*]]

#### ***aps-id***

Specifies the APS group identifier.

*aps-group-id*[.*channel*]

*aps* keyword

*group-id* 1 to 64

**esa-vm-id**

Specifies the ESA VM identifier.

Values	
<i>esa-esa-id/vm-id/vm-port</i>	
<i>esa</i>	keyword
<i>esa-id</i>	1 to 16
<i>vm-id</i>	1 to 4
<i>vm-port</i>	vm-type specific [ <i>fm-sub</i>   <i>to-sub</i> ..]

**statistics**

Keyword that clears the statistics for the specified port.

**cp**

Clears Connection Profile statistics.

**Values** 1 to 8000

**interface-connection**

Keyword that clears the interface-connection statistics.

**ilmi**

Keyword that clears the ILMI information. This parameter is only applicable for ports/bundles that support ILMI.

**pvc**

Keyword that clears the PVC statistics.

**pvp**

Keyword that clears the PVP statistics.

**pvt**

Keyword that clears the PVT statistics.

**slot**

Specifies the slot number.

**Values** 1 to 10

**mda**

The MDA number.

**Values** 1, 2

**Default** All MDAs

**port-connection**

Keyword that clears the port-connection statistics.

**phys-state-change-count**

Keyword that clears the counter that tracks physical port state transitions for ethernet ports ("Phys State Chng Cnt" in "show port" output, or tmnxPortPhysStateChangeCount in the TIMETRA-PORT-MIB).

**port-scheduler**

Keyword that clears the packet and octet counters for the port scheduler that is applied to the specified port.

**queue-group-name**

Clears the specified port queue group name. It uniquely identifies a port ingress queue group in the managed system, up to 32 characters.

**instance-id**

Specifies the specific instance of a queue group.

**Values** 1 to 65535

**ingress**

Keyword that clears the ingress queue group information.

**egress**

Keyword that clears the egress queue group information.

**access**

Keyword that clears the access mode statistics for the queue group.

**network**

Keyword that clears the network mode statistics for the queue group.

**ethernet**

Keyword that clears the Ethernet port statistics.

**dampening**

Keyword that clears the current accumulated penalties of the exponential port dampening feature for the port. The accumulated penalties can be cleared only with this command keyword.

**efm-oam**

Keyword that clears the efm-oam statistics on the port.

**events**

Keyword that clears the efm-oam events.

**local**

Keyword that clears only local EFM OAM events.

**remote**

Keyword that clears only remote (received from peer) events. Local and remote is not specified.

**Default** Without specifying an option, both local and remote are cleared.

***shaper-name***

Clears information about the specified shaper name, up to 32 characters.

***name***

Clears information about the specified Vport name up to 32 characters.

***standard value***

Keyword that clears the high water marks within specific standard port class pools using the standard parameters.

**Values** 1 to 6

***alternate value***

Keyword that clears the high water marks within specific alternative port class pools using the alternative parameters.

**Values** 1 to 6

***aggregate-queue***

Keyword that clears the aggregated forwarded and dropped packets in all queued statistics for the specified port.

**Platforms**

All

port

**Syntax**

**port** *port-id*

**Context**

[\[Tree\]](#) (tools>dump port)

**Full Context**

tools dump port

**Description**

Commands in this context dump port information.

**Parameters**

***port-id***

Specifies the physical port ID.

*port-id* *slot/mda/port*

*aps-id* *aps-group-id*



aps	keyword
<i>group-id</i>	1 to 128

## Platforms

All

## port

## Syntax

**port** [**sap** *sap-id* | **sdp** *sdp-id:vc-id*] [**group** [*grp-ip-address*]] [**detail**] [*family*]

## Context

[\[Tree\]](#) (show>service>id>pim-snooping port)

## Full Context

show service id pim-snooping port

## Description

This command displays PIM port information.

## Parameters

### *sap-id*

Displays the port information associated with the specified SAP

### *sdp-id:vc-id*

Displays the port information associated with the specified SDP

### *grp-ip-address*

Specifies the IP multicast group address for which this entry contains information

### *detail*

Displays detailed port information

### *family*

Displays either IPv4 or IPv6 information for the specified port

**Values**    ipv4 or ipv6

## Platforms

All

## Output

The following output is an example of service PIM snooping information.

## Output Example

```
*A:PE# show service id 1 pim-snooping port
=====
PIM Snooping Ports ipv4
=====
Sap/Sdp Id                Opr
-----
SAP:1/1/1                 Up
SAP:1/1/2                 Up
=====
*A:PE#
```

## port

### Syntax

```
port port-id [{ingress | egress}] [{access | network}] queue-group queue-group-name [instance
instance-id] [{ detail | root-detail | thresholds | priority-info | depth] [arbiter {name | root}]
```

### Context

[\[Tree\]](#) (show>qos>policer-hierarchy port)

### Full Context

```
show qos policer-hierarchy port
```

### Description

This command displays information about the policer hierarchy per port.

### Parameters

#### **port-id**

Displays information about the specified port.

**Values** *slot/mda/port[.channel]*

#### **ingress**

Displays ingress port information.

#### **egress**

Displays egress port information.

#### **access**

Displays policer-hierarchy statistics applied on the specified access port.

#### **network**

Displays policer hierarchy statistics applied on the specified network port.

#### **queue-group-name**

Displays information about the specified queue group name, up to 32 characters.

***instance-id***

Displays information about the instance of the named queue group.

**Values** 1 to 65535

**detail**

Displays detailed information.

**root-detail**

Displays detailed information about the arbiter root.

**thresholds**

Displays the threshold, parenting, rate, and traffic information related to a policer.

**priority-info**

Displays the threshold information related to the root arbiter.

**depth**

Displays the bucket depth, parenting, rate, and traffic information related to a policer.

**name**

Displays information about the name of the QoS arbiter of this forwarding plane.

**root**

Displays information about the arbiter root.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

port

**Syntax**

**port** *port-id* **queue-group** *queue-group-name* [**scheduler** *scheduler-name*] [{ **ingress** | **egress**}] [{**access** | **network**}] [**instance** *instance-id*] [**detail**]

**port** *port-id* **vport** *name* **summary**

**port** *port-id* [**detail**]

**port** *port-id* **vport** *name* [**scheduler** *scheduler-name*] [**detail**]

**Context**

[\[Tree\]](#) (show>qos>scheduler-hierarchy port)

**Full Context**

show qos scheduler-hierarchy port

**Description**

This command displays scheduler hierarchy information per port.

## Parameters

### *port-id*

Specifies the port ID.

<i>port-id</i>	<i>slot/mda/port</i> [ <i>.channel</i> ]		
	<i>eth-sat-id</i>	<i>esat-id/slot/port</i>	
		<i>esat</i>	keyword
		<i>id</i>	1 to 20
	<i>pxc-id</i>	<i>pxc-id.sub-port</i>	
		<i>pxc</i>	keyword
		<i>id</i>	1 to 64
		<i>sub-port</i>	a, b

### **detail**

Displays detailed information.

### **queue-group-name**

Displays information about the specified queue group on the port.

### **scheduler-name**

Displays information about the specified scheduler policy on the port.

### **ingress**

Specifies to display ingress queue group information.

### **egress**

Specifies to display egress queue group information.

### **access**

Displays scheduler-hierarchy statistics applied on an access port.

### **network**

Displays scheduler-hierarchy statistics applied on a network port.

### **instance-id**

Specifies the identification of a specific instance of the queue group.

### **vport name**

Displays statistics for the named VPORT.

## Platforms

All

## Output

The following output is an example of port scheduler hierarchy information, and [Table 387: Show QoS Schedule-Hierarchy Port Output Fields](#) describes port scheduler hierarchy fields.

## Output Example

```
*A:Dut-R# show qos scheduler-hierarchy port 1/2/1 detail
=====
Scheduler Hierarchy - Port 1/2/1
=====
Port-scheduler-policy p1
  Port Bandwidth : 10000000   Max Rate : max
  Consumed : 0               Offered : 0
[Within CIR Level 8]
  Rate : max
  Consumed : 0               Offered : 0

[Within CIR Level 7]
  Rate : max
  Consumed : 0               Offered : 0

[Within CIR Level 6]
  Rate : max
  Consumed : 0               Offered : 0

  (Q) : 2->1/2/1:1->3
  Assigned : 768             Offered : 0
  Consumed : 0
  Weight   : 0

[Within CIR Level 5]
  Rate : max
  Consumed : 0               Offered : 0

[Within CIR Level 4]
  Rate : max
  Consumed : 0               Offered : 0

[Within CIR Level 3]
  Rate : max
  Consumed : 0               Offered : 0

[Within CIR Level 2]
  Rate : max
  Consumed : 0               Offered : 0

  (S) voip(SAP 1/2/1:1)
  Assigned : 0               Offered : 0
  Consumed : 0
  Weight   : 40

  (S) all(SAP 1/2/1:1)
  Assigned : 19000           Offered : 0
  Consumed : 0
  Weight   : 50

[Within CIR Level 1]
  Rate : max
  Consumed : 0               Offered : 0

[Within CIR Level 0]
  Rate : 0
  Consumed : 0               Offered : 0

[Above CIR Level 8]
  Rate : max
  Consumed : 0               Offered : 0
```

```

[Above CIR Level 7]
  Rate : max
  Consumed : 0          Offered : 0

[Above CIR Level 6]
  Rate : max
  Consumed : 0          Offered : 0

[Above CIR Level 5]
  Rate : max
  Consumed : 0          Offered : 0

[Above CIR Level 4]
  Rate : max
  Consumed : 0          Offered : 0

[Above CIR Level 3]
  Rate : max
  Consumed : 0          Offered : 0

[Above CIR Level 2]
  Rate : max
  Consumed : 0          Offered : 0

  (S) voip(SAP 1/2/1:1)
  Assigned : 10000000   Offered : 0
  Consumed : 0
  Weight   : 30

  (S) all(SAP 1/2/1:1)
  Assigned : 960000    Offered : 0
  Consumed : 0
  Weight   : 50

[Above CIR Level 1]
  Rate : max
  Consumed : 0          Offered : 0

  (Q) : 2->1/2/1:1->3
  Assigned : 786        Offered : 0
  Consumed : 0
  Weight   : 1

=====
*A:Dut-R#
    
```

Table 387: Show QoS Schedule-Hierarchy Port Output Fields

Label	Description
S	Displays the scheduler name.
Q	Displays the queue ID and information.
Admin CIR/PIR:	Specifies the configured value of CIR/PIR.
Assigned CIR/PIR:	Specifies the on-the-wire PIR/CIR rate given to a member by that parent level.
Offered CIR/PIR:	Specifies the on-the-wire offered load on that member.

Label	Description
Consumed CIR/PIR:	Specifies the amount of scheduler bandwidth used by this member.

## port

### Syntax

**port** *port-id* **queue-group** *queue-group-name* [**egress**] [{**access** | **network**}] [**instance** *instance-id*] [**detail**]

**port** *port-id* **vport** *name* [**detail**]

### Context

[\[Tree\]](#) (show>qos>agg-rate port)

### Full Context

show qos agg-rate port

### Description

This command displays the H-QoS aggregate rate limit per port or Vport.

### Parameters

#### *port-id*

Specifies the port ID.

<i>port-id</i>	<i>slot/mda/port</i> [ <i>.channel</i> ]		
	eth-sat-id	<i>esat-id/slot/port</i>	
		esat	keyword
		<i>id</i>	1 to 20
	pxc-id	<i>pxc-id.sub-port</i>	
		pxc	keyword
		<i>id</i>	1 to 64
		<i>sub-port</i>	a, b

#### **queue-group** *queue-group-name*

Displays information about the specified queue group on the port.

#### **egress**

Displays egress queue group information.

#### **access**

Displays H-QoS aggregate rate limit information on an access port.

**network**

Displays H-QoS aggregate rate limit information on a network port.

**instance *instance-id***

Specifies the identification of a specific instance of the queue-group.

**Values** 1 to 65535

**vport *name***

Displays H-QoS aggregate rate limit information for the specified Vport.

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of QoS port aggregation rate output, and [Table 388: Show QoS Aggregation Rate Port Output Fields](#) describes the QoS port aggregation rate fields.

**Output Example**

```
*A:PE# show qos agg-rate port 1/1/1 queue-group "qg1" instance 1 access egress
=====
Aggregate Rate Information - Queue Group Port 1/1/1
=====
-----
Egress Scheduler Policy :
Egress Queue-Group : qg1                               Instance-Id : 1
-----
Root (Egr)
| slot(1)
|   AdminRate           : 10000
|   OperRate            : 0
|   Limit Unused Bandwidth : disabled
|   OnTheWireRates      : false
|   LastMileOnTheWireRates : false
|
|-----
=====
*A:PE#
```

*Table 388: Show QoS Aggregation Rate Port Output Fields*

Label	Description
Egress Scheduler Policy	Indicates the name of the egress scheduler policy.
Egress Queue-Group	Indicates the queue group name.
Instance-Id	Indicates the identifier of a specific instance of the queue group.



Label	Description
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.
Limit Unused Bandwidth	Indicates whether the <b>limit-unused-bandwidth</b> command is enabled to protect against exceeding the aggregated bandwidth
OnTheWireRates	Indicates whether the displayed rates are on-the-wire rates.
LastMileOnTheWireRates	Indicates whether the displayed rates are on-the-wire rates for the last mile only.

## port

### Syntax

**port** *port-id* [**detail**]

### Context

[\[Tree\]](#) (show>system>ptp port)

### Full Context

show system ptp port

### Description

This command displays PTP port information.

### Parameters

#### *port-id*

Specifies the port ID.

**Values** slot/mda/port

#### **detail**

Displays detailed information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of PTP port information, and [Table 389: Show PTP Port Output Fields](#) describes the output fields.

### Output Example

```
show system ptp port
```

```
=====
IEEE 1588/PTP Ethernet Port Summary Information
=====
Port          PTP Adm/Opr  PTP State   Neighbors  Tx Rate    Rx Rate
-----
10/2/16      up/up        passive     5           12312      4400
1/1/1        up/up        slave       1           12312      4400
1/1/2        up/up        master      61          12312      4400
1/1/3        up/down     disabled    0            0           0
1/1/4        up/up        listening   0            0           0
-----
No. of PTP Ports : 5                               Total 99999  999999
```

Table 389: Show PTP Port Output Fields

Label	Description
IEEE 1588/PTP Ethernet Port Summary Information	
Port	The port ID
PTP Adm/Opr	The PTP administrative and operational states
PTP State	The PTP state
Neighbors	The neighbors
Tx Rate	The transmit rate
Rx Rate	The receive rate
No. of PTP Ports	The total number of PTP ports

The following output is an example of PTP port details information, and [Table 390: Show PTP Port Detail Output Fields](#) describes the output fields.

### Output Example

```
show system ptp port 1/1/4 detail
```

```
=====
IEEE 1588/PTP Ethernet Port Information
=====
Port          : 1/1/4
PTP Admin State : up
Local MAC Add  : ca:47:01:04:00:02
Cfg Sync Rate  : 64 pkt/s
Master-Only    : false
monitorReceiver : false
PTP Port Number : 1
Neighbors      : 1
Port Asymmetry : 0 ns
Profile Name    : Primary
PTP Oper State : up
Mulicast MAC Addr : 01:1b:19:00:00:00
Cfg Delay Req Rate : 64 pkt/s
G.8275 Priority : 128
monitorSender   : false
PTP Port State  : master
Timestamp Point : port
```

```

Profile           : ITU-T G.8275.2      Domain           : 44
=====
IEEE 1588/PTP Ethernet Port Neighbor Clocks
=====
Port              : 1/4/2                MAC Address       : ca:45:01:01:00:01
Clock Id          : ca45ffffffe000000   PTP Port #       : 1
Rx Packet Rate    : 129                  PTSF-unusable    : N/A
Best Master       : no                   Parent Clock      : no
Backup Source     : yes
Monitor Time State: acquiring             Changed          : 2023/05/29 13:57:36
Last Packet Offset From Master : +1 ns      Last Calc        : 2021/09/02 12:41:13
Last Packet Mean Path Delay   : +15 ns     Last Calc        : 2021/09/02 12:41:13
APTS Asymmetry    : +140,737,488 ms     Last Calc        : 2023/05/29 13:52:09
=====
IEEE 1588/PTP Packet Statistics
=====
-----
Input      Output
-----
PTP Packets
Announce   253      11
Sync       243      1
Follow Up   0         0
Delay Request 0         0
Delay Response 0         0
Signaling  10        10
Other       0         0
Discards
Bad PTP domain 0         0
Alternate Master 0         0
Out Of Sequence 0         0
Packet Timing Signal Fail - Unusable 2848      0
Other       0         0
=====
    
```

Table 390: Show PTP Port Detail Output Fields

Label	Description
IEEE 1588/PTP Ethernet Port Information	
Port	The port ID
PTP Admin State	The PTP administrative state
PTP Oper State	The PTP operational state
Local MAC Addr	The local MAC address op
Multicast MAC Addr	The multicast MAC address
Cfg Sync Rate	The configured synchronization rate
Cfg Delay Req Rate	The configured delay request rate

Label	Description
Master-Only	The master-only value
G.8275 Priority	The G.8275 priority
monitorReceiver	The monitorReceiver state
monitorSender	The monitorSender state
PTP Port Number	The PTP port number
PTP Port State	The PTP port state
Neighbors	The neighbors
Timestamp Point	The timestamp point
Port Asymmetry	The port asymmetry time
Profile Name	The profile name
Profile	The profile
Domain	The domain
IEEE 1588/PTP Ethernet Port Neighbor Clocks	
Port	The port ID
MAC Address	The MAC address
Clock Id	The clock ID
PTP Port #	The port number assigned to this PTP clock
Rx Packet Rate	The receive rate
PTSF-unusable	Indicates if there is a Packet Timing Signal Fail (PTSF)-unusable condition associated with a neighbor port
Best Master	Indicates if this peer is selected as the best master clock by the BTCA
Parent Clock	Indicates if this is the parent clock. May differ from the best master if there is a local GNSS.
Backup Source	Indicates if this port is operating as a backup slave to the parent clock
Monitor Time State	Time recovery state of the monitored PTP port or peer
Last Packet Offset from Master	The offsetFromMaster calculated from the last packet exchange with the parent clock

Label	Description
Last Packet Mean Path Delay	The meanPathDelay calculated from the last packet exchange with the parent clock
APTS Asymmetry	The asymmetry computed by the backup source. This is used to compensate if the clock switches to this backup.
IEEE 1588/PTP Packet Statistics	
Input	The number of input packets within the specified category
Output	The number of output packets within the specified category

## port

### Syntax

**port** *port-id* **neighbor** *ieee-address* **ptsf-unusable** **statistics**

### Context

[\[Tree\]](#) (clear>system>ptp port)

### Full Context

clear system ptp port

### Description

This command clears PTP port information.

### Parameters

#### *port-id*

Clears the specified port ID.

**Values** *slot/mda/port*

#### *ieee-address*

Specifies the MAC address.

**Values** *xx:xx:xx:xx:xx:xx* or *xx-xx-xx-xx-xx-xx*

#### **ptsf-unusable**

Keyword used to clear the PTSF-unusable condition associated with a neighbor port.

#### **statistics**

Keyword used to clear statistics information of the specified port ID.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## port

### Syntax

**port** *port-id* [*port-id*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**] [**multiclass**] [**aggregate-queue**]  
**port all-ethernet-rates** [**interval** *seconds*] [**repeat** *repeat*]

### Context

[Tree] (monitor port)

### Full Context

monitor port

### Description

This command enables port traffic monitoring. The specified port(s) statistical information displays at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified port(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the **rate** is specified, the "rate per second" for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *port-id*

Specify up to 5 port IDs. Port-IDs are only MLPPP bundles or bundle protection groups when the multiclass is specified.

<i>port-id</i>	<i>slot/mdal/port [.channel]</i>		
	eth-sat-id	esat-id/slot/port	
		esat	keyword
		<i>id</i>	1 to 20
	pxc-id	pxc-id.sub-port	
		pxc	keyword
		<i>id</i>	1 to 64
		<i>sub-port</i>	a, b
	aps-id	aps-group-id[.channel]	
		aps	keyword
		<i>group-id</i>	1 to 64

### **seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Keyword that displays the raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Keyword that displays the rate-per-second for each statistic; instead of the delta.

### **all-ethernet-rates**

Keyword that displays port traffic monitoring and utilization output for all data Ethernet ports enabled in the system, in a table output format.

### **aggregate-queue**

Keyword that periodically displays the aggregated number of forwarded and dropped packets and bytes per direction across all queues on a PXC port (pxc-<id>.a or pxc-<id>.b).

The system periodically aggregates statistics from all queues under the specified PXC port for presentation. The duration required to gather these statistics is typically brief, though it may vary based on the system load at the time of querying and the number of queues and member ports in a LAG.

Statistics are cached for a 30-second interval, which is also the minimum interval at which this command can output results.

## **Platforms**

All

## **Output**

The following outputs are examples of port information.

### **Output Example**

```
A:ALA-12>monitor# port 2/1/4 interval 3 repeat 3 absolute
=====
Monitor statistics for Port 2/1/4
=====
                               Input                               Output
-----
At time t = 0 sec (Base Statistics)
-----
Octets                               0                               0
```

```

Packets          39          175
Errors           0           0
-----
At time t = 3 sec (Mode: Absolute)
-----
Octets           0           0
Packets         39          175
Errors           0           0
-----
At time t = 6 sec (Mode: Absolute)
-----
Octets           0           0
Packets         39          175
Errors           0           0
-----
At time t = 9 sec (Mode: Absolute)
-----
Octets           0           0
Packets         39          175
Errors           0           0
=====
A:ALA-12>monitor#

A:ALA-12>monitor# port 2/1/4 interval 3 repeat 3 rate
=====
Monitor statistics for Port 2/1/4
=====
                                Input          Output
-----
At time t = 0 sec (Base Statistics)
-----
Octets           0           0
Packets         39          175
Errors           0           0
-----
At time t = 3 sec (Mode: Rate)
-----
Octets           0           0
Packets         0           0
Errors           0           0
Bits            0           0
Utilization (% of port capacity)  0.00        0.00
-----
At time t = 6 sec (Mode: Rate)
-----
Octets           0           0
Packets         0           0
Errors           0           0
Bits            0           0
Utilization (% of port capacity)  0.00        0.00
-----
At time t = 9 sec (Mode: Rate)
-----
Octets           0           0
Packets         0           0
Errors           0           0
Bits            0           0
Utilization (% of port capacity)  0.00        0.00
=====
A:ALA-12>monitor#

=====
*A:Cpm-A> monitor port bundle-fr-1/1.1
    
```



```

=====
Monitor statistics for Port bundle-fr-1/1.1
=====
                                     Input           Output
-----
At time t = 0 sec (Base Statistics)
-----
Octets                               0             0
Packets                              0             0
Errors                               0             0
=====

*A:Cpm-A> monitor port pxc-1.a interval 30 repeat 10 aggregate-queue
=====
Monitor statistics for port pxc-1.a
=====
Ingress Packets Fwd      Ingress Octets Fwd
Ingress Packets Drop    Ingress Octets Drop
Egress Packets Fwd      Egress Octets Fwd
Egress Packets Drop     Egress Octets Drop
-----
At time t = 0 sec (Base Statistics)
-----
          4654649      94523288
           22544       99852
    98652214      65889554
           55451       22144
-----
At time t = 30 sec (Mode: Delta)
-----
          4654649      94523288
           22544       99852
    98652214      65889554
           55451       22144
-----
At time t = 60 sec (Mode: Delta)
-----
          4654649      94523288
           22544       99852
    98652214      65889554
           55451       22144
-----

*A:Cpm-A> monitor port pxc-1.a interval 30 repeat 10 rate aggregate-queue
=====
Monitor statistics for port pxc-1.a
=====
                                     Input           Output
-----
At time t = 0 sec (Base Statistics)
-----
Forwarded Packets          454649      94288
Forwarded Bytes           3343434    777998
-----
At time t = 30 sec
-----
Rate [kbps]                4654649      94288
Utilization (% of port capacity)  22.54      9.98
    
```

```
-----
At time t = 60 sec
-----
Rate [kbps]                4654649      94288
Utilization (% of port capacity)  22.54      9.98
-----
```

The following output is an example of port Ethernet information.

### Output Example

```
A:ALA-12>monitor# port all-ethernet-rates interval 3 repeat 100
=====
Monitor statistics for all Ethernet Port Rates
=====
Port-Id      D              Bits  Packets  Errors  Util
-----
At time t = 0 sec (Base Statistics)
-----
5/1/1        I              0     0        0       0.00
              0              0     0        0       0.00
5/2/1        I              0     0        0       0.00
              0              0     0        0       0.00
-----
At time t = 3 sec (Mode: Rate)
-----
5/1/1        I              0     0        0       0.00
              0              0     0        0       0.00
5/2/1        I              0     0        0       0.00
              0              0     0        0       0.00
-----
At time t = 6 sec (Mode: Rate)
-----
5/1/1        I              0     0        0       0.00
              0              0     0        0       0.00
5/2/1        I              0     0        0       0.00
              0              0     0        0       0.00
-----
At time t = 9 sec (Mode: Rate)
-----
5/1/1        I      4286480384  697669      0      43.98
              I      4286382080  697653      0      43.98
5/2/1        I      4254070784  692394      0      43.64
              I      4253952000  692375      0      43.64
-----
At time t = 12 sec (Mode: Rate)
-----
5/1/1        I      9746288640  1586K      0      99.99
              I      9746216960  1586K      0      99.99
5/2/1        I      9746280448  1586K      0      99.99
              I      9746167808  1586K      0      99.99
=====
A:ALA-12>monitor#
```

## port

### Syntax

```
port port-id [port-id] atm [aal-5 | cp cp-id | ilmi | interface-connection | pvc vpi/vci [aal-5 | oam] | pvp vpi
[aal-5 | oam | pvt vpi1.vpi2] [interval seconds] [repeat repeat] [absolute | rate]
port port-id [port-id] hw-aggr-shaper-sched [interval seconds] [repeat repeat] [absolute | rate]
port port-id [port-id] hw-aggr-shaper-sched [interval seconds] [repeat repeat] monitor-threshold
port port-id [port-id] [interval seconds] [repeat repeat] [absolute | rate] [multiclass]
port port-id [port-id] port-scheduler [ interval seconds] [repeat repeat] [absolute | rate]
```

### Context

[\[Tree\]](#) (monitor port)

### Full Context

monitor port

### Description

This command enables port traffic monitoring. Various keywords can be used to monitor specific attributes of the ATM port. The specified port(s) statistical information displays at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified port(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the **rate** is specified, the "rate per second" for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### **port-id**

Specifies up to five port IDs. Port-IDs are only be MLPPP bundles or bundle protection groups when the multiclass is specified.

<i>port-id</i>	<i>slot/mda/port [.channel]</i>		
	<i>aps-id</i>	<i>aps-group-id[.channel]</i>	
		<i>aps</i>	keyword
		<i>group-id</i>	1 to 64

#### **seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

***repeat***

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

***absolute***

Displays raw statistics without processing. No calculations are performed on the delta or rate statistics.

***rate***

Displays the rate-per-second for each statistic, instead of the delta.

***monitor-threshold***

Displays the exceed count for the port-scheduler under Vport (if specified) or for a physical port.

***multiclass***

Monitors multiclass statistics.

***port-scheduler***

Monitors the packet and octet counters for traffic exiting the specified port for the applicable applied port scheduler policy.

***atm***

Monitors ATM statistics.

***aal-5***

Monitors the AAL-5 statistics for the port.

***cp-id***

Monitors ATM connection profile statistics.

**Values** 1 to 8000

***ilmi***

Monitors ATM ILMI statistics.

***interface-connection***

Monitors ATM interface connection statistics.

***pvc vpi/vci***

Monitors ATM PVC statistics.

**Values** vpi -[0 to 4095] (NNI)  
[0 to 255] (UNI)  
vci - [1| 2| 5 to 65535]

***pvp vpi***

Monitors ATM PVP statistics

**Values** vpi [0 to 4095] (NNI) [0 to 255] (UNI)

**pvt vpi1.vpi2**

Monitors ATM PVT statistics.

**Values** [0 to 4095].[0 to 4095] (NNI)[0 to 255].[0 to 255] (UNI)

**oam**

Monitors ATM PVC/PVP OAM statistics.

**Platforms**

All

**Output**

The following output is an example of port ATM information.

**Output Example**

```
A:ALA-49# monitor port 9/1/1 atm interval 3 repeat 2 absolute
=====
Monitor ATM statistics for Port 9/1/1
=====
                                     Input          Output
-----
At time t = 0 sec (Base Statistics)
-----
Octets                               0             0
Cells                                0             0
Unknown VPI/VCI Cells                0
-----
At time t = 3 sec (Mode: Absolute)
-----
Octets                               0             0
Cells                                0             0
Unknown VPI/VCI Cells                0
-----
At time t = 6 sec (Mode: Absolute)
-----
Octets                               0             0
Cells                                0             0
Unknown VPI/VCI Cells                0
=====
A:ALA-49#
```

```
*A:PE1# monitor port 5/1/5 port-scheduler interval 11 repeat 1
=====
Monitor Port Scheduler statistics for Port 5/1/5
=====
                                     Forwarded      Dropped
-----
At time t = 0 sec (Base Statistics)
-----
Total
Octets                               2177303552    2687166080
Packets                              17010184      20993485
Level 1
Octets                               1306180608    1936799360
```

```

Packets                                10204536                                15131245
Level 2
Octets                                871122944                                750366720
Packets                                6805648                                    5862240
Level 3
Octets                                0                                           0
Packets                                0                                           0
Level 4
Octets                                0                                           0
Packets                                0                                           0
Level 5
Octets                                0                                           0
Packets                                0                                           0
Level 6
Octets                                0                                           0
Packets                                0                                           0
Level 7
Octets                                0                                           0
Packets                                0                                           0
Level 8
Octets                                0                                           0
Packets                                0                                           0
-----
At time t = 11 sec (Mode: Delta)
-----
Total
Octets                                29900288                                36902528
Packets                                233596                                    288301
Level 1
Octets                                17937408                                26597632
Packets                                140136                                    207794
Level 2
Octets                                11962880                                10304896
Packets                                93460                                     80507
Level 3
Octets                                0                                           0
Packets                                0                                           0
Level 4
Octets                                0                                           0
Packets                                0                                           0
Level 5
Octets                                0                                           0
Packets                                0                                           0
Level 6
Octets                                0                                           0
Packets                                0                                           0
Level 7
Octets                                0                                           0
Packets                                0                                           0
Level 8
Octets                                0                                           0
Packets                                0                                           0
=====
*A:PE1#
*A:PE1# monitor port 5/1/5 vport "dslam-3" interval 11 repeat 1 rate
=====
Monitor Port Scheduler statistics for Port 5/1/5
=====
                                Forwarded                                Dropped
-----
At time t = 0 sec (Base Statistics)
-----
Total
    
```

Octets	2207203840	2724068608
Packets	17243780	21281786
Level 1		
Octets	1324118016	1963396992
Packets	10344672	15339039
Level 2		
Octets	883085824	760671616
Packets	6899108	5942747
Level 3		
Octets	0	0
Packets	0	0
Level 4		
Octets	0	0
Packets	0	0
Level 5		
Octets	0	0
Packets	0	0
Level 6		
Octets	0	0
Packets	0	0
Level 7		
Octets	0	0
Packets	0	0
Level 8		
Octets	0	0
Packets	0	0
-----		
At time t = 11 sec (Mode: Rate)		
-----		
Total		
Octets	3909578	4825079
Packets	30544	37696
Bits	31276624	38600632
Utilization (% of port capacity)	0.36	0.44
Level 1		
Octets	2345386	3477723
Packets	18323	27170
Bits	18763088	27821784
Utilization (% of port capacity)	0.21	0.32
Level 2		
Octets	1564192	1347356
Packets	12220	10526
Bits	12513536	10778848
Utilization (% of port capacity)	0.14	0.12
Level 3		
Octets	0	0
Packets	0	0
Bits	0	0
Utilization (% of port capacity)	0.00	0.00
Level 4		
Octets	0	0
Packets	0	0
Bits	0	0
Utilization (% of port capacity)	0.00	0.00
Level 5		
Octets	0	0
Packets	0	0
Bits	0	0
Utilization (% of port capacity)	0.00	0.00
Level 6		
Octets	0	0
Packets	0	0
Bits	0	0
Utilization (% of port capacity)	0.00	0.00

Level 7		
Octets	0	0
Packets	0	0
Bits	0	0
Utilization (% of port capacity)	0.00	0.00
Level 8		
Octets	0	0
Packets	0	0
Bits	0	0
Utilization (% of port capacity)	0.00	0.00
=====		

## port

### Syntax

**port** *port-id* **egress** *network* **queue-group** *queue-group-name* **instance** *instance-id* [**interval** *seconds*]  
 [**repeat** *repeat*] [**absolute** | **rate**] [**arbiter** [**root** | *name*]]

### Context

[\[Tree\]](#) (monitor>qos>arbiter-stats port)

### Full Context

monitor qos arbiter-stats port

### Description

This command monitors arbiter statistics in an egress port queue group.

### Parameters

**port** *port-id*

<i>port-id</i>	<i>slot/mda/port</i> [ <i>.channel</i> ]		
	<i>eth-sat-id</i>	<i>esat-id/slot/port</i>	
		<i>esat</i>	keyword
		<i>id</i>	1 to 20
	<i>pxc-id</i>	<i>pxc-id.sub-port</i>	
		<i>pxc</i>	keyword
		<i>id</i>	1 to 64
		<i>sub-port</i>	a, b

**Values** slot/mda/port

**egress network**

Specifies statistics are for an egress network queue group.



**queue-group** *queue-group-name*

Specifies the name of the queue group up to 32 characters.

**instance** *instance-id*

Specifies the identification of a specific instance of the queue-group.

**Values** 1 to 65535

**interval** *seconds*

Configures the interval for each display in seconds.

**Default** 11 seconds

**Values** 11 to 60

**repeat** *repeat*

Configures how many times the command is repeated.

**Default** 10

**Values** 1 to 999

**absolute**

When the **absolute** keyword is specified, the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

**rate**

When the **rate** keyword is specified, the rate-per-second for each statistic is displayed.

**arbiter** *name*

Specify the name of the policer control policy arbiter.

**Values** An existing arbiter-name in the form of a string up to 32 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, etc.), the entire string must be enclosed within double quotes.

**root**

Specify the root arbiter.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

**port**

**Syntax**

**port** *port-id* **queue-group** *queue-group-name* [ **ingress** | **egress**] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**] [**access** | **network**] [**instance** *instance-id*]

**port** *port-id* **vport** *name* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

## Context

[\[Tree\]](#) (monitor>qos>scheduler-stats port)

## Full Context

monitor qos scheduler-stats port

## Description

This command enables port traffic monitoring.

## Parameters

### port *port-id*

Specifies the port ID.

Values		
	<i>slot/mdal/port</i> [ <i>.channel</i> ]	
	eth-sat-id	esat-id/slot/port
	esat	keyword
	<i>id</i>	1 to 20
	pxc-id	pxc-id.sub-port
	pxc	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b

### queue-group *queue-group-name*

Specifies the name of the queue group up to 32 characters.

### instance *instance-id*

Specifies the identification of a specific instance of the queue-group.

**Values** 1 to 65535

### ingress

Specifies statistics are for an ingress queue group.

### egress

Specifies statistics are for an egress queue group.

### interval *seconds*

Configures the interval for each display in seconds.

**Default** 11 seconds

**Values** 11 to 60

### repeat *repeat*

Configures how many times the command is repeated.

**Default** 10

**Values** 1 to 999

**absolute**

When the **absolute** keyword is specified, the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

**rate**

When the **rate** keyword is specified, the rate-per-second for each statistic is displayed.

**access**

Displays scheduler statistics applied on an access port.

**network**

Displays scheduler statistics applied on a network port.

**Platforms**

All

port

**Syntax**

**port** *port-id* **exp-secondary-shaper** *shaper-name* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**port** *port-id* **vport** *name* [**interval** *seconds*] [**repeat** *repeat*]

**Context**

[\[Tree\]](#) (monitor>qos port)

**Full Context**

monitor qos port

**Description**

This command monitors expanded secondary shaper statistics.

**Parameters**

***port-id***

Specifies the port ID.

**Values** *slot/mda/port*  
*esat-id/slot/port*  
*pxc-id.sub-port*

***shaper-name***

Displays statistics for the named exp secondary shaper.

### **seconds**

Configures the interval for each display in seconds.

**Values** 11 to 60

**Default** 11 seconds

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic.

### **vport name**

Displays statistics for the named Vport.

## **Platforms**

All

## **port**

## **Syntax**

```
port port-id queue-group queue-group-name [ egress ] [ network ] [ instance instance-id ] [ arbiter { name | root } ]
```

## **Context**

[\[Tree\]](#) (clear>qos>arbiter-stats port)

## **Full Context**

```
clear qos arbiter-stats port
```

## **Description**

This command clears the arbiter statistics per port.

## **Parameters**

### ***port-id***

Specifies the port ID.

**Values** *slot/mda/port* [*.channel*]

pxc-id	pxc-id.sub-port	
	pxc	keyword
	id	1 to 64
	sub-port	a, b

**queue-group-name**

Specifies the queue group name, up to 32 characters.

**network**

Clears the egress network queue group statistics.

**instance-id**

Specifies the ID of a specific instance for the queue group.

**Values** 1 to 65535

**name**

Specifies the arbiter name, up to 32 characters.

**root**

Specifies the arbiter root, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

port

**Syntax**

**port** *port-id* **queue-group** *queue-group-name* [**ingress** | **egress**] [**access** | **network**] [**instance** *instance-id*] [**scheduler** *scheduler-name*]

**port** *port-id* **vport** *name* [**scheduler** *scheduler-name*]

**Context**

[\[Tree\]](#) (clear>qos>scheduler-stats port)

**Full Context**

clear qos scheduler-stats port

**Description**

This command clears the scheduler statistics per port.

**Parameters**

**port-id**

Specifies the ID of a specific instance for the queue group.

**Values** *slot/mda/port [.channel]*

**queue-group-name**

Specifies the queue group name, up to 32 characters.

**ingress**

Clears statistics for the ingress queue group.

**egress**

Clears statistics for the egress queue group.

**access**

Clears scheduler statistics applied on an access port.

**network**

Clears scheduler statistics applied on a network port.

**instance-id**

Specifies the ID of a specific instance for the queue group.

**Values** 1 to 65535

**name**

Specifies the Vport name, up to 32 characters.

**scheduler-name**

Specifies the scheduler name, up to 32 characters.

**Platforms**

All

port

**Syntax**

**port** *port-id* **egress** [**network**] [**queue-group** *queue-group-name*] [**instance** *instance-id*] [**arbiter** *name* | *roof*]

**Context**

[\[Tree\]](#) (show>qos>arbiter-stats port)

**Full Context**

show qos arbiter-stats port

**Description**

This command displays the arbiter statistics per port.

## Parameters

### ***port-id***

Displays information about the specified port.

**Values** *slot/mda/port [.channel]*

### **network**

Displays arbiter statistics applied on a network port.

### ***queue-group-name***

Specifies the queue group name, up to 32 characters.

### ***name***

Specifies the arbiter name, up to 32 characters.

### ***root***

Specifies the arbiter root, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## port

## Syntax

**port** *port-id network egress queue-group group-name instance instance-id [ detail]*

## Context

[\[Tree\]](#) (show>qos>policer port)

## Full Context

show qos policer port

## Description

This command displays the policer statistics per port.

## Parameters

### ***port-id***

Displays information about the specified port.

**Values** *slot/mda/port*

### ***group-name***

Specifies the queue group name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## port

### Syntax

**port** *port-id* **vport** *name* [**scheduler** *scheduler-name*]

### Context

[\[Tree\]](#) (show>qos>scheduler-stats port)

### Full Context

show qos scheduler-stats port

### Description

This command displays the Vport scheduler stats.

### Parameters

#### *port-id*

Displays information for the specified port.

#### *name*

Displays information for the specified Vport.

#### *scheduler-name*

Displays information for the specified scheduler-name.

### Platforms

All

### Output

The following output is an example of Vport scheduler information.

#### Output Example

```
*A:BNG# show qos scheduler-stats port 1/1/1 vport "dslam1" scheduler "dslam-sched"
=====
Scheduler Stats
=====
Scheduler                               Forwarded Packets      Forwarded Octets
-----
Egress Schedulers
dslam-sched                             0                      0
=====
*A:BNG#
```

[Table 391: Vport Scheduler Statistics Field Descriptions](#) describes Vport scheduler statistics output fields.



Table 391: Vport Scheduler Statistics Field Descriptions

Field	Description
Scheduler	The scheduler name
Forwarded Packets	The number of forwarded packets, as determined by the subscriber ingress scheduler policy
Forwarded Octets	The number of forwarded octets, as determined by the subscriber ingress scheduler policy

## 18.67 port-db

### port-db

#### Syntax

**port-db sap** *sap-id*

**port-db sap** *sap-id* **detail**

**port-db sap** *sap-id* **group** *grp-ipv6-address*

**port-db sdp** *sdp-id:vc-id* [**detail**]

**port-db sdp** *sdp-id:vc-id* **group** *grp-ipv6-address*

#### Context

[\[Tree\]](#) (show>service>id>mld-snooping port-db)

#### Full Context

show service id mld-snooping port-db

#### Description

This command displays MLD snooping information related to a specific SAP.

#### Platforms

All

#### Output

The following output is an example of MLD snooping information for a specific SAP.

#### Output Example

```
*A:rbae_C# show service id 1 mld-snooping port-db sap 1/1/4
```

```
=====
```

```
MLD Snooping SAP 1/1/4 Port-DB for service 1
```

```

=====
Group Address
      Mode   Type   From-VPLS  Up Time           Expires   Num   MC
      Src    Stdb
-----
FF04::1
FF04::2      include dynamic local      0d 00:00:19      0s         1
-----
FF04::2      include dynamic local      0d 00:00:18      0s         1
-----
Number of groups: 2
=====
*A:rbae_C#
*A:rbae_C# show service id 1 mld-snooping port-db sap 1/1/4 detail
=====
MLD Snooping SAP 1/1/4 Port-DB for service 1
-----
MLD Group FF04::1
-----
Mode           : include           Type           : dynamic
Up Time        : 0d 00:00:33       Expires        : 0s
Compat Mode    : MLD Version 2
V1 Host Expires : 0s
MVR From-VPLS : local           MVR To-SAP     : local
MC Standby     : no
-----
Source Address
      Up Time      Expires  Type      Fwd/Blk
-----
2011::1
      0d 00:00:33  20s     dynamic   Fwd
-----
MLD Group FF04::2
-----
Mode           : include           Type           : dynamic
Up Time        : 0d 00:00:32       Expires        : 0s
Compat Mode    : MLD Version 2
V1 Host Expires : 0s
MVR From-VPLS : local           MVR To-SAP     : local
MC Standby     : no
-----
Source Address
      Up Time      Expires  Type      Fwd/Blk
-----
2011::1
      0d 00:00:33  20s     dynamic   Fwd
-----
Number of groups: 2
=====
*A:rbae_C#
    
```

## port-db

### Syntax

**port-db sap** *sap-id* [**detail**]

**port-db sap** *sap-id* **group** *grp-address*

**port-db sdp** *sdp-id:vc-id* [**detail**]

```
port-db sdp sdp-id:vc-id group grp-ip-address  
vxlan vtep ip-address vni vni-id
```

## Context

[\[Tree\]](#) (show>service>id>igmp-snooping port-db)

## Full Context

```
show service id igmp-snooping port-db
```

## Description

This command displays information on the IGMP snooping port database for the VPLS service.

## Parameters

### **grp-ip-address**

Displays the IGMP snooping port database for a specific multicast group address

### **sap-id**

Displays the IGMP snooping port database for a specific SAP

### **sdp-id**

Displays only IGMP snooping entries associated with the specified mesh SDP or spoke-SDP. For a spoke-SDP, the VC ID must be specified, for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

### **vc-id**

The virtual circuit ID on the SDP ID for which to display information

**Default** For mesh SDPs only, all VC IDs

**Values** 1 to 4294967295

### **grp-address**

Displays IGMP snooping statistics matching the specified group address.

### **ip-address**

Displays IGMP snooping statistics matching one particular source within the multicast group.

### **vxlan vtep ip-address vni <1..16777215>**

Displays the IGMP snooping entries associated with a specific VXLAN binding, given by the VXLAN Termination Endpoint (VTEP) and VXLAN Network Identifier (VNI).

### **vni**

The VXLAN Network Identifier (VNI) for which to display information.

**Values** 1 to 16777215

## Platforms

All

## Output

### Output Example

```
*A:ALA-1>show>service>id>snooping# port-db sap 1/1/2
=====
IGMP Snooping SAP 1/1/2 Port-DB for service 10
=====
Group Address      Mode      Type      Up Time      Expires      Num Sources
-----
239.0.0.1         include   dynamic   0d 00:04:44  0s           2
Group Address      Mode      Type      From-VPLS    Up Time      Expires      Num Src
-----
239.0.0.1         include   dynamic   Local        0d 00:04:44  0s           2
-----
Number of groups: 1
=====
*A:ALA-1>show>service>id>snooping#

*A:ALA-1>show>service>id>snooping# port-db sap 1/1/2 detail
=====
IGMP Snooping SAP 1/1/2 Port-DB for service 10
=====
IGMP Group 239.0.0.1
-----
Mode              : include              Type              : dynamic
Up Time           : 0d 00:04:57          Expires           : 0s
Compat Mode       : IGMP Version 3
V1 Host Expires   : 0s                   V2 Host Expires   : 0s
-----
Source Address    Up Time      Expires        Type          Fwd/Blk
-----
1.1.1.1          0d 00:04:57  20s           dynamic       Fwd
1.1.1.2          0d 00:04:57  20s           dynamic       Fwd
-----
Number of groups: 1
=====
*A:ALA-1>show>service>id>snooping#
```

Table 392: IGMP Snooping Port Database Fields describes the show output fields.

Table 392: IGMP Snooping Port Database Fields

Label	Description
Group Address	The IP multicast group address for which this entry contains information.
Mode	Specifies the type of membership reports received on the interface for the group.  In the include mode, reception of packets sent to the specified multicast address is requested only from those IP source addresses listed in the source-list parameter of the IGMP membership report.

Label	Description
	In the exclude mode, reception of packets sent to the specified multicast address is requested from all IP source addresses except those listed in the <b>source-list</b> parameter.
Type	Indicates how this group entry was learned. If this group entry was learned by IGMP, the value is set to dynamic. For statically configured groups, the value is set to static.
Compatibility mode	Specifies the IGMP mode. This is used for routers to be compatible with older-version routers. IGMPv3 hosts must operate in Version 1 and Version 2 compatibility modes. IGMPv3 hosts must keep state per local interface regarding the compatibility mode of each attached network. A host's compatibility mode is determined from the host compatibility mode variable which can be in one of three states: IGMPv1, IGMPv2 or IGMPv3. This variable is kept per interface and is dependent on the version of general queries heard on that interface as well as the older-version querier present timers for the interface.
V1 host expires	The time remaining until the local router will assume that there are no longer any IGMP Version 1 members on the IP subnet attached to this interface. Upon hearing any IGMPv1 membership report, this value is reset to the group membership timer. While this time remaining is non-zero, the local router ignores any IGMPv2 leave messages for this group that it receives on this interface.
V2 host expires	The time remaining until the local router will assume that there are no longer any IGMP Version 2 members on the IP subnet attached to this interface. Upon hearing any IGMPv2 membership report, this value is reset to the group membership timer. While this time remaining is non-zero, the local router ignores any IGMPv3 leave messages for this group that it receives on this interface.
Source address	The source address for which this entry contains information.
Up Time	The time since the source group entry was created.
Expires	The amount of time remaining before this entry will be aged out.
Number of sources	Indicates the number of IGMP group and source specific queries received on this SAP.
Forwarding/Blocking	Indicates whether this entry is on the forward list or block list.
Number of groups	Indicates the number of groups configured for this SAP.

## port-db

### Syntax

```
port-db sap sap-id [group grp-ip-address]  
port-db sap sap-id group grp-ip-address source src-ip-address  
port-db sdp sdp-id:vc-id [group grp-ip-address]  
port-db sdp sdp-id:vc-id group grp-ip-address source src-ip-address  
port-db [group grp-ip-address] vxlan vtep ip-address vni vni-id  
port-db group grp-ip-address source src-ip-address vxlan vtep ip-address vni vni-id
```

### Context

[\[Tree\]](#) (clear>service>id>igmp-snooping port-db)

### Full Context

```
clear service id igmp-snooping port-db
```

### Description

This command clears the information on the IGMP snooping port database for the VPLS service.

### Parameters

#### *sap-id*

Clears IGMP snooping statistics matching the specified SAP ID and optional encapsulation value

#### *sdp-id*

Clears only IGMP snooping entries associated with the specified mesh SDP or spoke-SDP. For a spoke-SDP, the VC ID must be specified, for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

#### *vc-id*

Clears information for the specified virtual circuit ID on the SDP ID

**Default** For mesh SDPs only, all VC IDs

**Values** 1 to 4294967295

#### *grp-ip-address*

Clears IGMP snooping statistics matching the specified group address

#### *src-ip-address*

Clears IGMP snooping statistics matching the specified particular source

#### **vxlan vtep** *ip-address* **vni** <1..16777215>

Clears the IGMP snooping statistics associated with a specific VXLAN destination given by the VXLAN Termination Endpoint (VTEP) and VXLAN Network Identifier (VNI).

### **vni-id**

Displays information for the specified VXLAN Network Identifier (VNI)

**Values** 1 to 16777215

### **Platforms**

All

## **port-db**

### **Syntax**

**port-db sap** *sap-id* [**group** *grp-ip-address*]

**port-db sap** *sap-id* **group** *grp-ip-address* **source** *src-ip-address*

**port-db sdp** *sdp-id:vc-id* [**group** *grp-ip-address*]

**port-db sdp** *sdp-id:vc-id* **group** *grp-ip-address* **source** *src-ip-address*

**port-db** [**group** *grp-ip-address*] **vxlan vtep** *ip-address* **vni** *vni-id*

**port-db group** *grp-ip-address* **source** *src-ip-address* **vxlan vtep** *ip-address* **vni** *vni-id*

### **Context**

[\[Tree\]](#) (clear>service>id>mld-snooping port-db)

### **Full Context**

clear service id mld-snooping port-db

### **Description**

This command clears MLD snooping port-db group data.

### **Parameters**

#### **sap-id**

Clears IGMP snooping statistics matching the specified SAP ID and optional encapsulation value

#### **sdp-id**

Clears only IGMP snooping entries associated with the specified mesh SDP or spoke-SDP. For a spoke-SDP, the VC ID must be specified, for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

#### **vc-id**

Clears information for the specified virtual circuit ID on the SDP ID

**Default** For mesh SDPs only, all VC IDs

**Values** 1 to 4294967295

***grp-ip-address***

Clears IGMP snooping statistics matching the specified group address

***src-ip-address***

Clears IGMP snooping statistics matching the specified particular source

***vxlان vtep ip-address vni <1..16777215>***

Clears the IGMP snooping statistics associated with a specific VXLAN destination given by the VXLAN Termination Endpoint (VTEP) and VXLAN Network Identifier (VNI).

***vni-id***

Displays information for the specified VXLAN Network Identifier (VNI)

**Values** 1 to 16777215

**Platforms**

All

## 18.68 port-forwarding-action

### port-forwarding-action

**Syntax**

**port-forwarding-action**

**Context**

[\[Tree\]](#) (tools>perform>nat port-forwarding-action)

**Full Context**

tools perform nat port-forwarding-action

**Description**

This command displays NAT port forwarding actions.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR



## 18.69 port-forwarding-entries

### port-forwarding-entries

#### Syntax

**port-forwarding-entries**

#### Context

[\[Tree\]](#) (show>service>nat port-forwarding-entries)

#### Full Context

show service nat port-forwarding-entries

#### Description

This command displays port forwarding entries.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of this command.

#### Output Example

```
*A:SR12_PPP0E# show service nat port-forwarding-entries
=====
NAT port forwarding entries
=====
Subscriber
iRtr      iAddress          prot iPort type
oRtr      oAddress          persist-id oPort expiry
=====
100      10.2.3.4          tcp  666  classic-lsn-sub
Base     10.0.0.6          N/A  666  N/A
100      10.2.3.4          udp  666  classic-lsn-sub
Base     10.0.0.6          N/A  666  N/A
-----
No. of entries: 2
=====
*A:SR12_PPP0E#
```

## 18.70 port-list

port-list

### Syntax

**port-list** [*port-list-name*]

**port-list** *port-list-name* **references**

### Context

**[Tree]** (show>filter>match-list port-list)

### Full Context

show filter match-list port-list

### Description

This command displays TCP/UDP/SCTP port values or ranges for match criteria in IPv4 and IPv6 ACL and CPM filter policies.

### Parameters

#### *port-list-name*

A string of up to 32 characters of printable ASCII characters. If special characters are used, the string must be enclosed within double quotes.

#### **references**

Displays the filter policies, policy entries and source/destination/port match type per entry referring to this match list.

### Platforms

All

port-list

### Syntax

**port-list**

**port-list** *port-list-name* [**association**]

### Context

**[Tree]** (show>qos>match-list port-list)

### Full Context

show qos match-list port-list

## Description

This command displays the list of configured QoS port lists or the details of a specific QoS port list together with the network QoS policies in which it is used and the entry number within that policy.

## Parameters

### *port-list-name*

Displays a port list, up to 32 characters of printable ASCII characters. If special characters are used, the string must be enclosed within double quotes.

### *association*

Displays the network QoS policy and entry number in which the specified port list is used.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of QoS port list information. [Table 393: Output Fields: show qos match-list port-list](#) describes the output fields.

### Output Example

```
*A:PE# show qos match-list port-list
=====
QoS Match Port List
=====
Port List Name          Description              Num Ports/Ranges
-----
portlist1                2
portlist2                2
-----
No. of Port-List: 2
=====
*A:PE#
*A:PE# show qos match-list port-list "portlist1"
=====
QoS Match Port List
=====
Port List Name          : portlist1
Description             : (Not Specified)
-----
Ports/Ranges
-----
80 90-100
-----
No. of Ports/Ranges : 2
=====
*A:PE#
*A:PE# show qos match-list port-list "portlist1" association
=====
QoS Match IP Prefix List
=====
Port List Name          : portlist1
Description             : (Not Specified)
-----
Ports/Ranges
-----
```

```

80 90-100
-----
No. of Ports/Ranges : 2
-----
Association
-----
QoS Policy ID                Criteria Entry
-----
10                (network-egress)  10                (destination-port)
=====
    
```

Table 393: Output Fields: show qos match-list port-list

Label	Description
Port List Name	Displays the port list name.
Description	Displays the port list description.
Num Ports/Range	Displays the number of ports or range of ports.
No. of Port-List	Displays the number of port lists.
QoS Policy ID	Displays the QoS policy ID.

## 18.71 port-map

### port-map

#### Syntax

**port-map** [*client-map-id*]

#### Context

[\[Tree\]](#) (show>system>satellite>eth-sat port-map)

[\[Tree\]](#) (show>system>satellite>tdm-sat port-map)

#### Full Context

show system satellite eth-sat port-map

show system satellite tdm-sat port-map

#### Description

This command displays information about configured satellites port maps.

## Parameters

### *client-map-id*

Specifies the client map to display. If a client port is associated with a resilient secondary uplink, a second line shows the current secondary uplink association.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

- show system satellite eth-sat port-map

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

- show system satellite tdm-sat port-map

## Output

The following output is an example of TDM satellite port map information.

### Output Example

```
A:admin@Dut-A# show system satellite eth-sat 1 port-map
=====
Satellite Port Mapping Information
=====
Client Port      Adm  Oper  Uplink Port      Adm  Oper  Host Port Adm  Oper  Act
-----
esat-1/1/1      Down Down  esat-1/1/u4      Up   Up    2/1/2      Up  Up    Y
                  esat-1/1/u2      Up   Up    1/1/2      Up  Up    N
esat-1/1/2      Down Down  esat-1/1/u4      Up   Up    2/1/2      Up  Up    Y
                  esat-1/1/u1      Up   Up    1/1/1      Up  Up    N
esat-1/1/3      Down Down  esat-1/1/u4      Up   Up    2/1/2      Up  Up    Y
                  esat-1/1/u1      Up   Up    1/1/1      Up  Up    N
esat-1/1/4      Down Down  esat-1/1/u4      Up   Up    2/1/2      Up  Up    Y
                  esat-1/1/u2      Up   Up    1/1/2      Up  Up    N
```

## 18.72 port-policy

### port-policy

#### Syntax

**port-policy**

**port-policy** *policy-name*

**port-policy** *policy-name* **associations**

#### Context

[\[Tree\]](#) (show port-policy)

#### Full Context

show port-policy

## Description

This command displays port policy information.

## Parameters

### *policy-name*

Specifies the port policy name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 18.73 port-queues

### port-queues

## Syntax

```
port-queues queue-depth [queue queue-id]
```

## Context

[\[Tree\]](#) (clear>port port-queues)

## Full Context

```
clear port port-queues
```

## Description

This command clears the port queues and queue depth.

## Parameters

### *queue-depth*

Clears the queue depth.

### *queue-id*

Specifies the queue ID.

**Values** 1 to 16

## Platforms

All

## port-queues

### Syntax

```
port-queues queue queue-id  
port-queues queue-depth [queue queue-id]
```

### Context

[\[Tree\]](#) (show>port port-queues)

### Full Context

```
show port port-queues
```

### Description

This command displays port queues, queue override, and queue depth information.

### Parameters

#### **queue-depth**

Displays queue depth information for the specified queue group queue.

#### **queue-id**

Specifies the queue ID.

**Values** 1 to 16

### Platforms

All

## 18.74 port-recorder

## port-recorder

### Syntax

```
port-recorder detail [flow-count flows] [byte-count kbytes] [isa mda-id / esa-vm-id] url file-url  
port-recorder status [isa mda-id/ esa-vm-id]  
port-recorder top granularity [max-count max-count] [isa mda-id]
```

### Context

[\[Tree\]](#) (tools>dump>app-assure>group port-recorder)

## Full Context

tools dump application-assurance group port-recorder

## Description

This command saves the port recorded by the tool into a file. The port-recorder is configured using debug commands.

## Parameters

### **flow-count** *flows*

Match ports with flow count greater than the specified value.

**Values** slot 1 to 4294967295

### **bytes-count** *kbytes*

Match ports with bytes count greater than the specified value.

**Values** slot 1 to 4294967295

### **status**

Displays the current status of the port-recorder with current-time, start-time, stop-time, sample-rates as well as number of bytes and flows for UDP and TCP traffic on the specified AA ISA card. The port-recorder is configured using debug commands.

### **top**

Displays by bytes or flows the top ports recorded by the tool on a particular AA ISA.

### **mda-id/esa-vm-id**

Specifies the AA ISA.

**Values** slot 1 to 10, mda 1 to 2

### **file-url**

Specifies the URL for the file to direct the port-recorder output to.

#### **Values**

**local-url:** <cf-flash-id>/[<file-path>]

200 chars max, including cf-flash-id

directory length 99 chars max each

**remote-url:** [{ftp://| tftp://}<login>:<pswd>@<remote-locn>]/[<file-path>]

255 chars max

directory length 99 chars max each

**remote-locn:** <hostname> | <ipv4-address> | <ipv6-address> ]

ipv4-address a.b.c.d

ipv6-address x:x:x:x:x:x:x[-interface]

x:x:x:x:x:d.d.d.d[-interface]



	x - [0..FFFF]H
	d - [0..255]D
interface	32 chars max, for link local addresses
cflash-id	flash slot ID

***granularity***

Specifies if the output is sorted by bytes or flows.

**Values** bytes, flows

***max-count***

Specifies the maximum number of values to display.

**Values** 1 to 25

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 18.75 port-scheduler

### port-scheduler

**Syntax**

**port-scheduler** [*interval seconds*] [*repeat repeat*] [*absolute*| *rate*]

**Context**

[\[Tree\]](#) (monitor>port port-scheduler)

**Full Context**

monitor port port-scheduler

**Description**

This command monitors port scheduler statistics.

**Parameters**

***seconds***

Configures the interval for each display in seconds.

**Values** 11 to 60

***repeat***

Configures how many times the command is repeated.

**Values** 1 to 999

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

## port-scheduler

**Syntax**

**port-scheduler statistics**

**Context**

[\[Tree\]](#) (clear>port port-scheduler)

**Full Context**

clear port port-scheduler

**Description**

This command clears port scheduler statistics.

**Parameters**

**statistics**

Clears port scheduler statistics.

**Platforms**

All

## port-scheduler

**Syntax**

**port-scheduler statistics**

**Context**

[\[Tree\]](#) (show>lag port-scheduler)

**Full Context**

show lag port-scheduler

### Description

This command displays port scheduler policy information applied to the LAG.

### Parameters

#### statistics

Displays statistics for the port scheduler policy applied to the LAG.

### Platforms

All

port-scheduler

### Syntax

**port-scheduler statistics**

### Context

[\[Tree\]](#) (show>port port-scheduler)

### Full Context

show port port-scheduler

### Description

This command displays port schedule policy information applied to the port.

### Parameters

#### statistics

Displays port schedule policy statistics.

### Platforms

All

## 18.76 port-scheduler-policy

port-scheduler-policy

### Syntax

**port-scheduler-policy** [*port-scheduler-policy-name*] [ **association**]

**port-scheduler-policy** *port-scheduler-policy-name* **network-policy** *network-queue-policy-name*

**port-scheduler-policy** *port-scheduler-policy-name* **sap-egress** *policy-id*

**port-scheduler-policy** *port-scheduler-policy-name* **scheduler-policy** *scheduler-policy-name*

**port-scheduler-policy** *port-scheduler-policy-name* **scheduler-policy** *scheduler-policy-name* **sap-egress**  
*policy-id*

## Context

[\[Tree\]](#) (show>qos port-scheduler-policy)

## Full Context

show qos port-scheduler-policy

## Description

This command displays port-scheduler policy information

## Parameters

### **port-scheduler-policy-name**

Displays information for the specified existing port scheduler policy.

### **association**

Displays associations related to the specified port scheduler policy.

### **network-policy network-queue-policy-name**

Displays information for the specified existing network queue policy.

### **sap-egress policy-id**

Displays information for the specified existing SAP egress policy.

### **scheduler-policy scheduler-policy-name**

Displays information for the specified existing scheduler policy.

## Platforms

All

## Output

The following output is an example of QoS port scheduler policy information, and [Table 394: Show QoS Port Scheduler Output Fields](#) describes the QoS port scheduler policy fields.

## Output Example

```
*A:Dut-R# show qos port-scheduler-policy p1
=====
QoS Port Scheduler Policy
=====
Policy-Name      : p1
HQoS Algorithm   : default
Max Rate         : max                Last changed      : 05/21/2007 10:39:15
Lvl1 PIR         : max                Lvl1 CIR          : max
Lvl2 PIR         : max                Lvl2 CIR          : max
Lvl3 PIR         : max                Lvl3 CIR          : max
Lvl4 PIR         : max                Lvl4 CIR          : max
Lvl5 PIR         : max                Lvl5 CIR          : max
Lvl6 PIR         : max                Lvl6 CIR          : max
Lvl7 PIR         : max                Lvl7 CIR          : max
Lvl8 PIR         : max                Lvl8 CIR          : max
Orphan Lvl       : default            Orphan Weight     : default
```

```
Orphan CIR-Lvl      : default          Orphan CIR-Weight : default
=====
QoS Port Scheduler Policy
=====
Policy-Name        : p1
-----
Associations
-----
- Port : 5/1/1
=====
*A:Dut-R#
```

The following configuration displays **dist-lag-rate-shared** and **percent-rate** for level, **group** and **max-rate** in a port-scheduler-policy.

```
*B:vineshDut-A>config>qos>port-sched-plcy# info
-----
dist-lag-rate-shared
  max-rate percent 30.00
group "test" create
  percent-rate 20.00 cir 20.00
exit
level 1 percent-rate 10.00 percent-cir 10.00
level 2 percent-rate 20.00 percent-cir 20.00
level 3 percent-rate 30.00 percent-cir 30.00
level 4 percent-rate 40.00 percent-cir 40.00
level 5 percent-rate 50.00 percent-cir 50.00
level 6 percent-rate 60.00 percent-cir 60.00
level 7 percent-rate 70.00 percent-cir 70.00
level 8 percent-rate 80.00 percent-cir 80.00
```

### Overrides

```
*B:vineshDut-A>config>port# info
-----
ethernet
  mode access
  egress-scheduler-policy "psp2"
  egress-scheduler-override create
    max-rate percent 50.00
    level 1 percent-rate 10.00 percent-cir 10.00
    level 2 percent-rate 20.00 percent-cir 20.00
    level 3 percent-rate 30.00 percent-cir 30.00
    level 4 percent-rate 40.00 percent-cir 40.00
    level 5 percent-rate 50.00 percent-cir 50.00
    level 6 percent-rate 60.00 percent-cir 60.00
    level 7 percent-rate 70.00 percent-cir 70.00
    level 8 percent-rate 80.00 percent-cir 80.00
  exit
  autonegotiate limited
exit
no shutdown
-----
```

The following output is an example of **port-scheduler-policy** Dist Lag Rate and percent parameters.

```
*B:vineshDut-A>config>port# /show qos port-scheduler-policy "psp2"
=====
QoS Port Scheduler Policy
```

```

=====
Policy-Name      : psp2
Description     : (Not Specified)
HQ05 Algorithm  : default
Max Rate        : max                Max Rate Percent : 30.00
Dist LAG Rate   : True                Last changed     : 07/16/2014 21:31:51
Group          : test
Group PIR       : max                Group CIR        : max
Group PIR Percent : 20.00           Group CIR Percent : 20.00

Lvl1 PIR        : max                Lvl1 CIR         : max
Lvl1 PIR Percent : 10.00           Lvl1 CIR Percent : 10.00
Lvl2 PIR        : max                Lvl2 CIR         : max
Lvl2 PIR Percent : 20.00           Lvl2 CIR Percent : 20.00
Lvl3 PIR        : max                Lvl3 CIR         : max
Lvl3 PIR Percent : 30.00           Lvl3 CIR Percent : 30.00
Lvl4 PIR        : max                Lvl4 CIR         : max
Lvl4 PIR Percent : 40.00           Lvl4 CIR Percent : 40.00
Lvl5 PIR        : max                Lvl5 CIR         : max
Lvl5 PIR Percent : 50.00           Lvl5 CIR Percent : 50.00
Lvl6 PIR        : max                Lvl6 CIR         : max
Lvl6 PIR Percent : 60.00           Lvl6 CIR Percent : 60.00
Lvl7 PIR        : max                Lvl7 CIR         : max
Lvl7 PIR Percent : 70.00           Lvl7 CIR Percent : 70.00
Lvl8 PIR        : max                Lvl8 CIR         : max
Lvl8 PIR Percent : 80.00           Lvl8 CIR Percent : 80.00
Orphan Lvl     : default            Orphan Weight    : default
Orphan CIR-Lvl : default            Orphan CIR-Weight : default
=====
Part of show port Output
-----
Egr Port Sched Override
-----
Max Rate        : max*                Max Rate Percent : 50.00
Lvl1 PIR        : max*                Lvl1 CIR         : max*
Lvl1 PIR Percent : 10.00           Lvl1 CIR Percent : 10.00
Lvl2 PIR        : max*                Lvl2 CIR         : max*
Lvl2 PIR Percent : 20.00           Lvl2 CIR Percent : 20.00
Lvl3 PIR        : max*                Lvl3 CIR         : max*
Lvl3 PIR Percent : 30.00           Lvl3 CIR Percent : 30.00
Lvl4 PIR        : max*                Lvl4 CIR         : max*
Lvl4 PIR Percent : 40.00           Lvl4 CIR Percent : 40.00
Lvl5 PIR        : max*                Lvl5 CIR         : max*
Lvl5 PIR Percent : 50.00           Lvl5 CIR Percent : 50.00
Lvl6 PIR        : max*                Lvl6 CIR         : max*
Lvl6 PIR Percent : 60.00           Lvl6 CIR Percent : 60.00
Lvl7 PIR        : max*                Lvl7 CIR         : max*
Lvl7 PIR Percent : 70.00           Lvl7 CIR Percent : 70.00
Lvl8 PIR        : max*                Lvl8 CIR         : max*
Lvl8 PIR Percent : 80.00           Lvl8 CIR Percent : 80.00
* means the value is inherited
-----
    
```

Table 394: Show QoS Port Scheduler Output Fields

Label	Description
Policy Name	Displays the port scheduler policy name.

Label	Description
HQOS Algorithm	Displays the port scheduler H-QoS algorithm used to calculate the operational rates for the children connected to the port scheduler.
Max Rate	Displays the explicit maximum frame-based bandwidth limit of this port scheduler.
Lvlx PIR	Displays the total bandwidth limit, PIR, for the specified priority level.
Lvlx CIR	Displays the within-CIR bandwidth limit for the specified priority level.
Orphan Lvl	Displays above-CIR port priority of orphaned queues and scheduler.
Orphan Weight	Displays the weight of orphaned queues and schedulers that are above-CIR.
Orphan CIR-Lvl	Displays the port priority of orphaned queues and schedulers that are within-CIR.
Orphan CIR-Weight	Displays the weight of orphaned queues and schedulers that are within-CIR.
Associations	Displays associations related to the specified port scheduler policy.
Mode	Displays the port scheduler policy mode (STRICT, RR, WRR, WDRR).
Accounting	Displays whether the accounting mode is frame-based or packet-based
Last Changed	Displays the last time the configuration changed.
Queue #	Displays the weight of the queue if configured.

## 18.77 port-topology

### port-topology

#### Syntax

**port-topology** [uni-dir]

#### Context

**[Tree]** (show>system port-topology)

## Full Context

```
show system port-topology
```

## Description

This command generates a listing of the internal connections within the router. These include connections to satellite ports. Use of the **uni-dir** keyword will list each connection twice; once for each direction.

## Parameters

### uni-dir

Specifies to list each direction as a separate row.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of port topology information.

### Output Example

```
*A:Dut-A# show system port-topology
=====
Port Topology
=====
Port Far-end
Id Port Id
-----
esat-1/1/u1 1/1/1
esat-1/1/u2 1/1/2
esat-1/1/u3 1/2/1
esat-1/1/u4 1/2/2
esat-20/1/u1 1/1/3
esat-20/1/u2 1/2/3
esat-20/1/u3 2/1/3
esat-20/1/u4 2/2/3
-----
No. of Number of port-topology associations: 8
=====
```

## 18.78 port-tree

```
port-tree
```

## Syntax

```
port-tree port-id
```

## Context

[\[Tree\]](#) (show port-tree)



## Full Context

show port-tree

## Description

This command displays the tree for SONET/SDH or TDM ports/channels WAN PHY mode (xgig wan) Ethernet ports.

## Parameters

### *port-id*

Specifies the physical port ID.

**Values** slot/mda/port [.channel]

[Table 395: Port ID Values](#) describes the port ID values.

Table 395: Port ID Values

Product	Slot	MDA	Port	Values
7750 SR-12	1 to 10	1, 2	1 to 60 (depending on the MDA type)	—
7750 SR-7	1 to 5	1, 2		—
7950 XRS	1 to 20	—		—
7450 ESS-7	—	—		1 to 4
7450 ESS-12	—	—		1 to 10
<b>Channelized MDAs</b>				
CHOC12-SFP	—	—	—	slot/mda/port. [1 to 4] . [1 to 3] . [1 to 28] . [..24] For example, 7/2/1.1.1.28.24
CHOC3-SFP	—	—	—	slot/mda/port. [1 to 3] . [1 to 28] . [..24] For example, 7/2/1.1.28.24
DS3	—	—	—	slot/mda/port. [1 to 28] . [..24] For example, 7/1/1.1.1

## Platforms

All

## Output

The following output is an example of port information, and [Table 396: Output Fields: show port-tree <port-id>](#) describes the output fields.

**Output Example: show port-tree <port-id>**

```
A:ALA-48>config# show port-tree 7/1/1
  ifIndex  type, sonet-sdh-index (* = provisioned)
=====
119570432  Port, N/A *
656441345  DS3, none *
656441405  DS1, 1 *
656441430  DS1, 2
656441455  DS1, 3
656441480  DS1, 4
656441505  DS1, 5
656441530  DS1, 6
656441555  DS1, 7
656441580  DS1, 8
656441605  DS1, 9
656441630  DS1, 10
656441655  DS1, 11
656441680  DS1, 12
656441705  DS1, 13
656441730  DS1, 14
656441755  DS1, 15
656441780  DS1, 16
656441805  DS1, 17
656441830  DS1, 18
656441855  DS1, 19
656441880  DS1, 20
656441905  DS1, 21
656441930  DS1, 22
656441980  DS1, 24
656442005  DS1, 25
656442030  DS1, 26
656442055  DS1, 27
656442080  DS1, 28
A:ALA-48>config#
```

*Table 396: Output Fields: show port-tree <port-id>*

Label	Description
ifIndex	Displays the interface index number which reflects its initialization sequence.
type	Specifies the type.
sonet-sdh-index	Specifies the sonet-sdh-index.
*	When an asterisk (*) is displayed after the sonet-sdh-index, the port/channel is provisioned.

## 18.79 port-xc

```
port-xc
```

### Syntax

```
port-xc [pxc pxc-id]
```

### Context

[\[Tree\]](#) (show>port-xc port-xc)

### Full Context

```
show port-xc
```

### Description

This command displays information about Port Cross-Connect (PXC) information.

### Parameters

*pxc-id*

Specifies the PXC ID.

**Values** 1 to 64

### Platforms

All

### Output

The following output is an example of PXC information, and [Table 397: Output Fields: port-xc](#) describes the output fields.

### Output Example

```
*A:cses-B04# show port-xc
=====
Port Cross-Connect Information
=====
PXC   Admin   Oper    Port      Description
Id    State   State   Id
-----
1     Up      Up      1/x1/1/c1/1  fpe based pw-ports
2     Up      Up      1/x1/1/c2/1  (Not Specified)
3     Up      Up      1/x1/1/c3/1  (Not Specified)
4     Up      Up      1/x1/1/m1/1  (Not Specified)
5     Up      Up      1/x1/1/m1/1  (Not Specified)
-----
No. of PXCs: 5
=====
```

```
*A:cses-B04#

show port 1/1/m1/1
=====
Anchor
=====
Description      : Anchor
Interface        : 1/1/m1/1
FP Number        : 1                MAC Chip Number : 1
Licensed         : Yes
Admin State      : down
Oper State       : up
IfIndex          : 1610903569
Last State Change : 12/07/2020 07:02:21
Ing. Pool % Rate : 100                Egr. Pool % Rate : 100
Ing. Acc. Wt.    : 50                  Egr. Acc. Wt.    : 50
Ing. Net. Wt.    : 50                  Egr. Net. Wt.    : 50
=====
```

Table 397: Output Fields: port-xc

Label	Description
PXC Id	The port cross-connect identifier
Admin State	The administrative state of the port
Oper State	The operational state of the port
Port Id	The port ID
Description	The PXC ID description
Interface	The port ID
MAC Chip Number	The MAC chip number for this port
Licensed	Yes — The port is licensed and can be used in a service configuration. No — The port is unlicensed and may not be used
IfIndex	Displays the interface's index number which reflects its initialization sequence.
Last State Change	Displays the last time the operational status of the port changed state.
Ing. Pool % Rate	The increment or decrement of the active bandwidth associated with the ingress port. This active bandwidth affects the amount of ingress buffer space managed by the port.
Egr. Pool % Rate	The increment or decrement of the active bandwidth associated with the egress port. This active bandwidth

Label	Description
	affects the amount of egress buffer space managed by the port.

## 18.80 positive-app-id

### positive-app-id

#### Syntax

**positive-app-id**

#### Context

**[Tree]** (tools>dump>app-assure>group>ipassist positive-app-id)

#### Full Context

tools dump application-assurance group ip-identification-assist positive-app-id

#### Description

This command dumps the statistics related to IP identification assist for top applications using IP addresses learned from successfully classified traffic using the AA application database.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

Use this command to dump the statistics.

```
tools dump application-assurance group "1" ip-identification-assist positive-app-id isa "1/1"
```

#### Output Example

```
=====
Application-Assurance ip-identification-assist positive-app-id:
=====
group                1
ip-identification-assist  no shutdown
passive-dns          enabled
positive-app-id      enabled
-----

isa 1/1
-----
Application Name          IPs in cache  IPs added    IPs updated
IP lookups found         Parent Application Name
-----
```

"Application1"		0	0	0
"Application2"	0 "ParentApplication1"	0	0	0
"Application3"	0 "ParentApplication1"	0	0	0
"Application4"	0 "ParentApplication1"	0	0	0
"Application5"	0 "ParentApplication2"	0	0	0
"Application6"	0 "ParentApplication3"	0	0	0
"Application7"	0 "ParentApplication3"	0	0	0
"Application8"	0 "ParentApplication2"	0	0	0
"Application9"	0 "ParentApplication4"	0	0	0
"Application10"	0 "ParentApplication5"	0	0	0
"Application11"	0 "ParentApplication6"	0	0	0
"Application12"	0 "ParentApplication7"	0	0	0
"Application13"	0 "ParentApplication2"	0	0	0
"Application14"	0 "ParentApplication3"	0	0	0
-----				
TOTAL (14 applications)		0	0	0
	0			
=====				

## 18.81 post-policer-mapping

### post-policer-mapping

#### Syntax

**post-policer-mapping** [*post-policer-name*] [ **association** | **detail** ]

#### Context

[\[Tree\]](#) (show>qos post-policer-mapping)

#### Full Context

show qos post-policer-mapping

#### Description

This command displays information about post-policer mapping policies. Omitting the policy name will list all policies.

## Parameters

### ***post-policer-name***

Specifies the name of the post-policer mapping policy, up to 32 characters.

### **association**

Displays the entities associated with the post-policer mapping policy.

### **detail**

Displays the detailed information for the post-policer mapping policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## Output

This section shows output example for post-policer mapping.

### Output Example

```
*A:PE# show qos post-policer-mapping
=====
Post Policer Mapping Summary
=====
Policy                Description
-----
ppm1                  Map FC EF/exceed to BE/out
-----
Policies
=====
*A:PE#

*A:PE# show qos post-policer-mapping detail
=====
Post Policer Mapping Information
=====
Policy Name           : ppm1
Description            : Map FC EF/exceed to BE/out
-----
Post Policer Mapping Information
-----
FC          Profile      Mapped-FC      Mapped-Profile
-----
ef          Exceed       be              Out
-----
-----
Sap Egress Associations
-----
Policy ID
-----
10
-----
=====
```

## 18.82 power-management

### power-management

#### Syntax

**power-management** [*zone*]

#### Context

[\[Tree\]](#) (show>chassis power-management)

#### Full Context

show chassis power-management

#### Description

This command shows the power management requirement and utilization information.

#### Parameters

##### **zone**

The chassis power zone.

**Values** 1, 2

#### Platforms

7750 SR-12e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of power management information, and [Table 398: Output Fields: show chassis power-management](#) describes the output fields.

#### Output Example: show chassis power-management

```
*A:Dut-A# show chassis power-management
=====
Chassis Information
=====
Power Management Information

Power Management Mode           : basic
Power Safety Level              : 100%
Power Safety Alert              : 0 watts
Power-Zone                     : 1
Number of PEQs                 : 12

PEQ number                      : 1
  PEQ Equipped Type             : apeq-dc-2000
  PEQ Provisioned Type         : apeq-dc-2000
  Status                       : shutdown
```



```
Input Feed Status      : input B down
Hardware Data
  Part number          : 3HE07114AARA01
  CLEI code            : IPUPAJHUAA
  Serial number        : NS1250G0116
  Manufacture date     : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state  : down
  Operational state    : down
  Time of last boot    : 2014/01/07 11:01:44
  Current alarm state  : alarm active

PEQ number             : 2
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : (Not Specified)
Status                 : up
Input Feed Status     : input B down
Hardware Data
  Part number          : 3HE07114AARA01
  CLEI code            : IPUPAJHUAA
  Serial number        : NS1249G0022
  Manufacture date     : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state  : up
  Operational state    : unprovisioned
  Time of last boot    : 2014/01/07 11:01:44
  Current alarm state  : alarm active

PEQ number             : 3
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : apeq-dc-2000
Status                 : up
Input Feed Status     : input B down
Hardware Data
  Part number          : 3HE07114AARA01
  CLEI code            : IPUPAJHUAA
  Serial number        : NS1250G0141
  Manufacture date     : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state  : up
  Operational state    : up
  Time of last boot    : 2014/01/07 11:01:44
  Current alarm state  : alarm active

PEQ number             : 4
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : apeq-dc-2000
Status                 : up
Input Feed Status     : input B down
Hardware Data
  Part number          : 3HE07114AARA01
  CLEI code            : IPUPAJHUAA
  Serial number        : NS1249G0201
  Manufacture date     : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state  : up
  Operational state    : up
  Time of last boot    : 2014/01/07 11:01:44
  Current alarm state  : alarm active
```

```
PEQ number : 5
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : apeq-dc-2000
Status : up
Input Feed Status : input B down
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1250G0123
  Manufacture date : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state : up
  Time of last boot : 2014/01/07 11:01:44
  Current alarm state : alarm active

PEQ number : 6
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : apeq-dc-2000
Status : up
Input Feed Status : input B down
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1250G0061
  Manufacture date : 12182012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state : up
  Time of last boot : 2014/01/07 11:01:44
  Current alarm state : alarm active

PEQ number : 7
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : apeq-dc-2000
Status : up
Input Feed Status : input B down
Hardware Data
  Part number : 3HE07114AARB01
  CLEI code : IPUPAJHUAA
  Serial number : NS13226A310
  Manufacture date : 06042013
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 82-0532-02
  Administrative state : up
  Operational state : up
  Time of last boot : 2014/01/07 11:01:44
  Current alarm state : alarm active

PEQ number : 8
PEQ Equipped Type : apeq-dc-2000
PEQ Provisioned Type : apeq-dc-2000
Status : up
Input Feed Status : input B down
Hardware Data
  Part number : 3HE07114AARA01
  CLEI code : IPUPAJHUAA
  Serial number : NS1250G0152
  Manufacture date : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
```

```
Operational state      : up
Time of last boot     : 2014/01/07 11:01:44
Current alarm state   : alarm active

PEQ number            : 9
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : apeq-dc-2000
Status                : up
Input Feed Status     : input B down
Hardware Data
  Part number         : 3HE07114AARA01
  CLEI code           : IPUPAJHUAA
  Serial number       : NS1250G0122
  Manufacture date    : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state   : up
  Time of last boot   : 2014/01/07 11:01:44
  Current alarm state : alarm active

PEQ number            : 10
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : apeq-dc-2000
Status                : up
Input Feed Status     : input B down
Hardware Data
  Part number         : 3HE07114AARA01
  CLEI code           : IPUPAJHUAA
  Serial number       : NS1250G0146
  Manufacture date    : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state   : up
  Time of last boot   : 2014/01/07 11:01:44
  Current alarm state : alarm active

PEQ number            : 11
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : apeq-dc-2000
Status                : up
Input Feed Status     : input B down
Hardware Data
  Part number         : 3HE07114AARA01
  CLEI code           : IPUPAJHUAA
  Serial number       : NS1249G0202
  Manufacture date    : 12202012
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number : 8205320107
  Administrative state : up
  Operational state   : up
  Time of last boot   : 2014/01/07 11:01:44
  Current alarm state : alarm active

PEQ number            : 12
PEQ Equipped Type     : apeq-dc-2000
PEQ Provisioned Type  : apeq-dc-2000
Status                : up
Input Feed Status     : input B down
Hardware Data
  Part number         : 3HE07114AARA01
  CLEI code           : IPUPAJHUAA
  Serial number       : NS1250G0115
```

```
Manufacture date      : 12202012
Manufacturing deviations : (Not Specified)
Manufacturing assembly number : 8205320107
Administrative state  : up
Operational state    : up
Time of last boot    : 2014/01/07 11:01:44
Current alarm state  : alarm active
=====
```

```
PCM number           : 1
  PCM Equipped Type  : not detected
  PCM Provisioned Type : (not provisioned)
PCM number           : 2
  PCM Equipped Type  : not detected
  PCM Provisioned Type : (not provisioned)

PCM number           : 3
  PCM Equipped Type  : not detected
  PCM Provisioned Type : (not provisioned)
PCM number           : 4
  PCM Equipped Type  : not detected
  PCM Provisioned Type : (Not provisioned)
PCM number           : 5
  PCM Equipped Type  : not detected
  PCM Provisioned Type : (Not provisioned)
PCM number           : 6
  PCM Equipped Type  : indeterminate
  PCM Provisioned Type : (Not provisioned)
PCM number           : 7
  PCM Equipped Type  : indeterminate
  PCM Provisioned Type : (Not provisioned)
PCM number           : 8
  PCM Equipped Type  : indeterminate
  PCM Provisioned Type : (Not provisioned)
PCM number           : 9
  PCM Equipped Type  : indeterminate
  PCM Provisioned Type : dual-pcm
PCM number           : 10
  PCM Equipped Type  : quad-pcm
  PCM Provisioned Type : (Not provisioned)
Power-Zone           : 1
Status               : up
Input Feed Status    : power to all inputs
```

```
Hardware Data
  Part number        : Sim Part#
  CLEI code          : Sim CLEI
  Serial number      : peq-12
  Manufacture date   : 01012003
  Manufacturing deviations : Sim MfgDeviation peq-12
  Manufacturing assembly number : 01-2345-67
```

```
PCM number           : 11
  PCM Equipped Type  : quad-pcm
  PCM Provisioned Type : quad-pcm
Power-Zone           : 1
Status               : up
Input Feed Status    : power to all inputs
Hardware Data
  Part number        : Sim Part#
```

```
CLEI code           : Sim CLEI
Serial number       : peq-12
Manufacture date    : 01012003
Manufacturing deviations : Sim MfgDeviation peq-12
Manufacturing assembly number : 01-2345-67

PCM number          : 12
PCM Equipped Type   : quad-pcm
PCM Provisioned Type : quad-pcm
Power-Zone          : 1
Status              : up
Input Feed Status   : power to all inputs
Hardware Data
  Part number        : Sim Part#
  CLEI code          : Sim CLEI
  Serial number      : peq-12
  Manufacture date   : 01012003
  Manufacturing deviations : Sim MfgDeviation peq-12
  Manufacturing assembly number : 01-2345-67
```

-----  
Chassis Control Module (CCM) Information

```
CCM Slot            : A
Equipped            : yes
Hardware Data
  Part number        : Sim Part#
  CLEI code          : Sim CLEI
  Serial number      : ccm-1
  Manufacture date   : 01012003
  Manufacturing deviations : Sim MfgDeviation ccm-1
  Manufacturing assembly number : 01-2345-67
  Administrative state : up
  Operational state   : up
  Temperature         : -128C
  Temperature threshold : 75C
  Time of last boot   : N/A
  Current alarm state : alarm cleared
Hardware Resources (Power-Zone 1)
  Voltage
    Minimum          : 52.80 Volts (09/10/2014 18:09:58)
    Current           : 52.80 Volts
    Peak              : 52.80 Volts (09/10/2014 18:09:58)
  Wattage
    Minimum          : 20.00 Watts (09/10/2014 18:09:58)
    Current           : 20.00 Watts
    Peak              : 20.00 Watts (09/10/2014 18:09:58)
    Max Required     : 22.00 Watts
  Amperage
    Minimum          : 0.38 Amps (09/10/2014 18:09:58)
    Current           : 0.38 Amps
    Peak              : 0.38 Amps (09/10/2014 18:09:58)

CCM Slot            : B
Equipped            : yes
Hardware Data
  Part number        :
  CLEI code          :
  Serial number      :
  Manufacture date   :
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number :
  Administrative state : up
```

```

Operational state      : up
Temperature           : 0C
Temperature threshold : 75C
Time of last boot     : N/A
Current alarm state   : alarm cleared
Hardware Resources (Power-Zone 1)
Voltage
  Minimum             :      0.00 Volts (N/A)
  Current             :      0.00 Volts
  Peak                :      0.00 Volts (N/A)
Wattage
  Minimum             :      0.00 Watts (N/A)
  Current             :      0.00 Watts
  Peak                :      0.00 Watts (N/A)
  Max Required        :      0.00 Watts
Amperage
  Minimum             :      0.00 Amps (N/A)
  Current             :      0.00 Amps
  Peak                :      0.00 Amps (N/A)
=====
Chassis 2 Detail
=====
    
```

Table 398: Output Fields: show chassis power-management

Label	Description
Power Management Mode	Specifies the configured power management mode: None, Basic, or Advanced.
Power Safety Level	Specifies the configured Power Safety Level, which is a percentage of the worst case power consumption level.
Power Safety Alert	Specifies the configured power level in watts, which causes the system to raise an alarm if the available power level drops below a set level.
Power-Zone	Specifies the chassis power zone.
Number of PEQs	Specifies the total number of APEQs installed.
PEQ number:	Specifies the APEQ to which the information is associated
PEQ Equipped Type	Specifies the APEQ type installed.
PEQ Provisioned Type	Specifies the APEQ type provisioned.
Status	Specifies the APEQ status.
Input Feed Status	Specifies the feed status. This field indicates that power is detected on all inputs or lists the inputs where no power is detected.
PCM Equipped Type	Indicates the type of PCM installed in the specified PIM or PCM slot: <ul style="list-style-type: none"> <li>• (empty slot)</li> <li>• indeterminate</li> <li>• quad-pcm</li> </ul>

Label	Description
	Some PCMs can only be verified for presence based on power available at the associated APEQ. These are indicated as indeterminate.  When the equipped type is quad-pcm, the additional fields of Power-Zone, Status, and Input Feed Status and Hardware Data are displayed.
PCM Provisioned Type	One of the following types: <ul style="list-style-type: none"> <li>• (not specified)</li> <li>• dual-pcm</li> <li>• quad-pcm</li> </ul> For a given PCM number, if the equipped type is not detected and the provisioned type is not specified, the PCM is not displayed.
<b>Hardware Data:</b>	
Part number	The APEQ part number.
CLEI code	The APEQ CLEI code.
Serial number	The APEQ serial number.
Manufacture date	The date the APEQ was manufactured.
Manufacturing deviations	Specifies any manufacturing deviations.
Manufacturing assembly number	The APEQ assembly number.
Administrative state	Specifies the administrative state of the APEQ.
Operational state	Specifies the operational state of the APEQ.
Time of last boot	Indicates the time stamp of the last system restart.
Current alarm state	Indicates the current alarm state.

## 18.83 power-module

### power-module

#### Syntax

**power-module** [*power-module-id*] [**detail**]

#### Context

[\[Tree\]](#) (show>chassis>power-shelf power-module)

## Full Context

show chassis power-shelf power-module

## Description

This command displays the power-module.

## Parameters

### *power-module-id*

Specifies the power module ID.

**Values** 1 to 10

### *detail*

Displays detailed power module information.

## Platforms

7750 SR-s

## Output

The following output is an example of a power module

### Output Example: show chassis power-shelf power-module

```
A:DUT-A# show chassis power-shelf 1 power-module
=====
Power Shelf Summary
=====
Slot      Provisioned Type      Admin Operational   Zone  Input Output
         Equipped Type (if diff) State State
-----
1         ps-a10-shelf-dc      up   up                1     80A   on
=====

Power Module Summary
=====
Slot      Provisioned Type      Admin Operational   Input  Zone
         Equipped Type (if diff) State State           A  B
-----
1         ps-a-dc-6000         up   up                Y  Y    1
2         ps-a-dc-6000         up   up                Y  Y    1
=====

A:DUT-A# show chassis power-shelf 2 power-module
=====
Power Shelf Summary
=====
Slot      Provisioned Type      Admin Operational   Zone  Input Output
         Equipped Type (if diff) State State
-----
2         ps-b10-shelf-ac/hv   up   up                1     N/A   on
=====

Power Module Summary
=====
Slot      Provisioned Type      Admin Operational   Input  Zone
         Equipped Type (if diff) State State           A  B
-----
```



```

1      ps-b-ac/hv-6000      up   up       Y Y    1
2      ps-b-ac/hv-6000      up   down     N N    1
5      ps-b-ac/hv-6000      up   down     N N    1
=====
A:DUT-A#
A:DUT-A# show chassis power-shelf 2 power-module 1 detail
=====
Power Shelf Summary
=====
Slot      Provisioned Type      Admin Operational   Zone  Input Output
          Equipped Type (if diff) State State              Mode
-----
2         ps-b10-shelf-ac/hv      up   up              1     N/A   on
=====
Power Module 1 detail
=====
Slot      Provisioned Type      Admin Operational   Input  Zone
          Equipped Type (if diff) State State              A  B
-----
1         ps-b-ac/hv-6000      up   up              Y  Y    1
Power Module Specific Data
  Output Status          : ok
Hardware Data
  Platform type          : N/A
  Part number            : 3HE11183AARA0101
  CLEI code              : GA-PSUHVDC
  Serial number          : NS1736W0096
  Manufacture date       : 09152017
  Manufacturing deviations : For Internal Use Only
  Manufacturing assembly number :
  Time of last boot      : 2020/07/07 11:13:07
  Current alarm state    : alarm cleared
=====
A:DUT-A# show chassis power-shelf 2 detail
=====
Power Shelf 2 detail
=====
Slot      Provisioned Type      Admin Operational   Zone  Input Output
          Equipped Type (if diff) State State              Mode
-----
2         ps-b10-shelf-ac/hv      up   up              1     N/A   on
Power Shelf Specific Data
  Description            : (Not Specified)
  Controller serial number : NS1745W0143
Hardware Data
  Platform type          : N/A
  Part number            : 3HE11179AARA
  CLEI code              : T-REX-HVDC
  Serial number          : NS1747W0004
  Manufacture date       : 12212017
  Manufacturing deviations : For Internal Use Only
  Manufacturing assembly number :
  Time of last boot      : 2020/07/07 11:13:07
  Current alarm state    : alarm cleared
Hardware Data
  Platform type          : N/A
  Part number            : 3HE11181AARA
  CLEI code              : M-SHELFCON
  Serial number          : NS1745W0143
  Manufacture date       : 11152017
  Manufacturing deviations : For Internal Use Only
  Manufacturing assembly number :
  Time of last boot      : 2020/07/07 11:13:07
  
```

```
Current alarm state      : alarm cleared
=====
A:DUT-A#
```

## power-module

### Syntax

**power-module** *power-module-id*

### Context

[\[Tree\]](#) (clear>chassis>power-shelf power-module)

### Full Context

clear chassis power-shelf power-module

### Description

This command toggles the output power of the power module, turning it off for two seconds then on. This procedure can be used to clear an ovSD (output voltage shutdown) fault. The only alternative method to clear the ovSD fault is to physically remove the power module from the power shelf and re-insert. Running this command does not clear the latched faults.

### Parameters

***power-module-id***

Specifies the power-module ID.

**Values** 1 to 10

### Platforms

7750 SR-s

## power-module

### Syntax

**power-module** *power-module-id* **telemetry**

### Context

[\[Tree\]](#) (tools>dump>power-shelf power-module)

### Full Context

tools dump power-shelf power-module

## Description

This command displays the specified power module information, telemetry, and fault data. When a fault is no longer active it remains marked as a latched fault for tracking purposes until manually cleared.

## Parameters

### *power-module-id*

Displays information about the specified power-module ID.

**Values** 1 to 10

### *telemetry*

Displays telemetry and fault data for the specified power module.

## Platforms

7750 SR-s

## power-module

## Syntax

**power-module** *power-module-id* **clear-faults**

## Context

[\[Tree\]](#) (tools>perform>power-shelf power-module)

## Full Context

tools perform power-shelf power-module

## Description

This command clears all the latched faults for inactive faults.

## Parameters

### *power-module-id*

Specifies power-module ID.

**Values** 1 to 10

### **clear-faults**

Clears fault conditions against the specified power module.

## Platforms

7750 SR-s

## 18.84 power-shelf

### power-shelf

#### Syntax

```
power-shelf [power-shelf-id] [ detail ] [ chassis chassis-name ]
```

#### Context

[\[Tree\]](#) (show>chassis power-shelf)

#### Full Context

```
show chassis power-shelf
```

#### Description

This command displays the power shelf.

#### Parameters

##### *power-shelf-id*

Specifies the power shelf ID.

**Values** 1 to 2

##### *detail*

Displays detailed power shelf information.

##### *chassis-name*

Specifies the chassis name, up to 256 characters maximum.

#### Platforms

7750 SR-s

#### Output

The following output is an example of power shelves

##### Output Example: show chassis power-shelf

```
A:DUT-A# show chassis power-shelf
=====
Power Shelf Summary
=====
Slot      Provisioned Type      Admin Operational  Zone  Input Output
          Equipped Type (if diff) State State              Mode
-----
1         ps-a10-shelf-dc      up   up                1     80A   on
2         ps-b10-shelf-ac/hv   up   up                1     N/A   on
=====
```

## power-shelf

### Syntax

**power-shelf** *power-shelf-id*

### Context

[\[Tree\]](#) (clear>chassis power-shelf)

### Full Context

clear chassis power-shelf

### Description

Commands in this context clear power-shelf components.

### Parameters

***power-shelf-id***

Specifies power-shelf ID.

**Values** 1 to 2

### Platforms

7750 SR-s

## power-shelf

### Syntax

**power-shelf** *power-shelf-id*

### Context

[\[Tree\]](#) (tools>dump power-shelf)

### Full Context

tools dump power-shelf

### Description

Commands in this context display power-shelf information.

### Parameters

***power-shelf-id***

Displays information about the specified power-shelf.

**Values** 1, 2

## Platforms

7750 SR-s

## power-shelf

### Syntax

**power-shelf** *power-shelf-id*

### Context

[\[Tree\]](#) (tools>perform power-shelf)

### Full Context

tools perform power-shelf

### Description

Commands in this context configure power-shelf parameters.

### Parameters

***power-shelf-id***

Specifies the power-shelf ID.

**Values** 1, 2

## Platforms

7750 SR-s

## 18.85 ppp

## ppp

### Syntax

**ppp**

### Context

[\[Tree\]](#) (show>service>id ppp)

### Full Context

show service id ppp

## Description

Commands in this context display service PPP information for the specified service.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
ppp
```

## Syntax

```
ppp
```

## Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>loc-user-db ppp)

## Full Context

```
tools perform subscriber-mgmt local-user-db ppp
```

## Description

This command provides the tools to control PPPoE entries in the local user database.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
ppp
```

## Syntax

```
ppp
```

## Context

[\[Tree\]](#) (show>call-trace ppp)

## Full Context

```
show call-trace ppp
```

## Description

Commands in this context display Point-to-Point Protocols (PPP) call trace information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.86 ppp-policy

### ppp-policy

#### Syntax

**ppp-policy** [*ppp-policy-name* [**association**]]

#### Context

[\[Tree\]](#) (show>subscr-mgmt ppp-policy)

#### Full Context

show subscriber-mgmt ppp-policy

#### Description

This command displays PPP policy information.

#### Parameters

##### *ppp-policy-name*

Specifies an existing PPP policy.

##### **association**

Displays the object the PPP policy is associated.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of PPP policy information and [Table 399: Show Subscriber Management PPP Policy Field Descriptions](#) describes the field descriptions.

*Table 399: Show Subscriber Management PPP Policy Field Descriptions*

Label	Description
Description	Specifies the description.
Last Mgmt Change	Specifies the date and time of the last management change.
PPP-mtu	Specifies the configured maximum PPP MTU size.
Force PPP-mtu >1492	Specifies if PPPoE MRU negotiations greater than 1492 bytes are enabled without receiving a "PPP-Max-Payload" tag in the PADI/PADR client message (Yes, No).
Keepalive Interval	Specifies the keepalive interval, in seconds.



Label	Description
Keepalive Multiplier	Specifies the keepalive multiplier value.
Disable AC-Cookies	Specifies to disable AC cookies (Yes, No).
PADO Delay	Specifies the PADO delay value, in milliseconds.
Max Sessions-Per-Mac	Specifies the maximum number of sessions with the same client MAC address and active on the same SAP or MSAP.
Reply-On-PADT	Specifies to reply on PADT (Yes, No).
Allow Same CID	Specifies to allow the same Circuit ID for multiple PPPoE sessions with the same client MAC address and active on the same SAP when using the internal DHCPv4 client for IPv4 address allocation (Yes, No).
Re-establish Session	Specifies if a PPPoE session can be re-established upon receiving a PADR from a PPPoE client that previously disconnected without sending a PADT and for which a session is still active in the BNG (PADR, Disabled).
PPP-Authentication	Specifies the PPP Authentication method (PAP, CHAP, pref-PAP or pref-CHAP).
PPP-CHAP Challenge	Specifies the minimum and maximum length of a PPP CHAP Challenge (in bytes).
PPP-Init-Delay (ms)	Specifies the delay in milliseconds for sending an LCP configure request after the discovery phase.
IPCP negotiate subnet	Specifies if IPCP subnet negotiation is enabled (Yes, No).
Unique SIDs-Per-SAP	Specifies the unique SIDs per-SAP (disabled, per-capture-sap, per-msap).
Reject-Disabled-Ncp	Specifies if an LCP protocol reject is sent for an unconfigured NCP (Yes, No).
Ignore-Magic-Num	Specifies if the LCP peer magic number should be ignored (Yes, No).
Session Timeout	Specifies the session timeout value in seconds (default = unlimited).
SID Allocation	Specifies the PPPoE Session ID allocation method (sequential, random).
PADO AC-Name	Specifies the AC name used in PADO messages.
Default username	Specifies the default username for PAP or CHAP authentication.
Default password	Specifies the default PAP password (Specified, Not specified).

Label	Description
Accept MRRU	Specifies to accept MRRU (true, false).
Request short sequence nr.	Specifies to request short sequence numbers (true, false).
Endpoint class	Specifies the endpoint class (null, ipv4-address or mac-address).
Endpoint address	Specifies the endpoint IPv4 or mac address.

### Output Example

```
# /show subscriber-mgmt ppp-policy "ppp-policy-1"
=====
PPP Policy "ppp-policy-1"
=====
Description          : (Not Specified)
Last Mgmt Change    : 01/09/2020 16:40:19
PPP-mtu              : N/A
Keepalive Interval  : 30s
Disable AC-Cookies  : No
Max Sessions-Per-Mac : 1
Allow Same CID      : No
PPP-Authentication  : pref-CHAP
PPP-Init-Delay (ms) : 0
Unique SIDs-Per-SAP : disabled
Ignore-Magic-Num    : No
SID Allocation       : sequential
PADO AC-Name        : (Not Specified)
Default username    : (Not Specified)
Default password    : (Not Specified)
Force PPP-mtu >1492 : No
Keepalive Multiplier : 3
PADO Delay          : 0msec
Reply-On-PADT       : No
Re-establish Session : Disabled
PPP-CHAP Challenge  : 32 - 64
IPCP negotiate subnet : No
Reject-Disabled-Ncp : No
Session Timeout     : unlimited
-----
PPP Custom Options
-----
Protocol Number Value
-----
No options configured.
-----
MLPPP
-----
Accept MRRU          : false
Request short sequence nr. : false
Endpoint class       : null
Endpoint address     : (Not Specified)
-----
```

## ppp-policy

### Syntax

**ppp-policy** [*ppp-policy-name* [association]]

### Context

**[Tree]** (show>subscr-mgmt ppp-policy)

## Full Context

```
show subscriber-mgmt ppp-policy
```

## Description

This command displays PPP policy information.

## Parameters

### *ppp-policy-name*

Specifies an existing PPP policy.

### **association**

Displays the object the PPP policy is associated.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of PPP policy information and [Table 400: Show Subscriber Management PPP Policy Field Descriptions](#) describes the field descriptions.

*Table 400: Show Subscriber Management PPP Policy Field Descriptions*

Label	Description
Description	Specifies the description.
Last Mgmt Change	Specifies the date and time of the last management change.
PPP-mtu	Specifies the configured maximum PPP MTU size.
Force PPP-mtu >1492	Specifies if PPPoE MRU negotiations greater than 1492 bytes are enabled without receiving a "PPP-Max-Payload" tag in the PADI/PADR client message (Yes, No).
Keepalive Interval	Specifies the keepalive interval, in seconds.
Keepalive Multiplier	Specifies the keepalive multiplier value.
Disable AC-Cookies	Specifies to disable AC cookies (Yes, No).
PADO Delay	Specifies the PADO delay value, in milliseconds.
Max Sessions-Per-Mac	Specifies the maximum number of sessions with the same client MAC address and active on the same SAP or MSAP.
Reply-On-PADT	Specifies to reply on PADT (Yes, No).
Allow Same CID	Specifies to allow the same Circuit ID for multiple PPPoE sessions with the same client MAC address and active on the same SAP when using the internal DHCPv4 client for IPv4 address allocation (Yes, No).

Label	Description
Re-establish Session	Specifies if a PPPoE session can be re-established upon receiving a PADR from a PPPoE client that previously disconnected without sending a PADT and for which a session is still active in the BNG (PADR, Disabled).
Max Sessions-Per-Cid	Specifies the maximum number of sessions with the same Agent Circuit ID that can be active on the same SAP or MSAP.
Allow No CID	Specifies whether PPPoE sessions without an Agent Circuit ID to be established on a SAP or MSAP with a <b>max-sessions-per-cid</b> limit configured (Yes, No).
PPP-Authentication	Specifies the PPP Authentication method (PAP, CHAP, pref-PAP or pref-CHAP).
PPP-CHAP Challenge	Specifies the minimum and maximum length of a PPP CHAP Challenge (in bytes).
PPP-Init-Delay (ms)	Specifies the delay in milliseconds for sending an LCP configure request after the discovery phase.
IPCP negotiate subnet	Specifies if IPCP subnet negotiation is enabled (Yes, No).
Unique SIDs-Per-SAP	Specifies the unique SIDs per-SAP (disabled, per-capture-sap, per-msap).
Reject-Disabled-Ncp	Specifies if an LCP protocol reject is sent for an unconfigured NCP (Yes, No).
Ignore-Magic-Num	Specifies if the LCP peer magic number should be ignored (Yes, No).
Session Timeout	Specifies the session timeout value in seconds (default = unlimited).
SID Allocation	Specifies the PPPoE Session ID allocation method (sequential, random).
PADO AC-Name	Specifies the AC name used in PADO messages.
Default username	Specifies the default username for PAP or CHAP authentication.
Default password	Specifies the default PAP password (Specified, Not specified).
Accept MRRU	Specifies to accept MRRU (true, false).
Request short sequence nr.	Specifies to request short sequence numbers (true, false).
Endpoint class	Specifies the endpoint class (null, ipv4-address or mac-address).
Endpoint address	Specifies the endpoint IPv4 or mac address.

## Output Example

```
# /show subscriber-mgmt ppp-policy "ppp-policy-1"
=====
PPP Policy "ppp-policy-1"
=====
Description          : (Not Specified)
Last Mgmt Change     : 01/09/2020 16:40:19
PPP-mtu              : N/A
Keepalive Interval   : 30s
Disable AC-Cookies   : No
Max Sessions-Per-Mac : 1
Allow Same CID       : No
Max Sessions-Per-Cid : 10
Allow No CID         : No
PPP-Authentication   : pref-CHAP
PPP-Init-Delay (ms)  : 0
Unique SIDs-Per-SAP  : disabled
Ignore-Magic-Num     : No
SID Allocation       : sequential
PADO AC-Name         : (Not Specified)
Default username     : (Not Specified)
Default password     : (Not Specified)
Force PPP-mtu >1492 : No
Keepalive Multiplier : 3
PADO Delay           : 0msec
Reply-On-PADT        : No
Re-establish Session : Disabled
PPP-CHAP Challenge   : 32 - 64
IPCP negotiate subnet : No
Reject-Disabled-Ncp  : No
Session Timeout      : unlimited
-----
PPP Custom Options
-----
Protocol Number Value
-----
No options configured.
-----
MLPPP
-----
Accept MRRU          : false
Request short sequence nr. : false
Endpoint class       : null
Endpoint address     : (Not Specified)
-----
```

## 18.87 pppoe

pppoe

### Syntax

pppoe

### Context

[\[Tree\]](#) (show>service>id pppoe)

### Full Context

show service id pppoe

## Description

Commands in this context display PPPoE information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
pppoe
```

## Syntax

```
pppoe
```

## Context

[\[Tree\]](#) (clear>call-trace pppoe)

## Full Context

```
clear call-trace pppoe
```

## Description

Commands in this context clear the PPPoE job.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
pppoe
```

## Syntax

```
pppoe
```

## Context

[\[Tree\]](#) (clear>service>id pppoe)

## Full Context

```
clear service id pppoe
```

## Description

Commands in this context clear PPPoE-related data for the specified service.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.88 pppoe-client

### pppoe-client

#### Syntax

```
pppoe-client [brg-id brg-ident]  
pppoe-client [brg-id brg-ident] [ detail]  
pppoe-client [brg-id brg-ident] [ statistics]
```

#### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg pppoe-client)

#### Full Context

```
show subscriber-mgmt vrgw brg pppoe-client
```

#### Description

This command displays information of PPPoE clients started by the vRGW.

#### Parameters

##### **brg-ident**

Specifies the string identifying the BRG, up to 32 characters maximum.

##### **detail**

Displays detailed PPPoE client information.

##### **statistics**

Displays PPPoE client statistics.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of PPPoE client information.

#### Output Example

```
Node# show subscriber-mgmt vrgw brg pppoe-client  
=====
```

PPPoE Clients			
=====			
Id	Svc-Id	MAC	PPPoE-Sid
	IP-Address		Up-Time
		IPv6-Prefix	
00:0c:29:00:00:10			
20	10.255.1.16	2001:db8:101::/64	0d 00:00:05

```
-----
```

```
-----  
No. of PPPoE Clients: 1  
=====
```

```
Node# show subscriber-mgmt vrgw brg pppoe-client detail  
=====
```

```
PPPoE Clients detail  
=====
```

```
Id : 00:0c:29:00:00:10  
Service Id : 20  
MAC Address : 00:0c:29:00:00:10  
Up Time : 0d 00:00:27  
Policy : clnt_plcy  
PPPoE Session Id : 1  
Service Name : (Not Specified)  
AC MAC : 08:06:ff:00:00:02  
AC Name : BNG  
LCP State : opened  
IPCP State : opened  
IPv6CP State : opened  
Local Magic Num : 201366211  
Remote Magic Num : 374038276  
Remote MRU : 1492  
PPP User-Name : 00:0c:29:00:00:10  
PPP Auth-Protocol : none  
IP Address : 10.255.1.16  
Primary DNS : 1.1.1.1  
Secondary DNS : 1.1.2.2  
Primary NBNS : 2.2.1.1  
Secondary NBNS : 2.2.2.2  
IPv6 Intf Id : 02:0c:29:ff:fe:00:00:10  
IPv6 Prefix : 2001:db8:101::/64  
Prefix Timeout : 86375  
Primary IPv6 DNS : 2001:db8:ddd:1::1  
Secondary IPv6 DNS : 2001:db8:ddd:2::1  
-----
```

```
No. of PPPoE Clients: 1  
=====
```

```
Node# show subscriber-mgmt vrgw brg pppoe-client statistics  
=====
```

```
PPPoE Clients statistics  
=====
```

```
Id : 00:0c:29:00:00:10  
Packet Type      Received      Transmitted  
PADI             -             1  
PADO             1             -  
PADR             -             1  
PADS             1             -  
PADT             0             0  
Session         9             9  
LCP Echo Request  
(since restart) 0             21  
LCP Echo Reply  
(since restart) 21            0  
RS              -             1  
RA              1             -  
DHCP6 Info      -             1  
DHCP6 Reply     1             -  
-----
```

```
Rx Dropped      : 0  
-----
```

```
No. of PPPoE Clients: 1  
=====
```



## pppoe-client

### Syntax

**pppoe-client**

### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>brg pppoe-client)

### Full Context

tools perform subscriber-mgmt vrgw brg pppoe-client

### Description

This command enables tools for controlling PPPoE clients in a BRG.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.89 pppoe-client-policy

## pppoe-client-policy

### Syntax

**pppoe-client-policy** [*name*]  
**pppoe-client** *name* **associations**

### Context

[\[Tree\]](#) (show>subscr-mgmt pppoe-client-policy)

### Full Context

show subscriber-mgmt pppoe-client-policy

### Description

This command displays PPPoE client policy information.

### Parameters

#### *name*

Specifies the PPPoE client policy name, up to 32 characters.

#### **associations**

Displays information associated with the policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.90 prefix-ext-stats

### prefix-ext-stats

#### Syntax

**prefix-ext-stats** *ipv6-address/prefix-length*

**prefix-ext-stats pool** *pool-name*

#### Context

[\[Tree\]](#) (show>router>dhcp6>server prefix-ext-stats)

#### Full Context

show router dhcp6 local-dhcp-server prefix-ext-stats

#### Description

This command displays extended statistics per DHCPv6 prefix in local DHCPv6 server.

The following statistics are included in output:

- The number of stable leases in the prefix
- The number of provisioned /64 address block in the prefix
- The number of used /64 address block in the prefix
- The number of free /64 address block in the prefix
- The percentage of used address (with /64 address block)
- The percentage of free address (with /64 address block)

For each statistic (except for Provisioned Addresses), there is current value and peak value, peak value is the highest value since prefix creation or last reset via command **clear>router *rt-id*>dhcp6>local-dhcp-server *svr-name*>prefix-ext-stats**.

When the **pool** parameter is used, the statistics of each prefix in the pool are displayed.

#### Parameters

***ipv6-address/prefix-length***

Specifies the IPv6 prefix.

***pool-name***

The name of DHCPv6 local server pool.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of prefix extended stats information.

### Output Example

```

show router 500 dhcp6 local-dhcp-server "d6" prefix-ext-stats 2001:ABCD::/62
=====
Extended statistics for prefix 2001:ABCD::/62
=====
-----
Current      Peak      TimeStamp
-----
Local:
Failover Oper State   Active
Stable Leases        0          0      01/07/2013 19:54:52
Provisioned Blks     4
Used Blks            0          0      01/07/2013 19:54:52
Free Blks            4          4      01/07/2013 19:54:52
Used Pct              0          0      01/07/2013 19:54:52
Free Pct             100       100    01/07/2013 19:54:52
Last Reset Time      01/07/2013 19:54:52
-----
Number of entries    1
=====
    
```

[Table 401: Prefix Extended Statistics Field Descriptions](#) describes extended prefix statistics output fields.

*Table 401: Prefix Extended Statistics Field Descriptions*

Field	Description
Current	The current extended prefix statistics
Peak	The peak value since the last reset
TimeStamp	The date and time of the last reset
Failover Oper State	The operational state of the DHCP specified prefix
Stable Leases	The number of stable leases
Provisioned Blks	The number of provisioned blocks
Used Blks	The number of used blocks
Free Blks	The number of free blocks
Used Pct	The percentage of extended prefixes in use
Free Pct	The percentage of free prefixes in use
Last Reset Time	The date and time of the last reset
Number of entries	The total number of entries

## prefix-ext-stats

### Syntax

**prefix-ext-stats** *ipv6-address/prefix-length*

**prefix-ext-stats** pool *pool-name*

### Context

[\[Tree\]](#) (clear>router>dhcp6>server prefix-ext-stats)

### Full Context

clear router dhcp6 local-dhcp-server prefix-ext-stats

### Description

This command reset the begin time of peak values in output of the **show router *rt-id* dhcp6 local-dhcp-server *svr-name* prefix-ext-stats** command/

### Parameters

***ipv6-address/prefix-length***

Clears information about the specified IPv6 prefix.

***pool-name***

Clears information about the specified local DHCPv6 server pool name.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.91 prefix-label

## prefix-label

### Syntax

**prefix-label**

### Context

[\[Tree\]](#) (show>router>bgp prefix-label)

### Full Context

show router bgp prefix-label

## Description

This command displays BGP Prefix label information.

## Platforms

All

## 18.92 prefix-sids

### prefix-sids

## Syntax

```
prefix-sids [ipv4-unicast | ipv6-unicast | ipv4-multicast | ipv6-multicast | mt mt-id-number] [ ip-prefix[/prefix-length]] [sid sid] [ adv-router system-id | hostname] [srms | no-srms] [algo algo-id]
```

## Context

[\[Tree\]](#) (show>router>isis prefix-sids)

## Full Context

```
show router isis prefix-sids
```

## Description

This command displays IS-IS prefix SIDs.

## Parameters

### ipv4-unicast

Displays IPv4 unicast parameters.

### ipv6-unicast

Displays IPv6 unicast parameters.

### ipv4-multicast

Displays IPv4 multicast parameters.

### ipv6-multicast

Displays IPv6 multicast parameters.

### mt-id-number

Displays multi-topology parameters.

**Values** 0, 2, 3, 4

### ip-prefix[/prefix-length]

Displays information about the specified IP prefix and length.

**Values** ipv4-prefix:

- a.b.c.d (host bits must be 0)

- ipv4-prefix-length: [0 to 32]
- ipv6-prefix-length:
  - x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x: [0 to FFFF]H
  - d: [0 to 255]D
  - ipv6-prefix-length: [0 to 128]

**sid**

Displays information for the specific segment identifier.

**Values** 0 to 524287

**system-id | hostname**

Displays information for the specific IS-IS advertising router. Host name up to 38 characters.

**srms**

Displays parameters filtered for segment routing mapping server.

**no-srms**

Displays parameters filtered for no segment routing mapping server.

**algo-id**

Displays information for the specified algorithm.

**Values** 0 to 255

**Platforms**

All

**Output**

The following outputs are examples of prefix SID information, and [Table 402: IS-IS Prefix SIDs Output Fields](#) describes the output fields.

**Output Example**

```
*A:Dut-B#
*A:Dut-B# show router isis 0 prefix-sids
=====
Rtr Base ISIS Instance 0 Prefix/SID Table
=====
Prefix                SID      Lvl/Typ  SRMS   AdvRtr
                    Algo    MT      Flags
-----
10.20.1.1/32          1        2/Int.   N      Dut-A
                    0        0        NnP
10.20.1.1/32          11       2/Int.   N      Dut-A
                    128     0        NnP
10.20.1.2/32          2        1/Int.   N      Dut-B
                    0        0        NnP
10.20.1.2/32          12       1/Int.   N      Dut-B
                    128     0        NnP
```

```

10.20.1.2/32          2          2/Int.    N    Dut-B
                    0          0          NnP
10.20.1.2/32          12         2/Int.    N    Dut-B
                    128         0          NnP
10.20.1.3/32          3          2/Int.    N    Dut-C
                    0          0          NnP
10.20.1.3/32          13         2/Int.    N    Dut-C
                    128         0          NnP
10.20.1.4/32          4          2/Int.    N    Dut-B
                    0          0          RNnP
10.20.1.4/32          14         2/Int.    N    Dut-B
                    128         0          RNnP
10.20.1.4/32          4          1/Int.    N    Dut-D
                    0          0          NnP
10.20.1.4/32          14         1/Int.    N    Dut-D
                    128         0          NnP
-----
No. of Prefix/SIDs: 12 (4 unique)
-----
SRMS : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
      S    = SRMS prefix SID is selected to be programmed
Flags: R    = Re-advertisement
      N    = Node-SID
      nP   = no penultimate hop POP
E      = Explicit-Null
      V    = Prefix-SID carries a value
      L    = value/index has local significance
=====

*A:Dut-B# show router isis 0 prefix-sids algo 128
=====
Rtr Base ISIS Instance 0 Prefix/SID Table
=====
Prefix                SID          Lvl/Typ    SRMS    AdvRtr
                    Algo        MT         Flags
-----
10.20.1.1/32          11          2/Int.    N        Dut-A
                    128         0          NnP
10.20.1.2/32          12          1/Int.    N        Dut-B
                    128         0          NnP
10.20.1.2/32          12          2/Int.    N        Dut-B
                    128         0          NnP
10.20.1.3/32          13          2/Int.    N        Dut-C
                    128         0          NnP
10.20.1.4/32          14          2/Int.    N        Dut-B
                    128         0          RNnP
10.20.1.4/32          14          1/Int.    N        Dut-D
                    128         0          NnP
-----
No. of Prefix/SIDs: 6 (4 unique)
-----
SRMS : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
      S    = SRMS prefix SID is selected to be programmed
Flags: R    = Re-advertisement
      N    = Node-SID
      nP   = no penultimate hop POP
E      = Explicit-Null
      V    = Prefix-SID carries a value
      L    = value/index has local significance
=====
    
```

### Output Example

```

A:Dut-A>config>router# show router isis prefix-sids
=====
Rtr Base ISIS Instance 0 Prefix/SID Table
=====
Prefix                               SID      Lvl/Typ  SRMS  AdvRtr
                               Shared   MT      MT    Flags
-----
1.0.0.1/32                           4001     1/Int.   N     Dut-A
                               Yes      0       NnP
1.0.0.1/32                           4001     2/Int.   N     Dut-A
                               Yes      0       NnP
10.20.0.1/32                          301      1/Int.   N     Dut-A
                               No       0       NnP
10.20.0.1/32                          301      2/Int.   N     Dut-A
                               No       0       NnP
10.20.0.2/32                          402      1/Int.   N     Dut-B
                               N.A.    0       NnP
10.20.0.2/32                          402      2/Int.   N     Dut-B
                               N.A.    0       NnP
3ffe::100:1/128                       6001     1/Int.   N     Dut-A
                               Yes      0       NnP
3ffe::100:1/128                       6001     2/Int.   N     Dut-A
                               Yes      0       NnP
3ffe::a14:1/128                       401      1/Int.   N     Dut-A
                               No       0       NnP
3ffe::a14:1/128                       401      2/Int.   N     Dut-A
                               No       0       NnP
3ffe::a14:2/128                       402      1/Int.   N     Dut-B
                               N.A.    0       NnP
3ffe::a14:2/128                       402      2/Int.   N     Dut-B
                               N.A.    0       NnP
-----
No. of Prefix/SIDs: 12 (6 unique)
-----
SRMS:  Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
        S = SRMS prefix SID is selected to be programmed
Flags:  R = Re-advertisement
        N = Node-SID
        nP = no penultimate hop POP
        E = Explicit-Null
        V = Prefix-SID carries a value
        L = value/index has local significance
Shared: Yes = local shared Node-SID
        No = not a local shared Node-SID
        N.A. = not applicable for Remote prefix-sid
=====
*A:Dut-C#
    
```

Table 402: IS-IS Prefix SIDs Output Fields

Label	Description
Prefix	Displays the IP prefix for the SID
SID	Displays the SID value
Adv-Rtr	Displays the IP address of the advertised router



Label	Description
SRMS	Displays whether the prefix SID is advertised by the SR mapping server (Y or N) or selected to be programmed (S)
Flags	Displays the SID flags
No. of Prefix/SIDs	Displays the number of Prefix/SIDs

## prefix-sids

### Syntax

**prefix-sids** [*ip-prefix[/prefix-length]*] [ **sid** *sid*] [**adv-router** *router-id*] [ **algo** *algo-id*]

### Context

**[Tree]** (show>router>ospf prefix-sids)

### Full Context

show router ospf prefix-sids

### Description

This command displays OSPF prefix SIDs.

### Parameters

***ip-prefix[/prefix-length]***

Displays information about the specified IP prefix and length, up to 64 characters.

***sid***

Displays information for the specific segment identifier.

**Values** 0 to 524287

***router-id***

Displays information for the specific advertising router identified by its router identifier.

***algo-id***

Displays the algorithm identifier.

**Values** 0 to 255

### Platforms

All

### Output

The following outputs are examples of OSPF prefix SIDs information, and [Table 403: OSPF Prefix SIDs Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-F# show router ospf prefix-sids
=====
Rtr Base OSPFv2 Instance 0 Prefix-Sids
=====
Prefix                               Area          RtType        SID
                                   Adv-Rtr                               Flags
-----
1.0.11.1/32                          0.0.0.0      INTER-AREA    4
                                   10.20.1.2    NnP
1.0.11.1/32                          0.0.0.1      INTRA-AREA    4
                                   10.20.1.1    NnP
1.0.11.1/32                          0.0.0.1      INTRA-AREA    999
                                   10.20.1.3    NnPB
1.0.22.2/32                          0.0.0.0      INTER-AREA    5
                                   10.20.1.2    NnPA
1.0.22.2/32                          0.0.0.1      INTRA-AREA    5
                                   10.20.1.2    NnP
1.0.22.2/32                          0.0.0.1      INTRA-AREA    996
                                   10.20.1.6    NnPB
1.0.33.3/32                          0.0.0.0      INTER-AREA    0
                                   10.20.1.2    NnP
1.0.33.3/32                          0.0.0.1      INTRA-AREA    0
                                   10.20.1.3    NnP
1.0.33.3/32                          0.0.0.1      INTRA-AREA    998
                                   10.20.1.1    NnPB
1.0.44.4/32                          0.0.0.0      INTRA-AREA    1
                                   10.20.1.4    NnP
1.0.44.4/32                          0.0.0.0      INTRA-AREA    994
                                   10.20.1.5    NnPB
1.0.44.4/32                          0.0.0.1      INTER-AREA    1
                                   10.20.1.2    NnP
1.0.55.5/32                          0.0.0.0      INTRA-AREA    2
                                   10.20.1.5    NnP
1.0.55.5/32                          0.0.0.0      INTRA-AREA    995
                                   10.20.1.4    NnPB
1.0.55.5/32                          0.0.0.1      INTER-AREA    2
                                   10.20.1.2    NnP
1.0.66.6/32                          0.0.0.0      INTER-AREA    3
                                   10.20.1.2    NnP
1.0.66.6/32                          0.0.0.1      INTRA-AREA    3
                                   10.20.1.6    NnP
1.0.66.6/32                          0.0.0.1      INTRA-AREA    997
                                   10.20.1.2    NnPB
10.20.1.1/32                         0.0.0.0      INTER-AREA    10
                                   10.20.1.2    NnP
10.20.1.1/32                         0.0.0.1      INTRA-AREA    10
                                   10.20.1.1    NnP
10.20.1.2/32                         0.0.0.0      INTRA-AREA    11
                                   10.20.1.2    NnP
10.20.1.2/32                         0.0.0.1      INTER-AREA    11
                                   10.20.1.2    NnPA
10.20.1.3/32                         0.0.0.0      INTER-AREA    6
                                   10.20.1.2    NnP
10.20.1.3/32                         0.0.0.1      INTRA-AREA    6
                                   10.20.1.3    NnP
10.20.1.4/32                         0.0.0.0      INTRA-AREA    7
                                   10.20.1.4    NnP
10.20.1.4/32                         0.0.0.1      INTER-AREA    7
                                   10.20.1.2    NnP
10.20.1.5/32                         0.0.0.0      INTRA-AREA    8
                                   10.20.1.5    NnP
10.20.1.5/32                         0.0.0.1      INTER-AREA    8
```

```

10.20.1.6/32          10.20.1.2          NnP
                    0.0.0.0           INTRA-AREA        9
10.20.1.6/32          10.20.1.6          NnP
                    0.0.0.1           INTER-AREA        9
                    10.20.1.2          NnP
    
```

```

-----
No. of Prefix/SIDs: 30
SID Flags : N = Node-SID
            nP = no penultimate hop POP
            M = Mapping server
            E = Explicit-Null
            V = Prefix-SID carries a value
            L = value/index has local significance
            I = Inter Area flag
            A = Attached flag
            B = Backup flag
    
```

=====  
 \*A:Dut-F#

\*A:Dut-C# show router ospf prefix-sids sid 66

=====  
 Rtr Base OSPFv2 Instance 0 Prefix-Sids

Prefix	Area Adv-Rtr	RtType Active	SID Flags
10.20.1.6/32	0.0.0.0	INTER-AREA	66
	10.20.1.4	N	NnP
10.20.1.6/32	0.0.0.0	INTER-AREA	66
	10.20.1.5	Y	NnP
10.20.1.6/32	0.0.0.1	INTER-AREA	66
	10.20.1.2	N	NnP

```

-----
No. of Prefix/SIDs: 3
Flags: N = Node-SID
       nP = no penultimate hop POP
       M = Mapping server
       E = Explicit-Null
       V = Prefix-SID carries a value
       L = value/index has local significance
       I = Inter Area flag
       A = Attached flag
    
```

=====  
 \*A:Dut-C#

\*A:Dut-C>config>router>ospf3# show router ospf3 0 prefix-sids

=====  
 Rtr Base OSPFv3 Instance 0 Prefix-Sids

Prefix	Area Adv-Rtr	RtType SRMS	SID Flags
3ffe::100:b01/128	0.0.0.1	INTRA-AREA	4
	10.20.1.1	N	NnPA
3ffe::100:1602/128	0.0.0.1	INTRA-AREA	5
	10.20.1.2	N	NnPA
3ffe::100:2103/128	0.0.0.1	INTRA-AREA	0
	10.20.1.3	N	NnPA
3ffe::100:2c04/128	0.0.0.1	INTER-AREA	1
	10.20.1.2	N	NnP
3ffe::100:2c04/128	0.0.0.1	INTER-AREA	1
	10.20.1.6	N	NnP

```

3ffe::100:3705/128      0.0.0.1      INTER-AREA 2
                       10.20.1.2    N           NnP
3ffe::100:3705/128      0.0.0.1      INTER-AREA 2
                       10.20.1.6    N           NnP
3ffe::100:4206/128     0.0.0.1      INTRA-AREA 3
                       10.20.1.6    N           NnPA
3ffe::a14:101/128     0.0.0.1      INTRA-AREA 10
                       10.20.1.1    N           NnPA
3ffe::a14:102/128     0.0.0.1      INTER-AREA 11
                       10.20.1.2    N           NnPA
3ffe::a14:102/128     0.0.0.1      INTER-AREA 11
                       10.20.1.6    N           NnP
3ffe::a14:103/128     0.0.0.1      INTRA-AREA 6
                       10.20.1.3    N           NnPA
3ffe::a14:104/128     0.0.0.1      INTER-AREA 7
                       10.20.1.2    N           NnP
3ffe::a14:104/128     0.0.0.1      INTER-AREA 7
                       10.20.1.6    N           NnP
3ffe::a14:105/128     0.0.0.1      INTER-AREA 8
                       10.20.1.2    N           NnP
3ffe::a14:105/128     0.0.0.1      INTER-AREA 8
                       10.20.1.6    N           NnP
3ffe::a14:106/128     0.0.0.1      INTER-AREA 9
                       10.20.1.2    N           NnP
3ffe::a14:106/128     0.0.0.1      INTER-AREA 9
                       10.20.1.6    N           NnPA
    
```

```

-----
No. of Prefix/SIDs: 18
SRMS      : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
           S   = SRMS prefix SID is selected to be programmed
SID Flags : N = Node-SID
           nP = no penultimate hop POP
           M = Mapping server
           E = Explicit-Null
           V = Prefix-SID carries a value
           L = value/index has local significance
           I = Inter Area flag
           A = Attached flag
           B = Backup flag
    
```

```

*A:Dut-C#
*A:Dut-C# show router ospf prefix-sids
=====
Rtr Base OSPFv2 Instance 0 Prefix-Sids
=====
Prefix      Area      RtType      SID
Algo        Adv-Rtr   SRMS        Flags
-----
10.20.1.2/32  0.0.0.0   INTRA-AREA 2
0           10.20.1.2  N           NnP
10.20.1.2/32  0.0.0.0   INTRA-AREA 1282
128        10.20.1.2  N           NnP
10.20.1.3/32  0.0.0.0   INTRA-AREA 3
0           10.20.1.3  N           NnP
10.20.1.3/32  0.0.0.0   INTRA-AREA 1283
128        10.20.1.3  N           NnP
10.20.1.5/32  0.0.0.0   INTRA-AREA 5
0           10.20.1.5  N           NnP
10.20.1.5/32  0.0.0.0   INTRA-AREA 1285
128        10.20.1.5  N           NnP
-----
No. of Prefix/SIDs: 6
    
```

```

SRMS      : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
           S   = SRMS prefix SID is selected to be programmed
SID Flags : N = Node-SID
           nP = no penultimate hop POP
           M = Mapping server
           E = Explicit-Null
           V = Prefix-SID carries a value
           L = value/index has local significance
           I = Inter Area flag
           A = Attached flag
           B = Backup flag
=====
*A:Dut-C#
*A:Dut-C#
*A:Dut-C#
*A:Dut-C# show router ospf prefix-sids algo 128
=====
Rtr Base OSPFv2 Instance 0 Prefix-Sids
=====
Prefix          Area          RtType      SID
  Algo          Adv-Rtr      SRMS        Flags
-----
10.20.1.2/32    0.0.0.0      INTRA-AREA 1282
   128          10.20.1.2      N           NnP
10.20.1.3/32    0.0.0.0      INTRA-AREA 1283
   128          10.20.1.3      N           NnP
10.20.1.5/32    0.0.0.0      INTRA-AREA 1285
   128          10.20.1.5      N           NnP
-----
No. of Prefix/SIDs: 3
SRMS      : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
           S   = SRMS prefix SID is selected to be programmed
SID Flags : N = Node-SID
           nP = no penultimate hop POP
           M = Mapping server
           E = Explicit-Null
           V = Prefix-SID carries a value
           L = value/index has local significance
           I = Inter Area flag
           A = Attached flag
           B = Backup flag
=====
*A:Dut-C#
    
```

### Output Example

```

A:Dut-A>config>router# show router ospf prefix-sids
=====
Rtr Base OSPFv2 Instance 0 Prefix-Sids
=====
Prefix          Area          RtType      SID      Shared
  Algo          Adv-Rtr      SRMS        Flags
-----
1.0.0.1/32      0.0.0.0      INTRA-AREA 4001     Yes
   128          10.20.0.1      N           NnP
10.20.0.1/32    0.0.0.0      INTRA-AREA 101      No
   128          10.20.0.1      N           NnP
10.20.0.2/32    0.0.0.0      INTRA-AREA 402      N.A.
   128          10.20.0.2      N           NnP
-----
No. of Prefix/SIDs: 3
SRMS      : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
           S   = SRMS prefix SID is selected to be programmed
    
```

```

SID Flags : N = Node-SID
           nP = no penultimate hop POP
           M = Mapping server
           E = Explicit-Null
           V = Prefix-SID carries a value
           L = value/index has local significance
           I = Inter Area flag
           A = Attached flag
           B = Backup flag
Shared    : Yes  = local shared Node-SID
           No   = not a local shared Node-SID
           N.A. = not applicable for Remote prefix-sid
=====
    
```

Table 403: OSPF Prefix SIDs Output Fields

Label	Description
Prefix	Displays the IP prefix for the SID
Area	Displays the OSPF area
RtType	Displays the route type (INTRA-AREA or INTER-AREA)
SID	Displays the SID value
Adv-Rtr	Displays the IP address of the advertised router
SRMS	Displays whether the prefix SID is advertised by the SR mapping server (Y or N) or selected to be programmed (S)
Flags	Displays the SID flags
No. of Prefix/SIDs	Displays the number of Prefix/SIDs

## prefix-sids

### Syntax

**prefix-sids** [*ip-prefix[/prefix-length]*] [ **sid** *sid*] [**adv-router** *router-id*]

### Context

[\[Tree\]](#) (show>router>ospf3 prefix-sids)

### Full Context

show router ospf3 prefix-sids

### Description

This command displays OSPF prefix SIDs.

## Parameters

### *ip-prefix[/prefix-length]*

Displays information about the specified IP prefix and length, up to 64 characters.

### *sid*

Displays information for the specific segment identifier.

**Values** 0 to 524287

### *router-id*

Displays information for the specific advertising router identified by its router ID.

## Platforms

All

## Output

The following outputs are examples of OSPFv3 prefix SIDs information, and [Table 404: OSPFv3 Prefix SIDs Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-F# show router ospf prefix-sids
=====
Rtr Base OSPFv2 Instance 0 Prefix-Sids
=====
```

Prefix	Area Adv-Rtr	RtType	SID Flags
1.0.11.1/32	0.0.0.0 10.20.1.2	INTER-AREA	4 NnP
1.0.11.1/32	0.0.0.1 10.20.1.1	INTRA-AREA	4 NnP
1.0.11.1/32	0.0.0.1 10.20.1.3	INTRA-AREA	999 NnPB
1.0.22.2/32	0.0.0.0 10.20.1.2	INTER-AREA	5 NnPA
1.0.22.2/32	0.0.0.1 10.20.1.2	INTRA-AREA	5 NnP
1.0.22.2/32	0.0.0.1 10.20.1.6	INTRA-AREA	996 NnPB
1.0.33.3/32	0.0.0.0 10.20.1.2	INTER-AREA	0 NnP
1.0.33.3/32	0.0.0.1 10.20.1.3	INTRA-AREA	0 NnP
1.0.33.3/32	0.0.0.1 10.20.1.1	INTRA-AREA	998 NnPB
1.0.44.4/32	0.0.0.0 10.20.1.4	INTRA-AREA	1 NnP
1.0.44.4/32	0.0.0.0 10.20.1.5	INTRA-AREA	994 NnPB
1.0.44.4/32	0.0.0.1 10.20.1.2	INTER-AREA	1 NnP
1.0.55.5/32	0.0.0.0 10.20.1.5	INTRA-AREA	2 NnP
1.0.55.5/32	0.0.0.0 10.20.1.4	INTRA-AREA	995 NnPB
1.0.55.5/32	0.0.0.1 10.20.1.2	INTER-AREA	2 NnP

```

1.0.66.6/32      0.0.0.0      INTER-AREA  3
                  10.20.1.2      NnP
1.0.66.6/32      0.0.0.1      INTRA-AREA  3
                  10.20.1.6      NnP
1.0.66.6/32      0.0.0.1      INTRA-AREA  997
                  10.20.1.2      NnPB
10.20.1.1/32     0.0.0.0      INTER-AREA  10
                  10.20.1.2      NnP
10.20.1.1/32     0.0.0.1      INTRA-AREA  10
                  10.20.1.1      NnP
10.20.1.2/32     0.0.0.0      INTRA-AREA  11
                  10.20.1.2      NnP
10.20.1.2/32     0.0.0.1      INTER-AREA  11
                  10.20.1.2      NnPA
10.20.1.3/32     0.0.0.0      INTER-AREA  6
                  10.20.1.2      NnP
10.20.1.3/32     0.0.0.1      INTRA-AREA  6
                  10.20.1.3      NnP
10.20.1.4/32     0.0.0.0      INTRA-AREA  7
                  10.20.1.4      NnP
10.20.1.4/32     0.0.0.1      INTER-AREA  7
                  10.20.1.2      NnP
10.20.1.5/32     0.0.0.0      INTRA-AREA  8
                  10.20.1.5      NnP
10.20.1.5/32     0.0.0.1      INTER-AREA  8
                  10.20.1.2      NnP
10.20.1.6/32     0.0.0.0      INTRA-AREA  9
                  10.20.1.6      NnP
10.20.1.6/32     0.0.0.1      INTER-AREA  9
                  10.20.1.2      NnP
    
```

```

-----
No. of Prefix/SIDs: 30
SID Flags : N = Node-SID
            nP = no penultimate hop POP
            M = Mapping server
            E = Explicit-Null
            V = Prefix-SID carries a value
            L = value/index has local significance
            I = Inter Area flag
            A = Attached flag
            B = Backup flag
    
```

=====  
 \*A:Dut-F#

\*A:Dut-C# show router ospf prefix-sids sid 66

=====  
 Rtr Base OSPFv2 Instance 0 Prefix-Sids

```

=====  

Prefix          Area          RtType      SID
                Adv-Rtr      Active      Flags
-----
10.20.1.6/32    0.0.0.0      INTER-AREA  66
                10.20.1.4      N           NnP
10.20.1.6/32    0.0.0.0      INTER-AREA  66
                10.20.1.5      Y           NnP
10.20.1.6/32    0.0.0.1      INTER-AREA  66
                10.20.1.2      N           NnP
    
```

```

-----
No. of Prefix/SIDs: 3
Flags:  N = Node-SID
        nP = no penultimate hop POP
        M = Mapping server
        E = Explicit-Null
    
```



```

V = Prefix-SID carries a value
L = value/index has local significance
I = Inter Area flag
A = Attached flag
=====
*A:Dut-C#

*A:Dut-C>config>router>ospf3# show router ospf3 0 prefix-sids
=====
Rtr Base OSPFv3 Instance 0 Prefix-Sids
=====
Prefix                               Area          RtType        SID
Adv-Rtr                               SRMS          Flags
-----
3ffe::100:b01/128                    0.0.0.1      INTRA-AREA 4
                                           10.20.1.1    N           NnPA
3ffe::100:1602/128                   0.0.0.1      INTRA-AREA 5
                                           10.20.1.2    N           NnPA
3ffe::100:2103/128                   0.0.0.1      INTRA-AREA 0
                                           10.20.1.3    N           NnPA
3ffe::100:2c04/128                   0.0.0.1      INTER-AREA 1
                                           10.20.1.2    N           NnP
3ffe::100:2c04/128                   0.0.0.1      INTER-AREA 1
                                           10.20.1.6    N           NnP
3ffe::100:3705/128                   0.0.0.1      INTER-AREA 2
                                           10.20.1.2    N           NnP
3ffe::100:3705/128                   0.0.0.1      INTER-AREA 2
                                           10.20.1.6    N           NnP
3ffe::100:4206/128                   0.0.0.1      INTRA-AREA 3
                                           10.20.1.6    N           NnPA
3ffe::a14:101/128                     0.0.0.1      INTRA-AREA 10
                                           10.20.1.1    N           NnPA
3ffe::a14:102/128                     0.0.0.1      INTER-AREA 11
                                           10.20.1.2    N           NnPA
3ffe::a14:102/128                     0.0.0.1      INTER-AREA 11
                                           10.20.1.6    N           NnP
3ffe::a14:103/128                     0.0.0.1      INTRA-AREA 6
                                           10.20.1.3    N           NnPA
3ffe::a14:104/128                     0.0.0.1      INTER-AREA 7
                                           10.20.1.2    N           NnP
3ffe::a14:104/128                     0.0.0.1      INTER-AREA 7
                                           10.20.1.6    N           NnP
3ffe::a14:105/128                     0.0.0.1      INTER-AREA 8
                                           10.20.1.2    N           NnP
3ffe::a14:105/128                     0.0.0.1      INTER-AREA 8
                                           10.20.1.6    N           NnP
3ffe::a14:106/128                     0.0.0.1      INTER-AREA 9
                                           10.20.1.2    N           NnP
3ffe::a14:106/128                     0.0.0.1      INTER-AREA 9
                                           10.20.1.6    N           NnPA
-----
No. of Prefix/SIDs: 18
SRMS      : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
           S   = SRMS prefix SID is selected to be programmed
SID Flags : N = Node-SID
           nP = no penultimate hop POP
           M = Mapping server
           E = Explicit-Null
           V = Prefix-SID carries a value
           L = value/index has local significance
           I = Inter Area flag
           A = Attached flag
           B = Backup flag
    
```

### Output Example

```

=====
A:Dut-A>config>router# show router ospf3 prefix-sids
=====
Rtr Base OSPFv3 Instance 0 Prefix-Sids
=====
Prefix                Area          RtType      SID          Shared
                    Adv-Rtr      SRMS        Flags
-----
3ffe::100:1/128      0.0.0.0      INTRA-AREA 6001         Yes
                    10.20.0.1    N          NnPA
3ffe::a14:1/128     0.0.0.0      INTRA-AREA 201          No
                    10.20.0.1    N          NnPA
3ffe::a14:2/128     0.0.0.0      INTRA-AREA 402          N.A.
                    10.20.0.2    N          NnPA
-----
No. of Prefix/SIDs: 3
SRMS      : Y/N = prefix SID advertised by SR Mapping Server (Y) or not (N)
           S  = SRMS prefix SID is selected to be programmed
SID Flags : N = Node-SID
           nP = no penultimate hop POP
           M = Mapping server
           E = Explicit-Null
           V = Prefix-SID carries a value
           L = value/index has local significance
           I = Inter Area flag
           A = Attached flag
           B = Backup flag
Shared    : Yes  = local shared Node-SID
           No   = not a local shared Node-SID
           N.A. = not applicable for Remote prefix-sid
=====
    
```

Table 404: OSPFv3 Prefix SIDs Output Fields

Label	Description
Prefix	Displays the IP prefix for the SID
Area	Displays the OSPF area
RtType	Displays the route type (INTRA-AREA or INTER-AREA)
SID	Displays the SID value
Adv-Rtr	Displays the IP address of the advertised router
SRMS	Displays whether the prefix SID is advertised by the SR mapping server (Y or N) or selected to be programmed (S)
Flags	Displays the SID flags
No. of Prefix/SIDs	Displays the number of Prefix/SIDs

## prefix-sids

### Syntax

**prefix-sids** [**interface** *ip-int-name*] [**ipv4** | **ipv6**]

### Context

**[Tree]** (show>router>seg-rt>sr-mpls prefix-sids)

### Full Context

show router segment-routing sr-mpls prefix-sids

### Description

This command displays information about the prefix SIDs and their state on the router.

### Parameters

#### *ip-int-name*

Displays information about the specified interface, up to 32 characters.

#### **ipv4**

Displays the prefix SIDs that are IPv4 capable.

#### **ipv6**

Displays the prefix SIDs that are IPv6 capable.

### Platforms

All

### Output

The following output is an example of prefix SIDs information, and [Table 405: Prefix SIDs Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-A# show router segment-routing sr-mpls prefix-sids
=====
Rtr Base SR-MPLS Prefix-SIDs
=====
Interface Name          AF      SID      Label      State
-----
System                  IPv4    123      100123     enabled
System                  IPv6    234      100234     ifFailed
loopback.0              IPv4    345      100345     ifDown
loopback.0              IPv6    456      100456     ifDown
loopback.4              IPv4    567      100567     failed
loopback.4              IPv6    -        -          adminDown
loopback.6              IPv4    -        -          adminDown
loopback.6              IPv6    678      100678     notPref
-----
No. of Prefix-SIDs: 4
=====
```

Table 405: Prefix SIDs Output Fields

Label	Description
Interface Name	The name of the loopback or system interface
AF	The address family associated with the prefix SID
SID	The SID index
Label	The SID label
State	The operational state of the prefix SID <ul style="list-style-type: none"><li>• enabled — Operational state up</li><li>• adminDown — Administrative state down (for example, no SID configured)</li><li>• failed — Operational state down due to failure (for example, resource allocation failure)</li><li>• ifDown — The interface is down</li><li>• ifFailed — Interface configuration failure (for example, the interface is not a loopback)</li></ul>

## 18.93 prefix-stats

### prefix-stats

#### Syntax

**prefix-stats** *ipv6-address/prefix-length*

**prefix-stats pool** *pool-name*

#### Context

[\[Tree\]](#) (show>router>dhcp6>local-dhcp-server prefix-stats)

#### Full Context

show router dhcp6 local-dhcp-server prefix-stats

#### Description

This command displays prefix statistics.

## Parameters

### *ipv6-address*

Specifies the base IP address of the subnet. This address must be unique within the subnet and specified in dotted decimal notation. Allowed values are IP addresses in the range 1.0.0.0 – 223.255.255.255 (with support of /31 subnets).

### *pool-name*

Specifies the name of DHCPv6 local server pool.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.94 prefix-threshold-stats

### prefix-threshold-stats

## Syntax

**prefix-threshold-stats pool *pool-name* detail [ format {exact | scientific} ]**

**prefix-threshold-stats pool *pool-name***

**prefix-threshold-stats *ipv6-address/prefix-length* detail [format {exact | scientific}]**

**prefix-threshold-stats *ipv6-address/prefix-length***

## Context

[\[Tree\]](#) (show>router>dhcp6>server prefix-threshold-stats)

## Full Context

show router dhcp6 local-dhcp-server prefix-threshold-stats

## Description

This commands displays prefix level threshold stats of local DHCPv6 server prefix. A minimum-free threshold needs to be configured before system collects threshold stats for the prefix.

The stats for each threshold are calculated based on the configured minimum-free prefix length.

For example, a /59 prefix is provision in the local DHCPv6 server, and the server allocated two PD leases, one /62 and one /63. And there is a /63 minimum threshold configured. The threshold stats are calculated based on /63 as the base unit (block). Then the value of the current used block would be 3 because there is one /62 lease and one /63 lease, that equals to a total three /63.

## Parameters

### **pool *pool-name***

Specifies the name of the pool in local DHCPv6 server, up to 32 characters.

**detail**

Displays detailed output statistics.

**format**

Specifies that the number format in the display is either **exact** or **scientific**.

**ipv6-address/prefix-length**

Specifies the IPv6 prefix with prefix length.

**Values**

ipv6-address x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x [0 to FFFF]H

d [0 to 255]D

prefix-length [1 to 128]

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of prefix threshold information.

**Output Example**

```

show router 500 dhcp6 local-dhcp-server "d6" leases
=====
Leases for DHCPv6 server d6
=====
IP Address/Prefix          Lease State      Remaining      Fail
Link-local Address        LifeTime        Ctrl
-----
8888:0:0:ffe0:db8:/62
 fe80::3:ffff:fe00:db8:111      stable          18h19m2s      local
8888:0:0:ffe4::/63
 fe80::3:ffff:fe00:db8:211      stable          19h49m37s     local
-----
2 leases found
=====
show router 500 dhcp6 local-dhcp-server "d6" prefix-threshold-stats pool "1"
=====
Server "d6"
=====
Operational state          : inService
-----
Pool                        : 1
-----
Stable leases              : 2
Advertised leases         : 0
-----
Prefix                      : 8888:0:0:ffe0:db8:/59
-----
Stable leases              : 2
Advertised leases         : 0
Draining                   : N
    
```

```
-----
Threshold  Used   Peak  Too low  Depleted  Peak timestamp
-----
/62        25%   25%   Y        N         01/20/2015 23:51:36
/63        19%   19%   N        N         01/21/2015 05:00:53
=====
```

The command shown above displays an overview of prefix level thresholds in the specified pool:

- The **Peak** field indicates the peak value of used.
- The **Too low** field indicate if the configured minimum-free threshold is exceeded.
- The **Depleted** field indicate if there is no available prefix with the length in the provisioned prefix.
- The **Peak** timestamp field indicates the time of peak used value.

```
show router 500 dhcp6 local-dhcp-server "d6" prefix-threshold-stats pool "1" detail
=====
Server "d6"
=====
Operational state      : inService
-----
Pool                   : 1
-----
Stable leases         : 2
Advertised leases     : 0
-----
Prefix                 : 8888:0:0:ffe0::/59
-----
Stable leases         : 2
Advertised leases     : 0
Draining              : N
-----
Threshold              : /62
-----
Current Provisioned Blks : 8.000000x10^0
Current Used Blks       : 2.000000x10^0
Current Free Blks      : 6.000000x10^0
Current Used Percent    : 25%
Current Used Peak Blks : 2.000000x10^0
Current Used Peak Percent : 25%
Current Used Peak Time  : 01/21/2015 21:59:02
Current Free Percent    : 75%
Current Free Too Low    : N
Current Free Depleted  : N
Local Provisioned Blks : 8.000000x10^0
Local Used Blks        : 2.000000x10^0
Local Free Blks       : 6.000000x10^0
Local Used Peak Blks  : 2.000000x10^0
Local Used Peak Percent : 25%
Local Used Peak Time   : 01/21/2015 21:59:02
Remote Provisioned Blks : 0.000000x10^0
Remote Used Blks       : 0.000000x10^0
Remote Free Blks      : 0.000000x10^0
Remote Used Peak Blks : 0.000000x10^0
Remote Used Peak Percent : 0%
Remote Used Peak Time  : 01/21/2015 21:59:02
Peak Reset Time        : 01/21/2015 21:59:02
Valid Data             : Y
-----
Threshold              : /63
-----
```

```

Current Provisioned Blks : 1.600000x10^1
Current Used Blks       : 3.000000x10^0
Current Free Blks      : 1.300000x10^1
Current Used Percent    : 19%
Current Used Peak Blks : 3.000000x10^0
Current Used Peak Percent : 19%
Current Used Peak Time  : 01/21/2015 21:59:13
Current Free Percent    : 81%
Current Free Too Low    : N
Current Free Depleted   : N
Local Provisioned Blks : 1.600000x10^1
Local Used Blks        : 3.000000x10^0
Local Free Blks       : 1.300000x10^1
Local Used Peak Blks   : 3.000000x10^0
Local Used Peak Percent : 19%
Local Used Peak Time   : 01/21/2015 21:59:13
Remote Provisioned Blks : 0.000000x10^0
Remote Used Blks       : 0.000000x10^0
Remote Free Blks      : 0.000000x10^0
Remote Used Peak Blks  : 0.000000x10^0
Remote Used Peak Percent : 0%
Remote Used Peak Time  : 01/21/2015 21:59:13
Peak Reset Time        : 01/21/2015 21:59:13
Valid Data             : Y
    
```

The command shown above displays detailed statistics of all prefix level thresholds in the specified pool:

- **Blks** means the minimum free prefix length.
- **Valid Data** output indicates whether the data is or is not valid. The data is invalid when a background stats update is scheduled or busy.

```

show router 500 dhcp6 local-dhcp-server "d6" prefix-threshold-
stats 8888:0:0:ffe0:db8:/59
    
```

```

=====
Server "d6"
=====
Operational state      : inService
-----
Pool                   : 1
-----
Stable leases          : 2
Advertised leases      : 0
-----
Prefix                 : 8888:0:0:ffe0:db8:/59
-----
Stable leases          : 2
Advertised leases      : 0
Draining               : N
-----
Threshold  Used    Peak  Too low  Depleted  Peak timestamp
-----
/62        25%    25%   N        N         01/21/2015 21:59:02
/63        19%    19%   N        N         01/21/2015 21:59:13
    
```

The command shown above displays an overview of prefix level thresholds in the specified provision prefix.

```

show router 500 dhcp6 local-dhcp-server "d6" prefix-threshold-stats 8888:0:0:ffe0::/
59 detail
=====
Server "d6"
    
```



```
=====
Operational state      : inService
-----
Pool                  : 1
-----
Stable leases         : 2
Advertised leases    : 0
-----
Prefix                : 8888:0:0:ffe0:db8:/59
-----
Stable leases         : 2
Advertised leases    : 0
Draining              : N
-----
Threshold             : /62
-----
Current Provisioned Blks : 8.000000x10^0
Current Used Blks      : 2.000000x10^0
Current Free Blks     : 6.000000x10^0
Current Used Percent   : 25%
Current Used Peak Blks : 2.000000x10^0
Current Used Peak Percent : 25%
Current Used Peak Time : 01/21/2015 21:59:02
Current Free Percent   : 75%
Current Free Too Low  : N
Current Free Depleted : N
Local Provisioned Blks : 8.000000x10^0
Local Used Blks       : 2.000000x10^0
Local Free Blks      : 6.000000x10^0
Local Used Peak Blks  : 2.000000x10^0
Local Used Peak Percent : 25%
Local Used Peak Time  : 01/21/2015 21:59:02
Remote Provisioned Blks : 0.000000x10^0
Remote Used Blks     : 0.000000x10^0
Remote Free Blks     : 0.000000x10^0
Remote Used Peak Blks : 0.000000x10^0
Remote Used Peak Percent : 0%
Remote Used Peak Time : 01/21/2015 21:59:02
Peak Reset Time       : 01/21/2015 21:59:02
Valid Data            : Y
-----
Threshold             : /63
-----
Current Provisioned Blks : 1.600000x10^1
Current Used Blks       : 3.000000x10^0
Current Free Blks     : 1.300000x10^1
Current Used Percent   : 19%
Current Used Peak Blks : 3.000000x10^0
Current Used Peak Percent : 19%
Current Used Peak Time : 01/21/2015 21:59:13
Current Free Percent   : 81%
Current Free Too Low  : N
Current Free Depleted : N
Local Provisioned Blks : 1.600000x10^1
Local Used Blks       : 3.000000x10^0
Local Free Blks      : 1.300000x10^1
Local Used Peak Blks  : 3.000000x10^0
Local Used Peak Percent : 19%
Local Used Peak Time  : 01/21/2015 21:59:13
Remote Provisioned Blks : 0.000000x10^0
Remote Used Blks     : 0.000000x10^0
Remote Free Blks     : 0.000000x10^0
Remote Used Peak Blks : 0.000000x10^0
Remote Used Peak Percent : 0%
```

```
Remote Used Peak Time : 01/21/2015 21:59:13
Peak Reset Time      : 01/21/2015 21:59:13
Valid Data           : Y
```

The command displayed above displays detailed statistics of prefix level thresholds in the specified provision prefix.

[Table 406: Prefix Threshold Statistics Field Descriptions](#) describes prefix threshold statistics output fields.

*Table 406: Prefix Threshold Statistics Field Descriptions*

Field	Description
Operational state	The operational state of the local DHCP server instance unknown — The operational state is unknown inService — The operational state is in service outOfService — The operational state is out of service transition — The operational state is in transition waitPersistence — The DHCP server instance is waiting for a persistence action to complete.
Pool	The number of pools in the specified prefix
Stable leases	The number of stable leases associated with the prefix
Advertised leases	The advertised leases associated with the prefix
Prefix	The specified prefix
Draining	The draining state Y — enabled N — disabled
Threshold	The prefix level threshold
Current Provisioned Blks	The number of provisioned blocks for this prefix
Current Used Blks	The number of used blocks for this prefix
Current Free Blks	The number of free blocks for this prefix
Current Used Percent	The percentage of used prefixes with the minimum free threshold length for this prefix
Current Used Peak Blks	A 64-bit word of the peak value of the number of used blocks for this prefix
Current Used Peak Percentage	The peak value of the number of used prefixes with the minimum free threshold length in the pool as a percentage of the provisioned prefixes.

Field	Description
Current Used Peak Time	The time at which the peak value of the number of used prefixes in the pool was reached
Current Free Percent	The percentage of free prefixes with the minimum free threshold length in the pool compared to the number of provisioned prefixes.
Current Free Too Low	The number of free prefixes with the minimum free threshold length available in the pool that is below the configured number of prefixes with the minimum free threshold length
Current Free Depleted	The number of prefixes with the minimum free threshold length available
Local Provisioned Blks	A 64-bit word of the number of provisioned prefixes with the minimum free threshold length local
Local Used Blks	The higher 64-bits word of the number of used prefixes with the minimum free threshold length
Local Free Blks	A 64-bit word of the number of free prefixes with the minimum free threshold length
Local Used Peak Blks	A 64-bit word of the peak value of the number of used prefixes with the minimum free threshold length
Local Used Peak Percent	The peak value of the number of used prefixes with the minimum free threshold length local in the pool as a percentage of the provisioned prefixes
Local Used Peak Time	The time at which the peak value of the number of used prefixes local in the pool was reached
Remote Provisioned Blks	A 64-bit word of the number of provisioned prefixes with the minimum free threshold length
Remote Used Blks	A 64-bit word of the number of used prefixes with the minimum free threshold length remote in the pool
Remote Free Blks	A 64-bit word of the number of free prefixes with the minimum free threshold length remote in the pool
Remote Used Peak Blks	The higher 64-bit word of the number of used prefixes with the minimum free threshold length
Remote Used Peak Percent	The peak value of the number of used prefixes with the minimum free threshold length remote in the pool as a percentage of the provisioned prefixes
Remote Used Peak Time	The time at which the peak value of the number of used prefixes remote in the pool was reached.

Field	Description
Peak Reset Time	The time at which the peak values have been reset
Valid Dada	The actual status of the threshold statistics data of the pool. Y — the data is up to date and may be used. N — the data is being recalculated in the background and is not stable for further use

## prefix-threshold-stats

### Syntax

**prefix-threshold-stats** *ipv6-address/prefix-length*

**prefix-threshold-stats** *pool pool-name*

### Context

**[Tree]** (clear>router>dhcp6>server prefix-threshold-stats)

### Full Context

clear router dhcp6 local-dhcp-server prefix-threshold-stats

### Description

This commands resets the peak stats in the prefix level threshold stats in the specified provision prefix or pool.

### Parameters

***pool-name***

Clears information about the specified pool in local DHCPv6 server.

***ipv6-address/prefix-length***

Clears information about the specified IPv6 prefix with prefix length.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.95 prefixes

### prefixes

#### Syntax

**prefixes prefix** *ip-prefix/ip-prefix-length* [ **summary** | **detail**] [**session** *ip-addr*[ *label-space*]] [**community** *community*]

**prefixes prefix** [*family*] [**summary** | **detail**] [**session** *ip-addr*[*label-space*]] [**community** *community*]

**prefixes** [*family*] [**summary** | **detail**] [ **egress-if** *port-id*] [**community** *community*]

**prefixes** [*family*] [**summary** | **detail**] [ **egress-lsp** *tunnel-id*] [**community** *community*]

**prefixes** [**egress-nh** *ip-address*] [*family*] [ **summary** | **detail**] [**community** *community*]

**prefixes prefix** *ip-prefix/ip-prefix-length* [ **summary** | **detail**] [**egress-if** *port-id*] [**community** *community*]

**prefixes prefix** *ip-prefix/ip-prefix-length* [ **summary** | **detail**] [**egress-lsp** *tunnel-id*] [**community** *community*]

**prefixes prefix** *ip-prefix/ip-prefix-length* [ **egress-nh** *ip-address*] [**summary** | **detail**] [**community** *community*]

#### Context

[\[Tree\]](#) (show>router>ldp>bindings prefixes)

#### Full Context

show router ldp bindings prefixes

#### Description

This command displays LDP Prefix fec bindings.

#### Parameters

##### **prefix** *ip-prefix/ip-prefix-length*

Specify information for the specified IP prefix and mask length.

Values	
ipv4-prefix	- a.b.c.d
ipv4-prefix-length	[0 to 32]
ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H d - [0 to 255]D
ipv6-prefix-length	[0 to 128]

### **session *ip-addr*[*label-space*]**

Specify information for the specified IP address and label space.

<b>Values</b>	ipv4-address	- a.b.c.d: <i>label-space</i>
	ipv6-address	- x:x:x:x:x:x:x: <i>label-space</i>
	label-space	0 to 65535

#### ***detail***

Displays detailed information.

#### ***summary***

Displays information in a summarized format.

#### ***family***

Displays either IPv4 or IPv6 active LDP information.

**Values** ipv4 or ipv6

### **egress-lsp *tunnel-id***

Specifies the tunnel identifier for this egress LSP.

**Values** 0 to 4294967295

### **egress-nh *ip-address***

Displays LDP active bindings by matching egress-nh.

<b>Values</b>	ipv4-address	- a.b.c.d
	ipv6-address	- x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H d - [0 to 255]D

### **egress-if *port-id***

Displays LDP active bindings by matching egress-if.

#### ***community***

The string defining the LDP community assigned to the session. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters excluding double quotes. If the string contains spaces, use double quotes to delimit the start and end of the string.

**Values** up to 32 characters | no-community (selects FEC with no community string)

## **Platforms**

All

## Output

### Output Example

```
*A:SRU4# show router ldp bindings prefixes
=====
LDP Bindings (IPv4 LSR ID 10.20.1.4)
              (IPv6 LSR ID 3ffe::6e14:104)
=====
Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, M - Community Mismatch, BA - ASBR Backup FEC
=====
LDP IPv4 Prefix Bindings
=====
```

Prefix	IngLbl	EgrLbl
Peer	EgrIntf/LspId	
EgrNextHop	FEC-Flags	
-----	-----	-----
0.0.0.0/0	--	16910
10.100.1.1:0	--	
--		
1.1.1.0/24	3U	14828
10.100.1.1:0	--	
--		
1.1.1.0/24	3U	3e
10.20.1.1:0		

```
*A:Dut-C>config>router>ldp# show router ldp bindings prefixes detail
=====
LDP Bindings (IPv4 LSR ID 10.20.1.4)
              (IPv6 LSR ID 3ffe::6e14:104)
=====
Label Status:
  U - Label In Use, N - Label Not In Use, W - Label Withdrawn
  WP - Label Withdraw Pending, BU - Alternate For Fast Re-Route
  e - Label ELC
FEC Flags:
  LF - Lower FEC, UF - Upper FEC, M - Community Mismatch, BA - ASBR Backup FEC
=====
LDP IPv4 Prefix Bindings
=====
```

Prefix	: 0.0.0.0/0		
Peer	: 10.100.1.1:0		
Community	: RED		
Ing Lbl	: --	Egr Lbl	: 16910
Egr Int/LspId	: --		
EgrNextHop	: --		
Egr. Flags	: None	Ing. Flags	: None
Egr If Name	: n/a		
-----	-----	-----	-----
Prefix	: 1.1.1.0/24		
Peer	: 10.100.1.1:0		
Community	: RED		
Ing Lbl	: 3U	Egr Lbl	: 14828

```
Egr Int/LspId : --
EgrNextHop   : --
Egr. Flags   : None           Ing. Flags : None
Egr If Name   : n/a
-----
Prefix       : 1.1.1.0/24
-----
```

## prefixes

### Syntax

**prefixes** [*family*] [**summary** | **detail**] [**egress-if** *port-id*] [**community** *community*]

**prefixes** [*family*] [**summary** | **detail**] [**egress-lsp** *tunnel-id*] [**community** *community*]

**prefixes** [**egress-nh** *ip-address*] [*family*] [**summary** | **detail**] [**community** *community*]

**prefixes** **prefix** *ip-prefix/ip-prefix-length* [**summary** | **detail**] [**egress-if** *port-id*] [**community** *community*]

**prefixes** **prefix** *ip-prefix/ip-prefix-length* [**summary** | **detail**] [**egress-lsp** *tunnel-id*] [**community** *community*]

**prefixes** **prefix** *ip-prefix/ip-prefix-length* [**egress-nh** *ip-address*] [**summary** | **detail**] [**community** *community*]

### Context

[\[Tree\]](#) (show>router>ldp>bindings>active prefixes)

### Full Context

show router ldp bindings active prefixes

### Description

This command displays LDP active prefix bindings.

### Parameters

#### *ip-prefix/ip-prefix-length*

Specifies information for the IP prefix and mask length.

#### Values

ipv4-prefix:	a.b.c.d
ipv4-prefix-length:	0 to 32
ipv6-prefix:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D
ipv6-prefix-length:	1 to 128



***ip-address***

Specifies the IPv4 or IPv6 address.

Values	ipv4-address:	a.b.c.d
	ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 to FFFF]H
		d: [0 to 255]D

***family***

Specifies the address family.

Values	ipv4, ipv6
--------	------------

***port-id***

Specifies the port ID.

Values	<i>slot[/mda[/port]] or slot/mda/port [.channel]</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-sat-id	<b>esat-id</b> [/slot/[u]port]	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
	<i>u</i>	keyword for up-link port
tdm-sat-id	<b>tsat-id</b> [/slot/[u]port.channel]	
	<b>tsat</b>	keyword
	<i>id</i>	1 to 20
	<b>u</b>	keyword for up-link port
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a to b

***tunnel-id***

Specifies the tunnel ID.

**Values** 0 to 4294967295

***community***

The string defining the LDP community assigned to the session. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters excluding double quotes. If the string contains spaces, use double quotes to delimit the start and end of the string.

**Values** up to 32 characters | no-community (selects FEC with no communitystring)

**Platforms**

All

## 18.96 profile

### profile

**Syntax**

**profile** [*user-profile-name*]

**Context**

[\[Tree\]](#) (show system security profile)

**Full Context**

show system security profile

**Description**

This command displays user profile information.

If the *profile-name* is not specified, then information for all profiles are displayed.

**Parameters**

***user-profile-name***

Displays information for the specified user profile.

**Platforms**

All

**Output**

The following output is an example of user profile output information.

[Table 407: Show User Profile Output Fields](#) describes user profile output fields.

### Output Example

```
A:ALA-7# show system security profile administrative
=====
User Profile
=====
User Profile : administrative
Def. Action  : permit-all
-----
Entry       : 10
Description :
Match Command: configure system security
Action      : permit
-----
Entry       : 20
Description :
Match Command: show system security
Action      : permit
-----
No. of profiles:
=====
A:ALA-7#
```

Table 407: Show User Profile Output Fields

Label	Description
User Profile	Displays the profile name used to deny or permit user console access to a hierarchical branch or to specific commands.
Def. action	Permit all — Permits access to all commands. Deny — Denies access to all commands. None — No action is taken.
Entry	The entry ID in a policy or filter table.
Description	Displays the text string describing the entry.
Match Command	Displays the command or subtree commands in subordinate command levels.
Action	Permit all — Commands matching the entry command match criteria are permitted. Deny — Commands not matching the entry command match criteria are not permitted.
No. of profiles	The total number of profiles listed.

## profile

### Syntax

**profile** [*profile-name*]

## Context

[\[Tree\]](#) (show system security profile)

## Full Context

show system security profile

## Description

This command displays user profiles for CLI command tree permissions.

## Parameters

### *profile-name*

Specify the profile name to display information about a single user profile. If no profile name is displayed, the entire list of profile names are listed.

## Platforms

All

## Output

The following output is an example of profile information.

[Table 408: Show Profile Output Fields](#) describes the profile output fields.

## Output Example

```
A:ALA-48>config>system>snmp# show system security profile
=====
User Profile
=====
User Profile : test
Def. Action  : none
-----
Entry       : 1
Description  :
Match Command:
Action      : unknown
=====
User Profile : default
Def. Action  : none
-----
Entry       : 10
Description  :
Match Command: exec
Action      : permit
-----
Entry       : 20
Description  :
Match Command: exit
Action      : permit
-----
Entry       : 30
Description  :
Match Command: help
Action      : permit
-----
...
-----
```

```

Entry      : 80
Description :
Match Command: enable-admin
Action     : permit
=====

User Profile : administrative
Def. Action  : permit-all
-----
Entry      : 10
Description :
Match Command: configure system security
Action     : permit
-----
Entry      : 20
Description :
Match Command: show system security
Action     : permit
=====

No. of profiles: 3
=====
A:ALA-48>config>system>snmp#
    
```

Table 408: Show Profile Output Fields

Label	Description
User Profile	default — Displays the action to be given to the user profile if none of the entries match the command.  administrative — Specifies the administrative state for this profile.
Def. Action	none — No action is given to the user profile when none of the entries match the command.  permit-all — The action to be taken when an entry matches the command.
Entry	10 - 80 — Displays an entry which represents the configuration for a system user.
Description	A text string describing the entry.
Match Command	administrative — Enables the user to execute all commands. configure system security — Enables the user to execute the <b>config system security</b> command. enable-admin — Enables the user to enter a special administrative mode by entering the <b>enable-admin</b> command. exec — Enables the user to execute (exec) the contents of a text file as if they were CLI commands entered at the console. exit — Enables the user to execute the <b>exit</b> command. help — Enables the user to execute the <b>help</b> command. logout — Enables the user to execute the <b>logout</b> command.

Label	Description
	password — Enables the user to execute the <b>password</b> command. show config — Enables the user to execute the <b>show config</b> command. show — Enables the user to execute the <b>show</b> command. show system security — Enables the user to execute the show system security command.
Action	permit — Enables the user access to all commands. deny-all — Denies the user access to all commands.

## 18.97 protection-template

### protection-template

#### Syntax

**protection-template**

#### Context

[\[Tree\]](#) (show>router>mpls>mpls-tp protection-template)

#### Full Context

show router mpls mpls-tp protection-template

#### Description

This command displays MPLS-TP protection template information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of MPLS protection template fields.

#### Output Example

```
*A:mlstp-dutA# show router mpls mpls-tp protection-template
=====
MPLS-TP Protection Templates
=====
Template Name : privatebed-protection-template Router ID      : 1
Protection Mode: oneZone                        Direction       : bidirectional
Revertive      : revertive                       Wait-to-Restore: 300sec
```

```
Rapid-PSC-Timer: 10ms                               Slow-PSC-Timer : 5sec  
=====
```

## 18.98 protocol

protocol

### Syntax

protocol

### Context

[\[Tree\]](#) (clear>router>bgp protocol)

### Full Context

clear router bgp protocol

### Description

This command resets the entire BGP protocol. If the AS number was previously changed, the BGP AS number does not inherit the new value.

### Platforms

All

protocol

### Syntax

protocol [*protocol-name*] count [*detail*]

protocol count [*detail*]

protocol count top *granularity* [*max-count* *max-count*]

### Context

[\[Tree\]](#) (show>app-assure>group>aa-sub protocol)

[\[Tree\]](#) (show>app-assure>group protocol)

### Full Context

show application-assurance group aa-sub protocol

show application-assurance group protocol

## Description

This command displays per-protocol statistics. The system-wide statistics displayed account for all flows completed and the last internal snapshot of the active flows.

Subscriber statistics are available for special study subscribers and account for all completed and active flows at the moment of this statistics request.

## Parameters

### *protocol-name*

Displays information about the specified protocol name.

### *count*

Displays protocol counters.

### *detail*

Displays detailed information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **protocol** command.

### Output Example

```
A:ALU>show>app-assure>group# protocol count
=====
Protocol Statistics
=====
Protocol                Disc Octets          Packets          Flows
-----
aim_oscar                0% 0                0                0
aim_oscar_file_xfer     0% 0                0                0
aim_oscar_video_voice   0% 0                0                0
aim_toc                  0% 0                0                0
bittorrent               0% 0                0                0
...

A:ALU>show>app-assure>group# protocol "http_audio" count detail
=====
Protocol "http_audio" Statistics
=====
Protocol:
Type                Octets          Packets          Flows
-----
http_audio:
Admitted from subscriber: 14958          201            2
Denied from subscriber: 0                0              0
Active flows from subscriber: 0
Admitted to subscriber: 587590          396            2
Denied to subscriber: 0                0              0
Active flows to subscriber: 0
Total flow duration: 21 seconds
Terminated flows: 4
Short Duration flows: 4
Medium Duration flows: 0
Long Duration flows: 0
```



```
Active subscribers:      1
=====
A:ALU>show>app-assure>group#
```

## protocol

### Syntax

```
protocol [protocol-name]
protocol [protocol-name] detail
```

### Context

[\[Tree\]](#) (show>app-assure protocol)

### Full Context

show application-assurance protocol

### Description

This command displays application-assurance policy protocols loaded from the isa-aa.tim file.

### Parameters

#### *protocol-name*

Displays all protocols from the isa-aa.tim file.

#### detail

Displays detailed information about the specified protocol name.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of the **protocol** command information.

#### Output Example

```
A:ALU-ABC>show>app-assure# protocol
=====
Application Assurance Protocols
=====
          Protocol : Description
-----
          aim_oscar : America Online Oscar Instant Messaging.
          aim_oscar_file_xfer : America Online Oscar File Transfer.
          aim_oscar_video_voice : America Online Oscar Video and Voice
                                Traffic.
          aim_toc : America Online Talk to Oscar Instant
                   Messaging.
          bittorrent : BitTorrent peer to peer protocol.
          ...
A:ALU-ABC>show>app-assure#
```

```
A:ALU-ABC>show>app-assure# protocol tftp
=====
Application Assurance Protocols
=====
                Protocol : Description
-----
                tftp : IETF RFC 1350: Trivial File Transfer
                        Protocol.
=====
A:ALU-ABC>show>app-assure#
```

## 18.99 protocol-list

### protocol-list

#### Syntax

```
protocol-list [protocol-list-name]
protocol-list protocol-list-name references
```

#### Context

[\[Tree\]](#) (show>filter>match-list protocol-list)

#### Full Context

```
show filter match-list protocol-list
```

#### Description

This command displays the protocol-list information.

#### Parameters

##### *protocol-list-name*

A string of up to 32 characters of printable ASCII characters. If special characters are used, the string must be enclosed within double quotes.

##### **references**

Displays the filter policies and policy entries referring to this match.

#### Platforms

All

## 18.100 protocol-protection

### protocol-protection

#### Syntax

**protocol-protection**

#### Context

[\[Tree\]](#) (show>system>security>cpu-protection protocol-protection)

#### Full Context

show system security cpu-protection protocol-protection

#### Description

This command display all interfaces with non-zero drop counters.

#### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

### protocol-protection

#### Syntax

**protocol-protection**

#### Context

[\[Tree\]](#) (clear>cpu-protection protocol-protection)

#### Full Context

clear cpu-protection protocol-protection

#### Description

This command clears the interface counts of packets dropped by protocol protection.

#### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## 18.101 provider-tunnel

### provider-tunnel

#### Syntax

**provider-tunnel**

**provider-tunnel spmsi-tunnels [detail]**

#### Context

[\[Tree\]](#) (show>service>id provider-tunnel)

#### Full Context

show service id provider-tunnel

#### Description

This command displays the service provider tunnel information.

#### Platforms

All

#### Output

The following command displays the service provider tunnel information and [Table 409: Show provider tunnel output fields](#) describes the output fields.

```
show service id provider-tunnel
```

#### Output Example

```
=====
Service Provider Tunnel Information
=====
Type           : inclusive           Root and Leaf      : enabled
Admin State    : disabled             Data Delay Intvl   : 15 secs
PMSI Type      : ldp                    LSP Template       :
Remain Delay Intvl : 0 secs             LSP Name used      : 8193
PMSI Owner     : bgpEvpnMpls          Root Bind Id       : 32767
Oper State     : up
-----
Type           : selective          wildcard-spmsi     : enabled
Admin State    : enabled           Data Delay Intvl   : 15 secs
PMSI Type      : ldp                    Maximum-p2mp-spmsi : 10
PMSI Owner     : bgpEvpnMpls
Oper State     : up
-----
Group-range    : 239.1.0.0/16        s-pmsi-threshold  : 10 kbps
Pe-threshold-add : 2                    Pe-threshold-delete: 10
-----
Group-range    : 239.2.0.0/24        s-pmsi-threshold  : 0 kbps
Pe-threshold-add : 3                    Pe-threshold-delete: 5
-----
```

The following command displays the service provider tunnel information and [Table 409: Show provider tunnel output fields](#) describes the output fields.

```
show service id provider-tunnel
```

### Output Example

```
=====
Service Provider Tunnel Information
=====
Type           : inclusive          Root and Leaf      : disabled
Admin State    : disabled            Data Delay Intvl   : 15 secs
PMSI Type      : none                LSP Template       :
Remain Delay Intvl : 0 secs          LSP Name used      :
PMSI Owner     : none

-----
Type           : selective          Wildcard SPMSI     : enabled
Admin State    : enabled            Data Delay Intvl   : 5 secs
PMSI Type      : mLdp              Max P2MP SPMSI    : 10
PMSI Owner     : bgpEvpnMpls

Group range    : 224.0.0.0/4
S-PMSI Threshold : 0 kbps
PE Threshold add : 65535                PE Threshold del   : 65535

Group range    : 239.0.0.0/8
S-PMSI Threshold : 1 kbps
PE Threshold add : 65535                PE Threshold del   : 65535
=====
```

The following command displays the service provider tunnel SPMSI information and [Table 409: Show provider tunnel output fields](#) describes the output fields.

```
show service id provider-tunnel spmsi-tunnels
```

### Output Example

```
=====
LDP Spmsi Tunnels
=====
LSP ID         : 8199
Root Address    : 192.0.2.4
S-PMSI If Index : 73743
Num. Leaf PEs  : 2
Uptime         : 0d 00:00:00
Group Address   : 239.0.0.4
Source Address  : 10.0.0.4
Origin IP Address : 192.0.2.4
State          : TX Join Pending
Remain Delay Intvl : 3

-----
LSP ID         : 8197
Root Address    : 192.0.2.4
S-PMSI If Index : 73739
Uptime         : 0d 00:28:37
Group Address   : * (wildcard)
Source Address  : *
Origin IP Address : 192.0.2.4
```

```
State          : TX Joined
Remain Delay Intvl : 0
-----
=====
```

The following command displays the service provider tunnel SPMSI detailed information and [Table 409: Show provider tunnel output fields](#) describes the output fields.

```
show service id provider-tunnel spmsi-tunnels detail
```

### Output Example

```
=====
LDP Spmsi Tunnels
=====
LSP ID          : 8199
Root Address    : 192.0.2.4
S-PMSI If Index : 73743
Num. Leaf PEs  : 2
Uptime         : 0d 00:00:03
Group Address   : 239.0.0.4
Source Address  : 10.0.0.4
Origin IP Address : 192.0.2.4
State          : TX Joined
Remain Delay Intvl : 0
Group Receiver PE : 192.0.2.2, 192.0.2.3
-----
LSP ID          : 8197
Root Address    : 192.0.2.4
S-PMSI If Index : 73739
Uptime         : 0d 00:28:44
Group Address   : * (wildcard)
Source Address  : *
Origin IP Address : 192.0.2.4
State          : TX Joined
Remain Delay Intvl : 0
-----
=====
```

Table 409: Show provider tunnel output fields

Label	Description
Service Provider Tunnel Information	
Type	The provider tunnel type (inclusive or selective)
Root and Leaf	The root and leaf status
Admin State	The administrative state
Data Delay Intvl	The data delay interval in seconds
PMSI Type	The PMSI type
LSP Template	The LSP template name
Remain Delay Intvl	The remaining delay interval in seconds

Label	Description
LSP Name used	The LSP name
PMSI Owner	The PMSI owner
Oper State	The operational state
Root Bind Id	The root binding ID
wildcard-spmsi/ Wildcard SPMSI	The wildcard SPMSI status
Maximum-p2mp- spmsi/Max P2MP SPMSI	The maximum P2MP SPMSI value
Group-range/Group range	The group range
s-pmsi-threshold/ S- PMSI Threshold	The SPMSI threshold so that the root node attempts to setup an S-PMSI tree, in Kbps
Pe-threshold-add/ PE Threshold add	The PE threshold add value
Pe-threshold-delete/ PE Threshold del	The PE threshold delete value
LDP Spmsi tunnels	
LSP ID	The LSP ID
Root Addr/Root Address	The root address
Spmsi IfIndex/S-PMSI If Index	The SPMSI If Index value
Num. Leaf PEs	The number of leaf PEs
Number of SGs	The number of SGs
Uptime	The cumulative up time
Group Address	The group address
Source Address	The source address
Origin IP Address	The origin IP address
State	The state value
S-pmsi Threshold	The SPMSI threshold value

Label	Description
Remain Delay Intvl	The remaining delay interval in seconds
Group Receiver PE	The group receiver PE IP address
Leaf Address	The Leaf IP addresses
Pe-threshold-add	The PE threshold add value
Pe-threshold-delete	The PE threshold delete value
Current Receiver PE Count	The current receive PE count value
LDP Spmsi Tunnels	The total number of SPMSI tunnels

## 18.102 provider-tunnel-using

### provider-tunnel-using

#### Syntax

**provider-tunnel-using leaf-only** [bgp-ad | bgp-vpls | bgp-evpn-mpls]

**provider-tunnel-using root-and-leaf** [bgp-ad | bgp-vpls | bgp-evpn-mpls]

#### Context

[\[Tree\]](#) (show>service provider-tunnel-using)

#### Full Context

show service provider-tunnel-using

#### Description

This command displays the list of provider tunnels existing in the router for all services. The output can be filtered based on the provider tunnel owner.

#### Parameters

##### leaf-only

Displays the leaf-only provider tunnels for all services.

##### root-and-leaf

Displays the root and leaf provider tunnels for all services.

##### bgp-ad

Filters the provider tunnels owned by BGP AD services.



### bgp-vpls

Filters the provider tunnels owned by BGP VPLS services.

### bgp-evpn-mpls

Filters the provider tunnels owned by BGP EVPN-MPLS services.

## Platforms

All

## Output

The following output is an example of provider tunnel using information.

### Output Example

```
A:PE-76# show service provider-tunnel-using root-and-leaf
=====
Provider-Tunnel Using (Root-and-Leaf)
=====
SvcId      SdpId          Owner          Admin Oper
           State         State
-----
300        32767:4294967294  bgpEvpnMpls  Up    Up
-----
Number of Root-and-Leaf : 1
=====
A:PE-76# show service provider-tunnel-using root-and-leaf bgp-evpn-mpls
=====
Provider-Tunnel Using (Root-and-Leaf)
=====
SvcId      SdpId          Owner          Admin Oper
           State         State
-----
300        32767:4294967294  bgpEvpnMpls  Up    Up
-----
Number of Root-and-Leaf : 1
=====
```

## 18.103 provider-tunnels

### provider-tunnels

#### Syntax

**provider-tunnels** [type {originating | terminating}]

#### Context

[\[Tree\]](#) (tools>dump>service>id provider-tunnels)

#### Full Context

tools dump service id provider-tunnels

## Description

This command dumps the inclusive or selective provider tunnels based on type.

## Platforms

All

## Output

Use the following command to display terminating provider tunnels.

```
tools dump service id provider-tunnels type terminating
```

### Output Example

```
=====
VPLS 1001 Inclusive Provider Tunnels Terminating
=====
ipmsi (RSVP)                P2MP-ID  Tunl-ID  Ext-Tunl-ID
-----
                        1001     61440   10.20.1.1
                        1001     64944   10.20.1.2
-----
```

Use the following command to display originating provider tunnels.

```
tools dump service id provider-tunnels type originating
```

### Output Example

```
=====
VPLS 1001 Inclusive Provider Tunnels Originating
=====
ipmsi (RSVP)                P2MP-ID  Tunl-ID  Ext-Tunl-ID
-----
ipmsi-1001-73728           1001     61440   10.20.1.3
-----
```

Use the following command to display both originating and terminating provider tunnels.

```
tools dump service id provider-tunnels
```

### Output Example

```
=====
VPLS 1001 Inclusive Provider Tunnels Originating
=====
ipmsi (RSVP)                P2MP-ID  Tunl-ID  Ext-Tunl-ID
-----
ipmsi-1001-73728           1001     61440   10.20.1.3
-----

=====
VPLS 1001 Inclusive Provider Tunnels Terminating
=====
ipmsi (RSVP)                P2MP-ID  Tunl-ID  Ext-Tunl-ID
```

```
-----  
1001 61440 10.20.1.1  
1001 64944 10.20.1.2  
-----
```

Use the following command to display both originating and terminating provider tunnels.

```
tools dump service id provider-tunnels
```

### Output Example

```
=====
VPLS 10000 Inclusive Provider Tunnels Originating
=====

No Tunnels Found
-----

=====
VPLS 10000 Inclusive Provider Tunnels Terminating
=====

No Tunnels Found
-----

=====
VPLS 10000 Selective Provider Tunnels Originating
=====
spm (LDP) Source-Addr      Group-Addr      Root-Addr      LSP-ID  Lsp-Name
-----
          10.0.0.4          239.0.0.4          192.0.2.4          8199    8199
          *                  *                  192.0.2.4          8197    8197
-----

=====
VPLS 10000 Selective Provider Tunnels Terminating
=====
spm (LDP) Source-Addr      Group-Addr      Root-Addr      LSP-ID  Lsp-Name
-----
-----
```

## 18.104 proxy-arp

```
proxy-arp
```

### Syntax

```
proxy-arp [ip-address] [detail]
```

```
proxy-arp [ip-address] dynamic
```

## Context

[Tree] (show>service>id proxy-arp)

## Full Context

```
show service id proxy-arp
```

## Description

This command displays, in a table, the existing proxy-ARP entries for a particular service. The table is populated by EVPN MAC routes that contain a MAC and an IP address, as well as static entries or dynamic entries from snooped ARP messages on access SAP or SDP-bindings.

A 7750 SR, 7450 ESS, or 7950 XRS that receives an ARP request from a SAP or SDP-binding performs a lookup in the proxy-ARP table for the service. If a match is found, the router replies to the ARP and does not allow ARP flooding in the VPLS service. If a match is not found, the ARP is flooded within the service if the configuration allows it.

The command allows for specific IP addresses to be displayed. Dynamic IP entries associated to a MAC list are displayed with the corresponding MAC list and resolve timers information.

## Parameters

### *ip-address*

Specifies an IP address.

**Values** a.b.c.d

### *detail*

Displays detailed information.

### *dynamic*

Displays detailed information about dynamic entries.

## Platforms

All

## Output

### Output Example

```
*A:PE-3# show service id 5 proxy-arp
-----
Proxy Arp
-----
Admin State       : enabled
Dyn Populate      : enabled
Age Time          : disabled          Send Refresh      : 120 secs
Table Size        : 250                Total              : 1
Static Count      : 0                  EVPN Count         : 0
Dynamic Count     : 1                  Duplicate Count    : 0
Dup Detect
-----
Detect Window     : 3 mins              Num Moves          : 5
Hold down         : 9 mins
Anti Spoof MAC    : None
EVPN
```

```
-----  
Garp Flood      : enabled          Req Flood      : enabled  
Static Black Hole : disabled  
EVPN Route Tag  : 10  
-----  
*A:PE-3# show service id 5 proxy-arp detail  
-----  
Proxy Arp  
-----  
Admin State      : enabled  
Dyn Populate     : enabled  
Age Time        : disabled       Send Refresh   : 120 secs  
Table Size      : 250            Total          : 1  
Static Count    : 0              EVPN Count    : 0  
Dynamic Count   : 1              Duplicate Count : 0  
Dup Detect  
-----  
Detect Window   : 3 mins         Num Moves     : 5  
Hold down      : 9 mins  
Anti Spoof MAC : None  
EVPN  
-----  
Garp Flood      : enabled          Req Flood      : enabled  
Static Black Hole : disabled  
EVPN Route Tag  : 10  
-----  
=====
```

VPLS Proxy Arp Entries

```
=====
```

IP Address	Mac Address	Type	Status	Last Update
10.0.0.1	00:ca:fe:ca:fe:01	dyn	active	12/20/2016 12:38:28

```
-----  
Number of entries : 1
```

```
=====
```

\*A:PE-3# show service id 5 proxy-arp dynamic

```
=====
```

Proxy ARP Dyn Cfg Summary

```
=====
```

IP Addr	Mac List
10.0.0.1	list-1

```
-----  
Number of Entries: 1  
=====
```

```
=====
```

\*A:PE-3# show service id 5 proxy-arp dynamic 10.0.0.1

```
=====
```

Proxy ARP Dyn Cfg Detail

```
=====
```

IP Addr	Mac List	Resolve Time (mins)	Remaining Resolve Time (secs)
10.0.0.1	list-1	1	0

```
-----  
Number of Entries: 1  
=====
```

## proxy-arp

### Syntax

```
proxy-arp [ip-address ip-address] [ detail]
```

### Context

[\[Tree\]](#) (show>service>id proxy-arp)

### Full Context

```
show service id proxy-arp
```

### Description

This command displays the proxy-ARP entries existing for a particular service. A 7750 SR, 7450 ESS or 7950 XRS router receiving an ARP request from a SAP or SDP-binding will perform a lookup in the proxy-arp table for the service. If the router finds a match, it will reply to the ARP and will not let the ARP be flooded in the VPLS service. If the router does not find a match, the ARP will be flooded within the service. The command allows for specific IP addresses to be shown.

The **detail** parameter allows the user to display all the entries. An individual IP address entry can also be shown.

### Platforms

All

### Output

The following output is an example of service proxy ARP information.

#### Output Example

```
:PE71(1)# show service id 600 proxy-arp
-----
Proxy Arp
-----
Admin State       : enabled
Dyn Populate      : enabled
Age Time          : 200 secs          Send Refresh      : 120 secs

Dup Detect
-----
Detect Window     : 3 mins          Num Moves         : 3
Hold down         : max
Anti Spoof MAC    : 00:ca:ca:ca:ca:ca

EVPN
-----
Garp Flood        : disabled          Req Flood         : disabled
-----
A:PE71(1)# show service id 600 proxy-arp detail
-----
Proxy Arp
-----
Admin State       : enabled
```

```

Dyn Populate      : enabled
Age Time         : 200 secs          Send Refresh    : 120 secs

Dup Detect
-----
Detect Window    : 3 mins           Num Moves       : 3
Hold down       : max
Anti Spoof MAC   : 00:ca:ca:ca:ca:ca

EVPN
-----
Garp Flood      : disabled         Req Flood       : disabled
-----

=====
VPLS Proxy Arp Entries
=====
IP Address      Mac Address      Type      Status      Last Update
-----
172.16.0.1      00:ca:fe:ca:fe:02  evpn      active      12/01/2014 12:02:27
172.16.0.61     00:ca:de:ba:ca:00  dyn       active      12/01/2014 15:40:10
172.16.0.100    00:00:00:00:00:01  stat      inActv     12/01/2014 12:01:57
172.16.0.102    00:00:00:00:00:02  stat      inActv     12/01/2014 12:01:57
-----
Number of entries : 4
=====
A:PE71(1)#
    
```

## proxy-arp

### Syntax

**proxy-arp**

### Context

[\[Tree\]](#) (tools>perform>service>id proxy-arp)

### Full Context

tools perform service id proxy-arp

### Description

Commands in this context provide proxy-arp tools.

### Platforms

All

## proxy-arp

### Syntax

**proxy-arp**

**proxy-arp duplicate** [*ip-address*]

**proxy-arp dynamic** [*ip-address*]

## Context

[\[Tree\]](#) (clear>service>id proxy-arp)

## Full Context

clear service id proxy-arp

## Description

This command allows all the duplicate or dynamic proxy-ARP entries to be cleared from the table. Individual IP entries can also be specified.

## Platforms

All

## proxy-arp

## Syntax

**proxy-arp usage**

## Context

[\[Tree\]](#) (tools>dump>service proxy-arp)

## Full Context

tools dump service proxy-arp

## Description

This command provides information about the usage and limit of the system-wide proxy-arp table for all the services. The command also shows if the limit has been exceeded and a trap raised.

## Platforms

All

## Output

### Output Example

```
*A:Dut# tools dump service proxy-arp usage
Proxy arp Usage
Current Usage      :          10
System Limit      :       511999
High Usage Trap Raised:      No
High Usage Threshold:    95 percent
High Usage Clear Threshold: 90 percent
```



## 18.105 proxy-arp-nd

### proxy-arp-nd

#### Syntax

```
proxy-arp-nd mac-list
proxy-arp-nd mac-list name
proxy-arp-nd mac-list name associations
```

#### Context

[\[Tree\]](#) (show>service proxy-arp-nd)

#### Full Context

```
show service proxy-arp-nd
```

#### Description

This command displays MAC address list information including MAC lists, MAC list details, and associations used in the **proxy-arp-nd** context.

#### Parameters

##### *name*

Name of the MAC address list for which the detailed information is shown; the name can be up to 32 characters.

##### **associations**

Mandatory keyword to display the service ID and dynamic IP to which the MAC list is associated.

#### Platforms

All

#### Output

##### Output Example

```
*A:PE-3# show service proxy-arp-nd mac-list
=====
MAC List Information
=====
MAC List Name                Last Change          Num Macs   Num Assocs
-----
list-1                       12/20/2016 09:21:13   3           1
-----
Number of Entries: 1
=====
```

```
*A:PE-3# show service proxy-arp-nd mac-list "list-1"
=====
MAC List MAC Addr Information
=====
MAC Addr                               Last Change
-----
00:ca:fe:ca:fe:01                       12/20/2016 09:21:13
00:ca:fe:ca:fe:02                       12/20/2016 09:21:13
00:ca:fe:ca:fe:03                       12/20/2016 09:21:13
-----
Number of Entries: 3
```

```
*A:PE-3# show service proxy-arp-nd mac-list "list-1" associations
=====
MAC List Associations
=====
Service Id          IP Addr
-----
5                   10.0.0.1
-----
Number of Entries: 1
=====
```

## 18.106 proxy-db

### proxy-db

#### Syntax

**proxy-db** [**detail**]

**proxy-db group** *grp-ipv6-address*

#### Context

[\[Tree\]](#) (show>service>id>mld-snooping proxy-db)

#### Full Context

show service id mld-snooping proxy-db

#### Description

This command displays proxy-reporting database entries.

#### Platforms

All

#### Output

The following output is an example of MLD snooping proxy database information.

## Output Example

```
*A:rbae_C# show service id 1 mld-snooping proxy-db
=====
MLD Snooping Proxy-reporting DB for service 1
=====
Group Address
      Mode      Up Time      Num Sources
-----
FF04:db8:1
      include  0d 00:01:01    1
FF04:db8:2
      include  0d 00:01:00    1
-----
Number of groups: 2
=====
*A:rbae_C#

*A:rbae_C# show service id 1 mld-snooping proxy-db detail
=====
MLD Snooping Proxy-reporting DB for service 1
-----
MLD Group FF04::1
-----
Up Time : 0d 00:01:03          Mode : include
-----
Source Address                Up Time
-----
2011:db8:1                    0d 00:01:03
-----
MLD Group FF04:db8:2
-----
Up Time : 0d 00:01:02          Mode : include
-----
Source Address                Up Time
-----
2011:db8:1                    0d 00:01:02
-----
Number of groups: 2
=====
*A:rbae_C#
```

## proxy-db

### Syntax

**proxy-db** [**detail**]

**proxy-db** group *grp-address*

### Context

[\[Tree\]](#) (show>service>id>igmp-snooping proxy-db)

### Full Context

show service id igmp-snooping proxy-db

## Description

This command displays information on the IGMP snooping proxy reporting database for the VPLS service.

## Parameters

### *grp-ip-address*

Displays the IGMP snooping proxy reporting database for a specific multicast group address.

## Platforms

All

## Output

### Output Example

```
*A:ALA-1>show>service>id>snooping# proxy-db
=====
IGMP Snooping Proxy-reporting DB for service 10
=====
Group Address      Mode      Up Time      Num Sources
-----
239.0.0.1         include   0d 00:05:40    2
-----
Number of groups: 1
=====
*A:ALA-1>show>service>id>snooping#

*A:ALA-1>show>service>id>snooping# proxy-db detail
=====
IGMP Snooping Proxy-reporting DB for service 10
-----
IGMP Group 239.0.0.1
-----
Up Time : 0d 00:05:54          Mode : include
-----
Source Address  Up Time
-----
1.1.1.1         0d 00:05:54
1.1.1.2         0d 00:05:54
-----
Number of groups: 1
=====
*A:ALA-1>show>service>id>snooping#
```

Table 410: IGMP Snooping proxy Fields describes the show output fields.

Table 410: IGMP Snooping proxy Fields

Label	Description
Group Address	The IP multicast group address for which this entry contains information.
Mode	Specifies the type of membership report(s) received on the interface for the group. In the include mode, reception of packets

Label	Description
	<p>sent to the specified multicast address is requested only from those IP source addresses listed in the source-list parameter of the IGMP membership report.</p> <p>In the "exclude" mode, reception of packets sent to the specified multicast address is requested from all IP source addresses except those listed in the source-list parameter.</p>
Up Time	The total operational time in seconds.
Num Sources	Indicates the number of IGMP group and source specific queries received on this interface.
Number of groups	Number of IGMP groups.
Source Address	The source address for which this entry contains information.

## 18.107 proxy-nd

### proxy-nd

#### Syntax

```
proxy-nd [ipv6-address] [detail]
proxy-nd [ipv6-address] dynamic
```

#### Context

[\[Tree\]](#) (show>service>id proxy-nd)

#### Full Context

```
show service id proxy-nd
```

#### Description

This command displays, in a table, the existing proxy-ND entries for a particular service. The table is populated by the EVPN MAC routes containing a MAC and an IPv6 address, as well as static entries or dynamic entries from snooped NA messages on access SAP or SDP-bindings.

A 7750 SR, 7450 ESS, or 7950 XRS that receives a Neighbor Solicitation (NS) from a SAP or SDP-binding performs a lookup in the proxy-ND table for the service. If a match is found, the router replies to the NS and does not allow NS flooding in the VPLS service. If a match is not found, the NS is flooded in the service if the configuration allows it.

The command allows for specific IPv6 addresses to be shown. Dynamic IPv6 entries associated to a MAC list are shown with the corresponding MAC list and resolve timers information.

## Parameters

### *ipv6-address*

Specifies an IPv6 address.

**Values** ipv6-address:  
x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
where:  
x - [0 to FFFF]H  
d - [0 to 255]D

### **detail**

Displays detailed information.

### **dynamic**

Displays detailed information about dynamic entries.

## Platforms

All

## Output

The following output is an example of proxy ND information and [Table 411: Output Fields: show service proxy-nd detail <ipv6-address>](#) describes the output fields.

### Output Example

```
A:node-2>show>service>id# proxy-nd
-----
Proxy ND
-----
Admin State       : enabled
Dyn Populate      : disabled
Age Time          : disabled           Send Refresh      : 120 secs
Table Size       : 250                Total              : 2
Static Count     : 1                  EVPN Count         : 1
Dynamic Count    : 0                  Duplicate Count    : 0
Process DAD NS   : enabled

Dup Detect
-----
Detect Window     : 3 mins             Num Moves          : 5
Hold down        : 9 mins
Anti Spoof MAC   : None

EVPN
-----
Unknown NS Flood : enabled           ND Advertise       : Host
Rtr Unsol NA Flood: enabled       Host Unsol NA Fld : enabled
EVPN Route Tag   : 0
-----
```

The following output is an example of proxy ND detailed information and [Table 411: Output Fields: show service proxy-nd detail <ipv6-address>](#) describes the output fields.

### Output Example

```
A:node-2>show>service>id# proxy-nd detail
-----
Proxy ND
-----
Admin State      : enabled
Dyn Populate     : disabled
Age Time        : disabled          Send Refresh    : 120 secs
Table Size      : 250              Total           : 2
Static Count    : 1                EVPN Count      : 1
Dynamic Count   : 0                Duplicate Count  : 0
Process DAD NS  : enabled

Dup Detect
-----
Detect Window    : 3 mins          Num Moves       : 5
Hold down       : 9 mins
Anti Spoof MAC  : None

EVPN
-----
Unknown NS Flood : enabled          ND Advertise    : Host
Rtr Unsol NA Flood: enabled       Host Unsol NA Fld : enabled
EVPN Route Tag   : 0
-----

=====
VPLS Proxy ND Entries
=====
IP Address      Mac Address      Type Status Flags  Last Update
-----
2001:db8:15::4  00:ca:ca:00:00:04 stat active R I 0  12/05/2022 15:20:34
2001:db8:15::5  00:ca:ca:00:00:05 evpn active R      12/05/2022 15:21:28
-----
Number of entries : 2
Legend : I=Immutable, 0=Override, R=Router, H=Host
=====
```

The following output is an example of proxy ND detailed information and [Table 411: Output Fields: show service proxy-nd detail <ipv6-address>](#) describes the output fields.

### Output Example

```
A:node-2>show>service>id# proxy-nd detail
ipv6-address
-----
Proxy ND
-----
Admin State      : enabled
Dyn Populate     : disabled
Age Time        : disabled          Send Refresh    : 120 secs
Table Size      : 250              Total           : 2
Static Count    : 1                EVPN Count      : 1
Dynamic Count   : 0                Duplicate Count  : 0
Process DAD NS  : enabled

Dup Detect
-----
Detect Window    : 3 mins          Num Moves       : 5
Hold down       : 9 mins
Anti Spoof MAC  : None
```

```

EVPN
-----
Unknown NS Flood : enabled          ND Advertise      : Host
Rtr Unsol NA Flood: enabled        Host Unsol NA Fld : enabled
EVPN Route Tag   : 0
-----
IP Address       : 2001:db8:15::4    MAC Address       : 00:ca:ca:00:00:04
Type             : stat             Status            : active
Rtr/Host        : Rtr
Immutable       : Yes               EVPN Override    : Yes
    
```

Table 411: Output Fields: show service proxy-nd detail <ipv6-address>

Label	Description
Proxy ND	
Admin State	The administrative state of proxy-nd
Dyn Populate	The addition of dynamic entries to the table
Age Time	The aging timer for proxy entries, where entries are flushed upon timer expiry
Send Refresh	The time at which to send a refresh message in seconds
Table Size	The maximum number of learned and static entries allowed in the proxy table of the service
Total	The total number of entries in the service
Static Count	The current number of static entries in the service
EVPN Count	The current number of EVPN entries in the service
Dynamic Count	The current number of dynamic entries in the service
Duplicate Count	The current number of duplicate entries in the service
Process DAD NS	The response to DAD neighbor solicitations
Dup Detect	
Detect Window	The window size in minutes
Num Moves	The number of moves required to declare a duplicate entry
Hold down	The hold-down time for a duplicate entry
Anti Spoof MAC	The MAC address to replace the proxy-nd offending entry's MAC
EVPN	



Label	Description
Unknown NS Flood	Displays if unknown Neighbor Solicitation messages floods into the EVPN network
ND Advertise	The advertisement of static or dynamic entries that are learned as host or routers
Rtr Unsol NA Flood	Displays if system floods router unsolicited Neighbor Advertisements to EVPN
Host Unsol NA Fld	Displays if the system floods host unsolicited Neighbor Advertisements to the EVPN
EVPN Route Tag	The route tag of the entry
IP Address	The IP address of proxy-nd
Mac Address	The optional anti-spoof-mac to use
Type	The type of entry
Status	The status of entry
Rtr/Host	The static or dynamic entries are learned as host or routers
Immutable	-
EVPN Override	The EVPN override context

The following output is an example of proxy ND dynamic information and [Table 412: Output Fields: show service proxy-nd dynamic](#) describes the output fields.

### Output Example

```
A:node-2>show>service>id# proxy-nd dynamic
=====
Proxy ND Dyn Cfg Summary
=====
IP Addr                               Mac List
-----
2001:db8:1000::1                       list-1
-----
Number of Entries: 1
=====
```

The following output is an example of proxy ND dynamic information and [Table 412: Output Fields: show service proxy-nd dynamic](#) describes the output fields.

### Output Example

```
A:node-2>show>service>id# proxy-nd dynamic
ipv6-address
=====
Proxy ND Dyn Cfg Detail
=====
IP Addr                               Mac List
```

```

Resolve Time(mins)                Remaining Resolve Time(secs)
-----
2001:db8:1000::1                list-1
1                                0
-----
Number of Entries: 1
=====
    
```

Table 412: Output Fields: show service proxy-nd dynamic

Label	Description
Proxy ND Dyn Cfg Summary	
IP Addr	The IP address of proxy-nd dynamic
Mac List	The MAC list for dynamic entry
Resolve Time (mins)	The resolve time in minutes
Remaining Resolve Time (secs)	The remaining resolve time in seconds
Number of Entries	The total number of entries

## proxy-nd

### Syntax

**proxy-nd**

### Context

[\[Tree\]](#) (tools>perform>service>id proxy-nd)

### Full Context

tools perform service id proxy-nd

### Description

Commands in this context provide proxy-nd tools.

### Platforms

All

## proxy-nd

### Syntax

```
proxy-nd  
proxy-nd duplicate [ipv6-address]  
proxy-nd dynamic [ipv6-address]
```

### Context

[\[Tree\]](#) (clear>service>id proxy-nd)

### Full Context

```
clear service id proxy-nd
```

### Description

This command allows all the duplicate or dynamic proxy-ND entries to be cleared from the table. Individual IPv6 entries can also be specified.

### Platforms

All

## proxy-nd

### Syntax

```
proxy-nd usage
```

### Context

[\[Tree\]](#) (tools>dump>service proxy-nd)

### Full Context

```
tools dump service proxy-nd
```

### Description

This command provides information about the usage and limit of the system-wide proxy-nd table for all the services. The command also shows if the limit has been exceeded and a trap raised.

### Platforms

All

### Output

## Output Example

```
*A:Dut# tools dump service proxy-nd usage
Proxy nd Usage
Current Usage      :          0
System Limit      :    511999
High Usage Trap Raised:      No
High Usage Threshold:    95 percent
High Usage Clear Threshold:  90 percent
```

## 18.108 psb

psb

### Syntax

```
psb [endpoint endpoint-address] [sender sender-address] [tunnelid tunnel-id] [lspid lsp-id] [detail]
    [status {up | down}]
```

### Context

[\[Tree\]](#) (tools>dump>router>rsvp psb)

### Full Context

```
tools dump router rsvp psb
```

### Description

This command displays path state block (PSB) information for RSVP.

When a PATH message arrives at an LSR, the LSR stores the label request in the local PSB for the LSP. If a label range is specified, the label allocation process assigns a label from that range.

The PSB contains the IP address of the previous hop, and the session, sender, and TSPEC. This information is used to route the corresponding RESV message back to LSR 1.

### Parameters

#### **endpoint *endpoint-address***

Specifies the IP address of the last hop.

#### **sender *sender-address***

Specifies the IP address of the sender.

#### **tunnelid *tunnel-id***

Specifies the SDP ID.

**Values** 0 to 4294967295

#### ***lspid lsp-id***

Specifies the label switched path that is signaled for this entry.

**Values** 1 to 65535

**detail**

Displays detailed RSVP PSB information.

**status {up | down}**

Specifies the LSP status.

**Platforms**

All

**Output**

The following output is an example of MPLS RSVP PSB information.

**Output Example**

```
*A:Dut-C# tools dump router rsvp psb detail
-----
PSB:
P2P: Session (To: 10.20.1.6 - 6 - 10.20.1.3), Sender (10.20.1.3 - 41986) PHop 0.0.0
.0
PSB CurrState: PRIMARYS_CONNECTED PrevState: PRIMARYS_INIT Flags: 0x0
LocalLabel 0 OutLabel 524277
Incoming IfIndex: Interface: Local API(-1)
Refresh interval 5, Send Path refresh in 1 secs, Path Refresh timeout 0 secs
PrevHop: Ctype 1 Addr 0.0.0.0, LIH 0
DnStream Nbr: Addr-> 10.10.11.4 IfIndex ip-10.10.11.3(5)
UpStream Neighbor is NULLP
Session Attribute:
  Session Name: 6::6
  HoldPri: 0 SetupPri: 7 Flags: 0x6
  Ctype: 7, IncludeGroup: 0x0 IncludeAllGroup: 0x0 ExcludeGroup: 0x0
ClassType: Absent
TSpec: Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps) MTU: 150
0
CSPF Hop List: ->
(1) Ipv4Addr 10.10.11.3 RtrId 10.20.1.3 EgrAdmGrp 0x0 (Strict)
(2) Ipv4Addr 10.10.11.4 RtrId 10.20.1.4 EgrAdmGrp 0x0 (Strict)
(3) Ipv4Addr 10.10.9.6 RtrId 10.20.1.6 EgrAdmGrp 0x0 (Strict)
PSB RR0 : ->
(1) * Flags : 0x0 : I
(1) * IPv4 -> 10.10.11.3(10.20.1.3)
PSB SENT RR0 : ->
(1) * Flags : 0x0 : I
(1) * IPv4 -> 10.10.11.3(0.0.0.0)
PSB FILTERSPEC RR0 : ->
(1) * Flags : 0x0 : I
(1) * IPv4 -> 10.10.11.4(10.20.1.4)
(2) * Flags : 0x1 : Global
(2) * Label : 524277
(3) * Flags : 0x0 : I
(3) * IPv4 -> 10.10.9.6(10.20.1.6)
(4) * Flags : 0x1 : Global
(4) * Label : 524279
PSB ERO : ->
(1) IPv4Prefix 10.10.11.4/32, Strict
(2) IPv4Prefix 10.10.9.6/32, Strict
PSB SENT ERO : ->
(1) IPv4Prefix 10.10.11.4/32, Strict
(2) IPv4Prefix 10.10.9.6/32, Strict
```

```
SendTempl: Sender:10.20.1.3_41986
Sent AdSpec: Flags 0x2
AdSpec General
- Service Break bit : 0x0
- IS Hop Count : 0x0
- Path Bandwidth Estimate : 0x0
- Minimum Path latency : 0xffffffff
- Composed path MTU : 1500
AdSpec Controlled Load
- Service Break bit : 0x0
Num Paths Received :0
Num Paths Transmitted:6
Num Resvs Received :7
Num Resvs Transmitted:0
Num Summary Paths Received :0
Num Summary Paths Transmitted:0
Num Summary Resvs Received :0
Num Summary Resvs Transmitted:0
Created at 1804 (26 secs back)
-----
Total PSB Count : 1
*A:Dut-C#
*A:Dut-D# show router mpls lsp transit
=====
MPLS LSPs (Transit)
=====
Legend : @ - Active Detour
=====
From To In I/F Out I/F State LSP Name
-----
10.20.1.3 10.20.1.6 1/1/4 1/1/2 Up
6::6
-----
LSPs : 1
-----
*A:Dut-D# tools dump router rsvp psb detail
-----
PSB:
P2P: Session (To: 10.20.1.6 - 6 - 10.20.1.3), Sender (10.20.1.3 - 41986) PHop 10.10
.11.3
PSB CurrState: PRIMARYS_CONNECTED PrevState: PRIMARYS_INIT Flags: 0x0
LocalLabel 524277 OutLabel 524279
Incoming IfIndex: ip-10.10.11.4(5)
Refresh interval 5, Send Path refresh in 3 secs, Path Refresh timeout 24 secs
Send Resv refresh in 4 secs
PrevHop: Ctype 1 Addr 10.10.11.3, LIH 5
DnStream Nbr: Addr-> 10.10.9.6 IfIndex ip-10.10.9.4(3)
UpStream Nbr: Addr-> 10.10.11.3 IfIndex ip-10.10.11.4(5)
Session Attribute:
  Session Name: 6::6
  HoldPri: 0 SetupPri: 7 Flags: 0x6
  Ctype: 7, IncludeGroup: 0x0 IncludeAllGroup: 0x0 ExcludeGroup: 0x0
ClassType: Absent
TSpec: Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps) MTU: 150
0
PSB RR0 : ->
(1) * Flags : 0x0 : I
(1) * IPv4 -> 10.10.11.3(0.0.0.0)
PSB SENT RR0 : ->
(1) * Flags : 0x0 : I
(1) * IPv4 -> 10.10.9.4(0.0.0.0)
(2) * Flags : 0x0 : I
(2) * IPv4 -> 10.10.11.3(0.0.0.0)
PSB FILTERSPEC RR0 : ->
```

```
(1) * Flags : 0x0 : I
(1) * IPv4 -> 10.10.9.6(0.0.0.0)
(2) * Flags : 0x1 : Global
(2) * Label : 524279
PSB ERO : ->
(1) IPv4Prefix 10.10.11.4/32, Strict
(2) IPv4Prefix 10.10.9.6/32, Strict
PSB SENT ERO : ->
(1) IPv4Prefix 10.10.9.6/32, Strict
SendTempl: Sender:10.20.1.3_41986
Received AdSpec: Flags 0x2
AdSpec General
- Service Break bit : 0x0
- IS Hop Count : 0x0
- Path Bandwidth Estimate : 0x0
- Minimum Path latency : 0xffffffff
- Composed path MTU : 1500
AdSpec Controlled Load
- Service Break bit : 0x0
Sent AdSpec: Flags 0x2
AdSpec General
- Service Break bit : 0x0
- IS Hop Count : 0x0
- Path Bandwidth Estimate : 0x0
- Minimum Path latency : 0xffffffff
- Composed path MTU : 1500
AdSpec Controlled Load
- Service Break bit : 0x0
Num Paths Received :12
Num Paths Transmitted:12
Num Resvs Received :13
Num Resvs Transmitted:14
Num Summary Paths Received :0
Num Summary Paths Transmitted:0
Num Summary Resvs Received :0
Num Summary Resvs Transmitted:0
Created at 1786 (55 secs back)
-----
Total PSB Count : 1
*A:Dut-D#
*A:Dut-F# show router mpls lsp terminate
=====
MPLS LSPs (Terminate)
=====
Legend : @ - Active Detour
=====
From To In I/F Out I/F State LSP Name
-----
10.20.1.3 10.20.1.6 1/1/1 n/a Up
6::6
-----
LSPs : 1
-----
*A:Dut-F# tools dump router rsvp psb detail
-----
PSB:
P2P: Session (To: 10.20.1.6 - 6 - 10.20.1.3), Sender (10.20.1.3 - 41986) PHop 10.10
.9.4
PSB CurrState: PRIMARYS_CONNECTED PrevState: PRIMARYS_IDLE Flags: 0x0
LocalLabel 524279 OutLabel 0
Incoming IfIndex: ip-10.10.9.6(2)
Refresh interval 5, Send Path refresh in 0 secs, Path Refresh timeout 23 secs
Send Resv refresh in 3 secs
PrevHop: Ctype 1 Addr 10.10.9.4, LIH 3
```

```
DnStream, Nbr: Addr-> 0.0.0.0 IfIndex Interface: Local API(-1)
UpStream Nbr: Addr-> 10.10.9.4 IfIndex ip-10.10.9.6(2)
Session Attribute:
  Session Name: 6::6
  HoldPri: 0 SetupPri: 7 Flags: 0x6
  Ctype: 7, IncludeGroup: 0x0 IncludeAllGroup: 0x0 ExcludeGroup: 0x0
ClassType: Absent
TSpec: Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps) MTU: 150
0
PSB RR0 : ->
  (1) * Flags : 0x0 : I
  (1) * IPv4 -> 10.10.9.4(0.0.0.0)
  (2) * Flags : 0x0 : I
  (2) * IPv4 -> 10.10.11.3(0.0.0.0)
PSB SENT RR0 : ->
NULL RR0
PSB FILTERSPEC RR0 : ->
NULL RR0
PSB ERO : ->
  (1) IPv4Prefix 10.10.9.6/32, Strict
SendTempl: Sender:10.20.1.3_41986
Received AdSpec: Flags 0x2
AdSpec General
- Service Break bit : 0x0
- IS Hop Count : 0x0
- Path Bandwidth Estimate : 0x0
- Minimum Path latency : 0xffffffff
- Composed path MTU : 1500
AdSpec Controlled Load
- Service Break bit : 0x0
Num Paths Received :16
Num Paths Transmitted:0
Num Resvs Received :0
Num Resvs Transmitted:18
Num Summmary Paths Received :0
Num Summmary Paths Transmitted:0
Num Summmary Resvs Received :0
Num Summmary Resvs Transmitted:0
Created at 1773 (74 secs back)
-----
Total PSB Count : 1
```

## 18.109 ptp

ptp

### Syntax

ptp

### Context

[\[Tree\]](#) (show>service>id ptp)

### Full Context

show service id ptp



## Description

This command displays Precision Timing Protocol (PTP) information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following command shows PTP service information and [Table 413: Output Fields: show service id <id> ptp](#) describes the output fields.

```
show service id ptp
```

```
-----  
PTP Configuration  
-----  
Admin State      : up           Oper State       : up  
Peer Limit       : none  
=====
```

Table 413: Output Fields: show service id <id> ptp

Label	Description
Admin State	The administrative state of PTP
Oper State	The operational state of PTP
Peer Limit	The maximum number of PTP peers that the system may create automatically

ptp

## Syntax

ptp

## Context

[\[Tree\]](#) (show>system ptp)

## Full Context

show system ptp

## Description

This command displays Precision Time Protocol (PTP) configuration and state information. This information can be displayed for the entire node or on a per router instance basis.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of PTP information, and [Table 414: System PTP Field Descriptions](#) describes the output fields.

### Output Example

```

show system ptp

=====
IEEE 1588/PTP Clock Information
=====
-----
Local Clock
-----
Clock Type       : boundary      PTP Profile      : ITU-T G.8275.2
Domain          : 44             Network Type     : sdh
Admin State     : up             Oper State       : up
Announce Interval : 1 pkt/2 s    Announce Rx Timeout: 3 intervals
Peer Limit      : none (Base Router)
G.8275 Priority  : 128           PTSF-unusable    : n/a
Clock Id        : e48184ffffeae2b34  Clock Class      : 165
Clock Accuracy  : unknown        Clock Variance   : ffff (not computed)
Clock Priority1  : 128           Clock Priority2   : 128
Steps Removed   : 11
Sync Uncertain  : true           Reason Uncertain : PTP time not locked
TxWhileSyncUncert : true
-----
Parent Clock
-----
Port            : A/gnss
Parent Clock Id : ca47fffffe000000  Remote PTP Port  : 65534
GM Clock Id     : ca47fffffe000000  GM Clock Class   : 6
GM Clock Accuracy : within 100 ns    GM Clock Variance : 0x4e5d (1.8E-15)
GM Clock Priority1: 128           GM Clock Priority2 : 128
Sync Uncertain  : false
-----
Backup Clock Source
-----
IP Address      : 1.1.1.1
Router          : Base
-----
Time Properties
-----
Timescale       : PTP
Frequency Traceable : yes
Time Traceable  : yes
Time Source     : GPS
UTC Offset      : +37 seconds
Leap Second     : no leap second pending
-----
Central Frequency Clock
-----
Status          : locked      Quality : prc
Reference Selected : ptp
-----
PTP Frequency Recovery
-----
Frequency Recovery State : locked      Changed : 2022/01/15 03:58:10
    
```

```

Frequency Offset          : +53.931 ppb
-----
PTP Time Recovery
-----
Current Time             : 2022/01/15 07:23:57.7 (UTC)
Time Recovery State      : locked           Changed   : 2022/01/15 07:11:15
Last Packet Offset From Master : +7,628 ns      Last Calc: 2022/01/15 07:23:59
Last Packet Mean Path Delay  : +32,563 ns    Last Calc: 2022/01/15 07:23:59
Last Adjustment          : +33 ns           Last Calc: 2022/01/15 07:23:59
=====
    
```

Table 414: System PTP Field Descriptions

Label	Description
Local Clock	
Clock Type	The type of clock of the network element. <ul style="list-style-type: none"> <li>ordinarySlave — The system is always a TimeReceiver clock in the PTP hierarchy. The system derives its timing from one or more TimeTransmitter clocks in the network.</li> <li>ordinaryMaster — The system is a grandmaster clock in the PTP hierarchy. The system provides timing to multiple TimeReceiver clocks in the network.</li> <li>boundary — The system is a boundary clock, which may be anywhere in the PTP clock hierarchy. It can obtain timing from a TimeTransmitter clock, and provide timing to multiple Time Receiver clocks.</li> </ul>
PTP Profile	The Precision Time Protocol (PTP) profile specifies the standard to which PTP conforms <ul style="list-style-type: none"> <li>g8265dot1-2010 — The PTP profile specified in the ITU-T G.8265.1 recommendation</li> <li>ieee1588-2008 — The default PTP profile specified in the IEEE 1588-2008 standard</li> <li>g8275dot1-2014 — The PTP profile specified in the ITU-T G.8275.1 recommendation</li> </ul>
Domain	The domain in which PTP 1588 runs on the system
Network Type	The SR OS is configured to use PTP clock classes corresponding to either SONET or SDH quality levels
Admin State	The administrative state of PTP
Oper State	The operational state of PTP
Announce Interval	The packet rate requested in REQUEST_UNICAST_TRANSMISSION signaling messages for announce packets

Label	Description
Announce Rx Timeout	The number of announce intervals that have to occur without receiving a PTP announce message before the PTP event ANNOUNCE_RECEIPT_TIMEOUT_EXPIRES occurs
Peer Limit	The maximum number of PTP peers that may be automatically created by the system on this router instance
G.8275.1 Priority	The priority used in the best TimeTransmitter clock algorithm for the local (internal) PTP port when Clock Profile is g8275dot1-2014
PTSF-unusable	The PTSF unusable administrative state
Clock ID	The clock Identity value of the local PTP clock (defaultDS)
Clock Class	The clockClass value of the local PTP clock (defaultDS)
Clock Accuracy	The clockAccuracy value accuracy of the local PTP clock (defaultDS)
Clock Variance	The offsetScaledLogVariance value of the local PTP clock (defaultDS)
Clock Priority1	The priority1 value of the local PTP clock (defaultDS)
Clock Priority2	The priority2 value of the local PTP clock (defaultDS)
Steps Removed	The steps removed value used in Announce messages sent from this PTP clock
Sync Uncertain	For the local clock: the value of the synchronization uncertainty that is used in Announce messages transmitted by this node.  For the parent clock: the value received in the Announce messages from that clock.
Reason Uncertain	Provides an explanation for a Sync Uncertain true indication. <ul style="list-style-type: none"> <li>• parent uncertain — Parent clock has syncUncertain true in its Announce messages</li> <li>• parent clock class — Parent clock quality is not clockClass 6</li> <li>• local clock class — Local clock is the parent clock and the local clock quality is not clockClass 6</li> <li>• sets not locked — Central frequency clock is not locked to a reference</li> <li>• sets quality — Central frequency clock is locked to a reference that is not PRC or PRS</li> <li>• time not locked — PTP time algorithm is not locked</li> <li>• freq not locked — PTP frequency algorithm is not locked</li> </ul>
TxWhileSync Uncertain	The value of the <b>tx-while-sync-uncertain</b> configuration item

Label	Description
PTP Port State	The PTP port state. Only shown for ordinary clocks which contain only one PTP port
Last Changed	The date and time of the last change of the PTP port state
Parent Clock	
Port	The port that is being used as a backup to a local GNSS time source
Remote MAC Address	The MAC address of the parent clock port sending PTP message to the local PTP clock
Parent Clock ID	The clock Identity of the parent clock
Remote PTP Port	The port number of the PTP port on the parent clock that is used to communicate with the local PTP clock
Local Clock is Parent Clock	Displayed if there is no external parent clock
GM Clock Id	The clockIdentity value of the grandmaster clock advertised by the parent clock
GM Clock Class	The clockClass value of the grandmaster clock advertised by the parent clock
GM Clock Accuracy	The clockAccuracy value of the grandmaster clock advertised by the parent clock
GM Clock Variance	The offsetScaledLogVariance value of the grandmaster clock advertised by the parent clock
GM Clock Priority1	The priority1 value of the grandmaster clock advertised by the parent clock
GM Clock Priority2	The priority2 value of the grandmaster clock advertised by the parent clock
Backup Clock Source	
IP Address	The address of the external clock that is being used as a backup to a local GNSS time source
Router	The routing instance that contains the external PTP clock being used as a backup
Time Properties	
Timescale	The time scale of the time distributed by PTP
Frequency Traceable	Indicates if the time distributed by PTP is traceable a primary reference

Label	Description
Time Traceable	Indicates if the time distributed by PTP is traceable to a primary reference
Time Source	The source of time used by the grandmaster clock
UTC Offset	The current offset between the International Atomic Time (TAI) and Universal Coordinated Time (UTC) timescales
Leap Second	Indicates if there is a leap second pending
Central Frequency Clock	
Status	The state of the central frequency clock
Quality	The quality level of the source into the central frequency clock
Reference Selected	The reference currently in use as the source into the central frequency clock
PTP Frequency Recovery	
Frequency Recovery State	<p>The state of the frequency recovery algorithm.</p> <ul style="list-style-type: none"> <li>notApplicable — The system is not attempting to recover a clock.</li> <li>initial — The system is configured to recover a clock, but not enough information has yet been received to adjust the local clock to match a TimeTransmitter clock.</li> <li>acquiring — The system has enough information to attempt clock recovery, and has started the process of adjusting its local clock frequency to match the TimeTransmitter clock.</li> <li>phaseTracking — The system has adjusted its local clock to the approximate frequency of the TimeTransmitter clock, and is adjusting the local clock to minimize the phase difference between the two clocks.</li> <li>holdover — The system has stopped receiving useful information from the chosen TimeTransmitter clock, and is maintaining the last estimated frequency for its local clock.</li> <li>locked — The system is locked to the chosen TimeTransmitter clock and the phase error between the TimeTransmitter clock and the local clock is relatively small.</li> </ul>
Last Changed	The date and time of the last change of the PTP Recovery State
Frequency Offset	The offset computed by the frequency recovery algorithm required to align the local oscillator to the frequency of the parent clock. The value is provided in parts per billion. Positive values indicate that the recovered clock is faster than nominal, and negative values indicate that the recovered clock is slower than nominal.
PTP Time Recovery	

Label	Description
Current Time	The date and time. If the timescale is PTP, then the time is converted to UTC time based on the current offset between UTC and PTP time.
Time Recovery State	The state of the time recovery algorithm. <ul style="list-style-type: none"> <li>acquiring — The time recovery is active but it is not in locked or holdover state</li> <li>locked — The time recovery algorithm is generating time adjustments within the locked performance range</li> <li>holdover — No adjustment has been made out of the time recovery algorithm for a period of time</li> </ul>
Last Packet Offset From Master	The offsetFromMaster calculated from the last packet exchange with the parent clock
Last Calc	The time at which the previous field was calculated
Last Packet Mean Path Delay	The meanPathDelay calculated from the last packet exchange with the parent clock
Last Adjustment	The nanosecond change to the local time scale that last came out of the time recovery algorithm

## ptp

### Syntax

ptp

### Context

[\[Tree\]](#) (clear>system ptp)

[\[Tree\]](#) (clear>service>id ptp)

### Full Context

clear system ptp

clear service id ptp

### Description

Commands in this context clear Precision Timing Protocol (PTP) information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 18.110 ptsf-unusable

ptsf-unusable

### Syntax

**ptsf-unusable**

### Context

[\[Tree\]](#) (clear>system>ptp>port>neighbor ptsf-unusable)

### Full Context

clear system ptp port neighbor ptsf-unusable

### Description

This command clears the PTSF-unusable condition from the neighbor PTP clock.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 18.111 public-static-devices

public-static-devices

### Syntax

**public-static-devices** [*mac ieee-address*]

### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg>gateway public-static-devices)

### Full Context

show subscriber-mgmt vrgw brg gateway public-static-devices

### Description

This command displays public static device mappings.

### Parameters

*ieee-address*

Specifies the MAC address, up to 30 characters.



## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 18.112 pw

```
pw
```

### Syntax

```
pw
```

### Context

[\[Tree\]](#) (tools>perform>service>id>loopback pw)

[\[Tree\]](#) (tools>perform>service>id>admin-lock pw)

### Full Context

```
tools perform service id loopback pw
```

```
tools perform service id admin-lock pw
```

### Description

In the admin-lock context, this command administratively locks the specified spoke SDP by locking the host service. The command must be executed at both ends of the PW or MS-PW represented by the spoke SDP. Test traffic can then be injected using a test SAP.

In the loopback context, this command enters the MPLS-TP PW context for starting or stopping a loopback on a specified spoke SDP. An administrative lock should first be applied to both ends of the PW or MS-PW represented by the spoke SDP prior to configuring the loopback.

Loopback functions for MPLS-TP pseudowire can be specified for either a T-PE or S-PE.

## Platforms

All

## 18.113 pw-port

```
pw-port
```

### Syntax

```
pw-port [pw-port-id] [detail]
```

```
pw-port sdp sdp-id
```

```
pw-port sdp none
```

## **pw-port [pw-port-id] statistics**

### **Context**

[\[Tree\]](#) (show pw-port)

### **Full Context**

show pw-port

### **Description**

Displays pseudo-wire port information.

If no optional parameters are specified, the command displays a summary of all defined PW ports. The optional parameters restrict output to only ports matching the specified properties.

### **Parameters**

#### ***pw-port-id***

Specifies the pseudo-wire port identifier.

**Values** 1 to 10239

#### **detail**

Displays detailed port information that includes all the **pw-port** output fields.

#### ***sdp-id***

The SDP ID for which to display matching PW port information.

**Values** 1 to 17407

#### **statistics**

Displays port statistics information.

### **Platforms**

All

### **Output**

The following outputs are example of PW port information.

#### **Output Example**

```
#show pw-port
=====
PW Port Information
=====
PW Port   Encap      SDP      IfIndex      VC-Id
-----
1         dot1q      1        1526726657   1
2         qinq      1        1526726658   2
3         dot1q      1        1526726659   3
4         qinq      1        1526726660   4
=====

#show pw-port 3
=====
```

```

PW Port Information
=====
PW Port   Encap      SDP      IfIndex      VC-Id
-----
3         dot1q      1        1526726659   3
=====

#show pw-port sdp none

PW Port Information
=====
PW Port   Encap      SDP      IfIndex      VC-Id
-----
5         dot1q      1        1526726661
=====

#show pw-port sdp 1

PW Port Information
=====
PW Port   Encap      SDP      IfIndex      VC-Id
-----
1         dot1q      1        1526726657   1
2         qinq      1        1526726658   2
3         dot1q      1        1526726659   3
4         qinq      1        1526726660   4
=====
    
```

Table 415: Show PW-Port Output Fields describes the pw-port output fields.

Table 415: Show PW-Port Output Fields

Label	Description
PW Port	The PW port identifier
Encap	The encapsulation type of the PW port
SDP	The SDP identifier
IfIndex	The interface index used for the PW port
VC-Id	The Virtual Circuit identifier

### Output Example

```

#show pw-port 10 detail
=====
PW Port Information
=====
PW Port           : 10
Encap             : dot1q
SDP               : 1
IfIndex           : 1526726666
VC-Id            : 2
Description       : PW Port
Dot1Q Ethertype   : 0x8100
    
```

```

Service ID                : 20211
Down on Peer Tldp PW Status Faults: No
Oper Up on MH Standby    : No
=====
Service Destination Point (Sdp Id 1 Pw-Port 10)
=====
SDP Binding port        : 1/1/c1/3
VC-Id                   : 2                Admin Status      : up
Encap                   : dot1q           Oper Status       : up
VC Type                 : ether
Dot1Q Ethertype        : 0x8100
Control Word           : Not Preferred
Entropy Label          : Enabled
Service MTU            : default

Admin Ingress label    : None                Admin Egress label : None
Oper Flags             : (Not Specified)
Monitor Oper-Group    : (Not Specified)

#show service id 2147483649 sdp 1:2 detail
=====
Service Destination Point (Sdp Id : 1:2) Details
=====
-----
Sdp Id 1:2  -(10.20.1.2)
-----
Description           : Default sdp description
SDP Id                : 1:2                Type              : Spoke
Spoke Descr           : (Not Specified)
Split Horiz Grp       : (Not Specified)
Etree Root Leaf Tag  : Disabled           Etree Leaf AC     : Disabled
VC Type               : Ether              VC Tag            : n/a
Admin Path MTU        : 0                 Oper Path MTU     : 1514
Delivery              : MPLS
Far End               : 10.20.1.2          Tunnel Far End    :
Oper Tunnel Far End   : 10.20.1.2
LSP Types             : LDP
Hash Label            : Disabled           Hash Lbl Sig Cap  : Disabled
Oper Hash Label       : Disabled
Entropy Label         : Enabled

Admin State           : Up                Oper State         : Up
MinReqd SdpOperMTU   : n/a
Acct. Pol             : None              Collect Stats     : Disabled
Ingress Label         : 524276            Egress Label      : 524281
Ingr Mac Fltr-Id     : n/a              Egr Mac Fltr-Id  : n/a
Ingr IP Fltr-Id      : n/a              Egr IP Fltr-Id   : n/a
Ingr IPv6 Fltr-Id    : n/a              Egr IPv6 Fltr-Id : n/a
Admin ControlWord    : Not Preferred      Oper ControlWord  : False
BFD Template         : None
BFD-Enabled          : no                BFD-Encap        : ipv4
BFD Fail Action       : none              BFD Oper State   : notConfigured
BFD WaitForUpTimer   : 0 secs
BFD Time Remain      : 0 secs
Last Status Change   : 03/29/2021 14:47:13 Signaling         : TLDP
Last Mgmt Change     : 03/29/2021 14:47:13
Endpoint              : N/A              Precedence       : 4
PW Status Sig         : Enabled
Force Vlan-Vc        : Disabled           Force QinQ-Vc    : none
Class Fwding State   : Down
Local Pw Bits         : None
Peer Pw Bits         : None
    
```

```

Peer Fault Ip      : None

Application Profile: None
Transit Policy    : None
MAC Pinning       : Disabled
Oper Group        : (none)           Monitor Oper Grp : (none)
Ingress Qos Policy : (none)         Egress Qos Policy : (none)
Ingress FP QGrp   : (none)         Egress Port QGrp  : (none)
Ing FP QGrp Inst  : (none)         Egr Port QGrp Inst: (none)

KeepAlive Information :
Admin State        : Disabled       Oper State         : Disabled
Hello Time        : 10              Hello Msg Len     : 0
Max Drop Count    : 3              Hold Down Time    : 10

Statistics         :
I. Fwd. Pkts.     : 0              I. Dro. Pkts.    : 0
I. Fwd. Octets    : 0              I. Dro. Octets   : 0
E. Fwd. Pkts.     : 0              E. Fwd. Octets   : 0

-----
LDP Information :
-----
LDP LSP Id       : 65537

-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated

-----
Class-based forwarding :
-----
Class forwarding   : Disabled       EnforceDSTELspFc : Disabled
Default LSP       : Uknwn
Multicast LSP     : None

=====
FC Mapping Table
=====
FC Name           LSP Name
-----
No FC Mappings

-----
Segment Routing
-----
ISIS              : disabled
OSPF              : disabled
TE-LSP           : disabled

-----
Number of SDPs : 1
=====
    
```

Table 416: Show PW-Port Detail Output Fields describes the pw-port detail output fields.

Table 416: Show PW-Port Detail Output Fields

Label	Description
PW Port	The PW port identifier.

Label	Description
Encap	The encapsulation type of the PW port.
SDP	The SDP identifier
IfIndex	The interface index used for the PW port
VC-Id	The virtual circuit identifier
Description	The description of the PW port
Dot1Q Ethertype	The Dot1Q ethernet type
Service Id	The service ID
Down on Peer Tldp PW Status Faults	The down on peer TLDP PW status faults
Oper Up on MH Standby	The operational up status on MH standby
I. Fwd. Pkts	The number of forwarded packets ingressing this PW port
I. Fwd. Octs	The number of forwarded octets ingressing this PW port
E. Fwd. Pkts	The number of forwarded packets egressing this PW port
I. Dro. Pkts	The number of dropped packets on ingress
I. Dro. Octs	The number of dropped octets on ingress
E. Fwd. Octets	The number of forwarded octets egressing this PW port

The following outputs are examples of VSR PW port information.

**Output Example**

The following output is an example using the L2oGRE tunnel type for the VSR only.

```

show pw-port 10
=====
PW Port Information
=====
PW Port  Encap      SDP:VC-Id  IfIndex      Epipe
-----
10        dot1q         N/A        1526726666   10239
=====
show pw-port 10
=====
PW Port Information
=====
PW Port  Encap      SDP:VC-Id  IfIndex
-----
10        dot1q         1:2        1526726666
=====
    
```

The following output is an example using the MPLS tunnel type for the VSR only.

```
*A:Dut-C# show pw-port 10
=====
PW Port Information
=====
PW Port   Encap           SDP:VC-Id           IfIndex
-----
10        dot1q           17281:100010       1526726666
=====
*A:vSIM# show pw-port 1 statistics
=====
Pw-Port 1
=====
Statistics           :
I. Fwd. Pkts.       : 0                I. Dro. Pkts.       : 0
I. Fwd. Octets.     : 0                I. Dro. Octets.     : 0
E. Fwd. Pkts.       : 22514728        E. Fwd. Octets      : 22424666292
Grp Enc Stats       :
I. Dro. Inv. Spi.   : 0                I. Dro. 0thEncPkts.: 0
E. Dro. Enc. Pkts. : 0
```

The following output is an example of the PW port statistics output for the VSR only.

```
*A:Dut-B# show pw-port 10 statistics
=====
Pw-Port 10
=====
Statistics           :
I. Fwd. Pkts.       : 0                I. Dro. Pkts.       : 0
I. Fwd. Octets.     : 0                I. Dro. Octets.     : 0
E. Fwd. Pkts.       : 0                E. Fwd. Octets      : 0
Grp Enc Stats       :
I. Dro. Inv. Spi.   : 0                I. Dro. 0thEncPkts.: 0
E. Dro. Enc. Pkts. : 0
```

The following table describes the **show pw-port** output fields.

Table 417: Subscriber Show PW-Port Field Descriptions

Label	Description
PW Port	The PW port identifier
Encap	The encapsulation type of the PW port
SDP:VD-Id	This field is not applicable to the Flex PW port
IfIndex	The interface index used for the PW port
Epipe	The ID of the Epipe service in which this PW port is configured. The tunnel type that is terminated on this PW port can be determined from the Epipe.
Description	The description string for the PW port
Service Id	The ID of the Epipe service in which this PW port is configured

Label	Description
Admin Status	The Admin status of the SDP
Oper Status	The operational status of the SDP
I. Fwd. Pkts.	The number of forwarded packets ingress in this PW port
I. Fwd. Octs.	The number of forwarded octets ingressing this PW port
E. Fwd. Pkts.	The number of forwarded packets egressing this PW port
I. Dro. Pkts.	The number of dropped packets on ingress
I. Dro. Octs.	The number of dropped octets on ingress
E. Fwd. Octets.	The number of forwarded octets egressing this PW port
Grp Enc Stats	Not applicable to Flex PW port

## pw-port

### Syntax

**pw-port** [*pw-port-id*] [**detail**]  
**pw-port sdp** *sdp-id*  
**pw-port sdp none**  
**pw-port** *pw-port-id* **statistics**

### Context

[\[Tree\]](#) (show pw-port)

### Full Context

show pw-port

### Description

This command displays FPE-based PW-port configuration information, state information and forwarding statistics.

### Parameters

***pw-port-id***

Specifies the PW-port ID.

**Values** 1 to 10239

***sdp-id***

Displays PW port information based on the known internal SDP ID



**sdp none**

Displays information about FPE-based PW-ports that are not associated with any internal SDPs

**statistics**

Displays forwarding statistics, such as the number of forwarded or dropped frames (Ethernet, VLANs, payload)

**Platforms**

All

**Output**

The following output is an example of PW port information.

[Table 418: PW-Port Field Descriptions](#) describes the **show pw-port** command output fields.

**Output Example**

```
*A:vSIM# show pw-port 1
=====
PW Port Information
=====
PW Port   Encap      SDP      IfIndex    VC-Id
-----
1         dot1q      17406    1526726657 100001
*A:vSIM# show pw-port 1 detail
=====
PW Port Information
=====
PW Port      : 1
Encap        : dot1q
SDP          : 17406
IfIndex      : 1526726657
VC-Id        : 100001
Description  : test
=====
Service Destination Point (Sdp Id 17406 Pw-Port 1)
=====
SDP Binding port : pxc-1.b
VC-Id            : 100001      Admin Status    : up
Encap            : dot1q      Oper Status     : up
VC Type          : ether

Admin Ingress label : 262142      Admin Egress label : 262143
Oper Flags         : (Not Specified)
Monitor Oper-Group : (Not Specified)
*A:vSIM# show pw-port 1 statistics
=====
Service Destination Point (Sdp Id 17406 Pw-Port 1)
=====
SDP Binding port : pxc-1.b
VC-Id            : 100001      Admin Status    : up
Encap            : dot1q      Oper Status     : up
VC Type          : ether

Admin Ingress label : 262142      Admin Egress label : 262143
Oper Flags         : (Not Specified)
Monitor Oper-Group : (Not Specified)
```

```

Statistics          :
I. Fwd. Pkts.      : 0          I. Dro. Pkts.      : 0
I. Fwd. Octets.    : 0          I. Dro. Octets.    : 0
E. Fwd. Pkts.      : 0          E. Fwd. Octets    : 0
*A:vSIM# show pw-port sdp 17406
=====
PW Port Information
=====
PW Port  Encap      SDP      IfIndex      VC-Id
-----
1        dot1q      17406    1526726657   100001
*A:vSIM# show pw-port sdp none
=====
PW Port Information
=====
PW Port  Encap      SDP      IfIndex      VC-Id
-----
2        dot1q                1526726658
=====
    
```

Table 418: PW-Port Field Descriptions

Label	Description
PW-Port	Displays the PW port ID.
Encap	Displays the PW port encapsulation (dot1q or qinq).
SDP	Displays the Internal SDP to which this PW port is bound.
IfIndex	Displays the Internal interface index.
VC-Id	Displays the VC-id of the internal spoke SDP that interconnects external PW to this PW port.
Description	Displays the description of this PW port.
SDP Binding Port	Displays the PXC sub-port to which this PW port is bound. This is termination side of PXC, always denoted as .b side.
VC Type	Displays the VC type of the PW port.
Admin Status	Displays the admin status of the internal SDP.
Oper Status	Displays the operational status of the internal SDP.
Admin Ingress Label	Displays the ingress VC-label associated with this PW port.
Admin Egress Label	Displays the egress VC-label associated with this PW port.
Oper Flags	Displays the operational flags on the internal SDP.
Monitor Oper-Group	Displays the operational group that is being monitored by this PW port.
I. Fwd. Pkts.	Displays the number of forwarded packets ingressing this PW port.

Label	Description
I. Fwd. Octs.	Displays the number of forwarded octets ingressing this PW port.
E. Fwd. Pkts.	Displays the number of forwarded packets egressing this PW port.
I. Dro. Pkts.	Displays the number of dropped packets on ingress.
I. Dro. Octs.	Displays the number of dropped octets on ingress.
E. Fwd. Octets.	Displays the number of forwarded octets egressing this PW port.

## pw-port

### Syntax

**pw-port** *pw-port-id* **statistics**

### Context

[\[Tree\]](#) (clear pw-port)

### Full Context

clear pw-port

### Description

This command clears PW port statistics for the specified ID.

### Platforms

All

## 18.114 pw-port-list

## pw-port-list

### Syntax

**pw-port-list**

### Context

[\[Tree\]](#) (show>service>system pw-port-list)

## Full Context

```
show service system pw-port-list
```

## Description

This command displays system PW port list information.

## Platforms

VSR

## Output

The following output is an example of system **pw-port-list** information.

### Output Example

```
*A:Dut-B>config>service>system# show service system pw-port-list
=====
PW Port List
=====
Ports
-----
1/1/1
1/1/2
1/1/3
1/1/4
1/1/5
1/1/6
-----
Number of Entries: 6
=====
```

## 18.115 pw-sap-using

### pw-sap-using

## Syntax

```
pw-sap-using
```

## Context

[\[Tree\]](#) (show>service pw-sap-using)

## Full Context

```
show service pw-sap-using
```

## Description

This command displays service SAP PW port information.

## Platforms

All

## Output

The following output is an example of PW SAP port information.

### Output Example

```

=====
Service Access Points
=====
PortId                SvcId      Ing.   Ing.   Egr.   Egr.   Adm   Opr
                   QoS      QoS   Fltr   QoS   Fltr
-----
pw-1:0                1          1     none   1     none   Up   Up
pw-1:1                1          1     none   1     none   Up   Up
pw-2:2.1              2          1     none   1     none   Up   Up
pw-2:0.*              2          1     none   1     none   Up   Up
pw-2:1.*              2          1     none   1     none   Up   Up
pw-3:3                3          1     none   1     none   Up   Up
pw-4:4.*              4          1     none   1     none   Up   Up
-----
Number of SAPs : 7
=====
    
```

## 18.116 pw-template

### pw-template

#### Syntax

**pw-template** [*policy-id*]

#### Context

[\[Tree\]](#) (show>service pw-template)

#### Full Context

show service pw-template

#### Description

This command displays PW template information.

## Platforms

All

## Output

The following output is an example of PW template information.

## Output Example

```
*A:Dut-B# show service pw-template 1
=====
PW Template Information
=====
PW Tmpl Id       : 1
Use Provisioned Sdp : enabled           VcType           : vlan
Acctg Policy     : default           Collect Stats    : disabled
Mac-Learning     : enabled           Mac-Ageing       : enabled
Discard Unkn Src : disabled           Limit MacMove    : blockable
Mac-Pinning      : disabled           Vlan VcTag       : 4095
MAC Address Limit : no limit           Rest Prot Src Mac: disabled
Auto Learn Mac Prot : disabled       RestProtSrcMacAct: disable
Block On Peer Fault : disabled

SHG
Name             :
Description      : (Not Specified)
Rest Prot Src Mac : disabled           Rest Unprot Dst  : disabled
Auto Learn Mac Prot : disabled       RestProtSrcMacAct: disable

Egress
Mac FilterId     : none             Ip FilterId      : none
Ipv6 FilterId   : none             QoS NetPlcyId   : none
Port RedirectQGrp : none             Instance Id      : none

Ingress
Mac FilterId     : none             Ip FilterId      : none
Ipv6 FilterId   : none             QoS NetPlcyId   : none
Fp RedirectQGrp : none             Instance Id      : none

IGMP
Fast Leave       : disabled           Import Plcy      : none
Last Memb Intvl  : 10 deci-secs       Max Nbr Grps    : 0
Send Queries     : disabled
Version         : 3

Force VlanVc Fwd : disabled           Control Word     : disabled
Hash Label       : disabled           Hash Lbl Sig Cap : disabled
Last Changed     : 02/12/2013 22:11:49

-----
Included SDP-Groups
-----
red
-----
```

## 18.117 pxc

pxc

### Syntax

**pxc** [*pxc-id*]

### Context

[\[Tree\]](#) (show>port pxc)

### Full Context

show port pxc

### Description

This command displays PXC port information.

### Parameters

*pxc-id*

Specifies the PXC ID.

**Values** 1 to 64

### Platforms

All

## 18.118 python

```
python
```

### Syntax

```
python
```

### Context

[\[Tree\]](#) (clear python)

### Full Context

```
clear python
```

### Description

Commands in this context clear Python commands.

### Platforms

All

## python

### Syntax

python

### Context

[\[Tree\]](#) (show python)

### Full Context

show python

### Description

Commands in this context display Python information.

### Platforms

All

## python

### Syntax

python

### Context

[\[Tree\]](#) (tools>dump python)

### Full Context

tools dump python

### Description

Commands in this context dump Python information.

### Platforms

All



## 18.119 python-policy

```
python-policy
```

### Syntax

```
python-policy name cache
```

```
python-policy name cache hex-key hex-string
```

```
python-policy name cache string-key string-key
```

### Context

[\[Tree\]](#) (tools>dump>python python-policy)

### Full Context

```
tools dump python python-policy
```

### Description

This command dumps all cached entries or a specified entry of a specified Python policy.

The DDP key in the output is the python cache persistency record key.



#### Note:

The DDP Key in the output could be used for the **tools>dump>persistence>python** command.

### Parameters

#### *name*

Specifies the name of the Python policy, up to 32 characters.

#### *string-key*

Specifies the key of the entry to be updated in ASCII strong format, up to 512 characters maximum.

#### *hex-key*

Specifies the key of the entry to be updated in hex string format.

**Values** 0x0..0xFFFFFFFF...(988 hex nibbles maximum)

### Platforms

All

```
python-policy
```

### Syntax

```
python-policy name cache hex-key hex-string set-lifetime [lifetime]
```

**python-policy** *name* **cache** *string-key* [512 chars max] **set-lifetime** [*lifetime*]

### Context

[\[Tree\]](#) (tools>perform python-policy)

### Full Context

tools perform python-policy

### Description

This command set the lifetime of a specified python cache entry.

### Parameters

#### ***name***

Specifies the name of the Python policy, up to 32 characters.

#### ***string-key***

Specifies the key of the entry to be updated in ASCII strong format.

#### ***hex-string***

Specifies the key of the entry to be updated in hex string format.

#### **set-lifetime**

Specifies the new lifetime of the entry.

**Values** 1 to 2147483647

### Platforms

All

python-policy

### Syntax

**python-policy**

**python-policy** *policy-name* [**association**]

### Context

[\[Tree\]](#) (show>python python-policy)

### Full Context

show python python-policy

### Description

This command displays information about the currently configured Python policy.

The system will display a list of currently configured Python policy names if no parameter is specified.

## Parameters

### ***policy-name***

Specifies the Python policy name, up to 32 characters, to display.

### **association**

Displays the associations of the specified Python policy.

## Platforms

All

## Output

The following output is an example of DHCP Python policy information

### Output Example

```
show python python-policy "dhcp"
=====
Python policy "dhcp"
=====
Description   : (Not Specified)
-----
Messages
-----
Type          Dir      Script
-----
dhcpDiscover  egress  dhcpv4
dhcpRequest   egress  dhcpv4
dhcpAck       ingress dtc
-----
No. of Messages: 3
-----

show python python-policy "dhcp" association
=====
Python Policy Association
=====
Location
-----
Service: 500, GrpIf g1, dhcp
-----
No. of Python policy association:1
=====
```

## python-policy

### Syntax

**python-policy** *name* **cache all**

**python-policy** *name* **cache hex-key** *hex-string*

**python-policy** *name* **cache string-key** *string-key*

## Context

[\[Tree\]](#) (clear>python python-policy)

## Full Context

clear python python-policy

## Description

This command clears Python policy data.

## Parameters

### *name*

Specifies the name of the Python policy, up to 32 characters.

### *string-key*

Specifies the key of the entry to be updated in ASCII strong format, up to 512 characters maximum.

### *hex-string*

Specifies the key of the entry to be updated in hex string format.

**Values** 0x0..0xFFFFFFFF...(988 hex nibbles maximum)

## Platforms

All

## 18.120 python-script

### python-script

## Syntax

**python-script**

**python-script** *script-name* [**association** | **source-in-use**]

## Context

[\[Tree\]](#) (show>python python-script)

## Full Context

show python python-script

## Description

This command displays information about the currently configured Python script.

The system will display a list of currently configured Python script names if no parameter is specified.

## Parameters

### ***script-name***

Specifies the Python script name, up to 32 characters, to display information.

### **association**

Displays the associations of the specified Python script.

### **source-in-use**

Displays the Python source code in use.

## Platforms

All

## Output

The following output is an example of Python script information.

### Output Example

```
show python python-script "dhcpv4"
=====
Python script "dhcpv4"
=====
Description   : (Not Specified)
Admin state   : inService
Oper state    : inService
Action on fail: drop
Protection    : none
Primary URL   : cf1:/dhcpv4.py
Secondary URL : (Not Specified)
Tertiary URL  : (Not Specified)
Active URL    : primary
Last changed  : 01/26/2014 05:02:10
=====

show python python-script "dhcpv4" association
=====
Python Script Association
=====
Policy                Type                Dir
-----
dhcp                  dhcpDiscover        egress
dhcp                  dhcpRequest          egress
-----
No. of Python script association: 2
=====
```

## python-script

## Syntax

**python-script**

## Context

[\[Tree\]](#) (tools>perform python-script)

## Full Context

tools perform python-script

## Description

Commands in this context perform Python script operations.

## Platforms

All

## python-script

## Syntax

**python-script** *script-name* **nat-group** *nat-group-id* **statistics**

**python-script** *script-name* **wlan-gw-group** *wlan-gw-group-id* **statistics**

## Context

[\[Tree\]](#) (clear>python python-script)

## Full Context

clear python python-script

## Description

This command clears Python script statistics.

## Parameters

### ***script-name***

Specifies the Python script name, up to 32 characters, to display information.

### ***wlan-gw-group-id***

Specifies the WLAN-GW group ID.

**Values** 1 to 4

### ***nat-group-id***

Specifies the NAT group ID.

**Values** 1 to 8 (7750 SR-12)  
1 to 4 (all other platforms)

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s

## 18.121 python-script protect

```
python-script protect
```

### Syntax

```
python-script protect input file-url hmac-sha256 key secret-key output file-url
```

### Context

[\[Tree\]](#) (tools>perform python-script protect)

### Full Context

```
tools perform python-script protect
```

### Description

This command converts a normal (unprotected) Python script file into an SRPY format with specified key.

### Parameters

**input *file-url***

Specifies the URL of the input script file, up to 180 characters.

**key *secret-key***

Specifies the key used to compute the hash, up to 128 characters.

**output *file-url***

Specifies the URL of the output script file, up to 180 characters.

### Platforms

All

## 18.122 python-script reload

```
python-script reload
```

### Syntax

```
python-script reload name
```

### Context

[\[Tree\]](#) (tools>perform python-script reload)

## Full Context

tools perform python-script reload

## Description

This command reloads and recompiles the primary, secondary, and tertiary scripts in the specified Python script, in that order. The system uses the first script that comes up.



### Note:

Executing this command may update the last modified time for the system configuration.

## Parameters

*name*

Specifies the name of the Python script to be reloaded, up to 32 characters.

## Platforms

All



# 19 q Commands

## 19.1 qos

qos

### Syntax

qos

### Context

[\[Tree\]](#) (clear qos)

### Full Context

clear qos

### Description

Commands in this context clear QoS statistics.

### Platforms

All

qos

### Syntax

qos

### Context

[\[Tree\]](#) (show qos)

### Full Context

show qos

### Description

Commands in this context display QoS information.

### Platforms

All

## qos

### Syntax

qos

### Context

[\[Tree\]](#) (tools>dump qos)

### Full Context

tools dump qos

### Description

Commands in this context dump QoS information.

### Platforms

All

## qos

### Syntax

qos

### Context

[\[Tree\]](#) (monitor qos)

### Full Context

monitor qos

### Description

Commands in this context configure criteria to monitor QoS scheduler statistics for specific customers and SAPs.

### Platforms

All

## 19.2 querier

### querier

#### Syntax

querier

#### Context

[\[Tree\]](#) (show>service>id>mld-snooping querier)

#### Full Context

show service id mld-snooping querier

#### Description

This command displays information about the current querier.

#### Platforms

All

#### Output

The following output is an example of service MLD snooping querier information.

#### Output Example

```
*A:rbae_C# show service id 1 mld-snooping querier
=====
MLD Snooping Querier info for service 1
=====
Sap Id           : 2/1/5
IP Address       : FE80:db8:12
Expires         : 11s
Up Time         : 0d 00:13:35
Version         : 2

General Query Interval : 10s
Query Response Interval : 1.0s
Robust Count         : 2
=====
*A:rbae_C#
```

### querier

#### Syntax

querier

## Context

[\[Tree\]](#) (show>service>id>igmp-snooping querier)

## Full Context

show service id igmp-snooping querier

## Description

This command displays information on the IGMP snooping queriers for the VPLS service.

## Platforms

All

## Output

### Output Example

```
*A:ALA-1>show>service>id>snooping# querier
=====
IGMP Snooping Querier info for service 10
=====
Sap Id           : 1/1/1
IP Address       : 10.10.10.1
Expires          : 6s
Up Time          : 0d 00:56:50
Version          : 3

General Query Interval : 5s
Query Response Interval : 2.0s
Robust Count           : 2
=====
*A:ALA-1>show>service>id>snooping#
```

[Table 419: IGMP Snooping Queriers Fields](#) describes the show output fields.

*Table 419: IGMP Snooping Queriers Fields*

Label	Description
SAP Id	Specifies the SAP ID of the service.
IP address	Specifies the IP address of the querier.
Expires	The time left, in seconds, that the query will expire.
Up time	The length of time the query has been enabled.
Version	The configured version of IGMP.
General Query Interval	The frequency at which host-query packets are transmitted.
Query Response Interval	The time to wait to receive a response to the host-query message from the host.

Label	Description
Robust Count	Specifies the value used to calculate several IGMP message intervals.

## querier

### Syntax

**querier**

### Context

[\[Tree\]](#) (clear>service>id>igmp-snooping querier)

### Full Context

clear service id igmp-snooping querier

### Description

This command clears the information on the IGMP snooping queriers for the VPLS service.

### Platforms

All

## querier

### Syntax

**querier**

### Context

[\[Tree\]](#) (clear>service>id>mld-snooping querier)

### Full Context

clear service id mld-snooping querier

### Description

This command clears MLD snooping querier information.

### Platforms

All

## 19.3 query-results

### query-results

#### Syntax

**query-results id** *query-id*

**query-results name** *query-name*

#### Context

**[Tree]** (show>subscr-mgmt>wlan-gw>tunnels query-results)

#### Full Context

show subscriber-mgmt wlan-gw tunnels query-results

#### Description

This command shows the results of a query configured under **subscr-mgmt>wlan-gw>ue-query**.

#### Parameters

##### *query-id*

Identifies the query by numeric ID.

**Values** 1 to 1024

##### *query-name*

Identifies the query name, up to 32 characters.

#### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the results of a tunnel query.

#### Output Example

```
WLAN-GW> show subscriber-mgmt wlan-gw tunnels query-results name "min_3_dsm_ue"
=====
WLAN-GW tunnels
=====
Router                : 10
Encapsulation         : gre
Remote IP address     : 10.0.0.2
Local IP address      : 10.0.0.10
ISA group ID          : 1
ISA member ID         : 1
Interface             : grp-itf
Interface Service ID  : 5
First move time       : N/A
```

```
AP MAC address      : (Unknown)
AP MAC learn failed : true
No. of UE          : 3
No. of migrant UE  : 0
No. of DSM UE      : 3
No. of layer-2 wholesale UE : 0
No. of cross-connect UE : 0
No. of ESM UE      : 0
-----
Router             : 10
Encapsulation      : gre
Remote IP address  : 10.0.0.4
Local IP address   : 10.0.0.10
ISA group ID       : 1
ISA member ID      : 1
Interface          : grp-itf
Interface Service ID : 5
First move time    : N/A
AP MAC address     : (Unknown)
AP MAC learn failed : true
No. of UE          : 4
No. of migrant UE  : 0
No. of DSM UE      : 4
No. of layer-2 wholesale UE : 0
No. of cross-connect UE : 0
No. of ESM UE      : 0
-----
No. of WLAN-GW tunnels: 2
=====
```

## query-results

### Syntax

**query-results id** *query-id*

**query-results name** *query-name*

### Context

[\[Tree\]](#) (show>subscr-mgmt>wlan-gw>ue query-results)

### Full Context

show subscriber-mgmt wlan-gw ue query-results

### Description

This command shows the results of a query configured under **subscr-mgmt>wlan-gw>ue-query**.

### Parameters

***query-id***

Identifies the query by numeric ID.

**Values** 1 to 1024

### **query-name**

Identifies the query name, up to 32 characters.

### **Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

### **Output**

Use the following command to display the results of a UE query.

```
show subscriber-mgmt wlan-gw ue query-results name "all"
```

### **Output Example**

```
=====
WLAN-GW UE
=====
Tunnel Router           : 2000
Encapsulation           : gre
Tunnel Remote IP address : 10.10.2.114
Tunnel Local IP address  : 72.1.0.1
MAC address             : 00:00:00:07:04:02
IP address              : 0.0.0.0
State                   : l2-user
ISA group ID            : 2
ISA member ID           : 1
Last move time          : N/A
AP MAC address          : (Unknown)
VLAN tag                 : 41
Service Set ID (SSID)   : (Not Specified)
MPLS label              : (Not Specified)
Expiry time             : N/A
Idle timeout (s)        : 600
Session expiry time     : N/A
NAT policy              : (Not Specified)
HTTP redirect policy    : (Not Specified)
DSM IP filter           : (Not Specified)
Accounting policy       : (Not Specified)
Ingress PIR (kilobps)   : max
Ingress CIR (kilobps)   : max
Egress PIR (kilobps)    : max
Egress CIR (kilobps)    : max
Application profile     : (Not Specified)
IP address family       : not-specified
SLAAC prefix            : ::
SLAAC address 1         : ::
SLAAC address 2         : ::
SLAAC address 3         : ::
SLAAC expiry time       : N/A
DHCP address deprecated : no
DHCPv6 address          : ::
DHCPv6 address deprecated : no
Identity Association ID  : (Not Specified)
IA ID valid             : no
DHCPv6 lease expiry time : N/A
Bridge ID               : (Not Specified)
Received packets        : 3
Received bytes          : 870
Transmitted packets     : 0
Transmitted bytes       : 0
Hard quota octets       : 0
```



```
Soft quota octets      : 0
L2 service             : MyVplsServiceName

-----
No. of WLAN-GW UE: 1
=====
```

## 19.4 queue

### queue

#### Syntax

**queue queue-group** *queue-group-name* *port-id* { **ingress** | **egress** } [**id** *queue-id*] [**instance** *instance-id*]

**queue sap** *sap-id* {**ingress** | **egress**} [**id** *queue-id*]

**queue subscriber** *sub-ident-string* [**sla-profile** *sla-profile-name*] {**ingress** | **egress**} [**id** *queue-id*]

#### Context

[\[Tree\]](#) (show>qos queue)

#### Full Context

show qos queue

#### Description

The **show qos queue** command outputs the Burst Control Group (BCG) name and slowest accurate visitation time for the specified queues.

For each queue specified, the system may find multiple hardware queues. This may be true for ingress queues on multipoint services (VPLS, IES, VPRN) or for queues created on an Ethernet Link Aggregation Group (LAG). When this is true, the show command displays the BCG name for each individual hardware queue.

The BCG name associated with a queue may be specified in the **show bcg** command to display the historical and current visitation time for the BCG managing the burst tolerance of the queue. If the output visitation time is greater (longer time) than the queue returned slowest accurate visitation time, the queue's shaping rate may be negatively impacted.

#### Parameters

##### **queue-group-name** *port-id*

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues within the specified *queue-group-name* on the specified *port-id*. If the specified *port-id* is not provisioned on the system or the specified *queue-group-name* is not found on the port's specified direction, the show command will fail.

**Values** port-id: up to 17 characters

queue-group-name: up to 32 characters

**{ingress | egress}**

Specifies the direction to display and are mutually exclusive.

**queue-id**

Limits the return queues to a single *queue-id*.

**Values** 1 to 16

**instance-id**

Specifies which instance of a queue group with template queue-group-name to which this queue should be redirected. This parameter is only valid for queue groups on egress ports where policy-based redirection is required.

**Values** 1 to 65535

**sap-id**

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues within the specified *sap-id*. If the specified *sap-id* is not found, the show command will fail.

**Values** up to 64 characters

**sub-ident-string**

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues associated with the specified *sub-ident-string*. If the specified *sub-ident-string* does not exist, the show command will fail.

**Values** up to 32 characters

**sla-profile-name**

Specifies that the system should find and display the BCG and calculate the slowest accurate visitation time for the queues associated with the specified subscriber and sla-profile *sla-profile-name*. If the specified *sla-profile-name* does not exist, the show command will fail.

**Platforms**

All

## 19.5 queue-depth

### queue-depth

**Syntax**

**queue-depth** [*queue queue-id*] [**ingress** | **egress**]

## Context

[\[Tree\]](#) (clear>service>id>sap queue-depth)

## Full Context

clear service id sap queue-depth

## Description

This command clears queue depth information for the specified SAP.

## Parameters

### *queue-id*

Specifies the queue ID.

**Values** 1 to 32

### *ingress*

Clears information for the ingress policy.

### *egress*

Clears information for the egress policy.

## Platforms

All

## 19.6 queue-depth-violations

### queue-depth-violations

## Syntax

**queue-depth-violations** *mda-id*[/*port*] [**non-zero-counts-only**]

**queue-depth-violations** *mda-id*[/*port*] **access-egress** [**non-zero-counts-only**]

**queue-depth-violations** *mda-id*[/*port*] **access-egress** **service** *service-id* [**non-zero-counts-only**]

**queue-depth-violations** *mda-id*[/*port*] **access-egress** **queue-group** *queue-group-name* [**instance** *instance-id*] [**non-zero-counts-only**]

**queue-depth-violations** *mda-id*[/*port*] **network-egress** [**non-zero-counts-only**]

**queue-depth-violations** *mda-id*[/*port*] **network-egress** **queue-group** *queue-group-name* [**instance** *instance-id*] [**non-zero-counts-only**]

## Context

[\[Tree\]](#) (show>qos queue-depth-violations)

## Full Context

show qos queue-depth-violations

## Description

This command displays queue depth violation information, with the option of requesting only the information with a non-zero violation count.

## Parameters

### *mda-id[/port]*

Displays the pool information associated with the specified XMA or MDA and port.

**Values** slot/mda[/port]

### *non-zero-counts-only*

Displays only non-zero counts.

### *access-egress*

Displays access egress information.

### *service-id*

Specifies that the system should find and display queue depth violation information for the queues associated with the specified *service-id*.

**Values** 1 to 2147483648, *svc-name*: up to 64 characters

### *queue-group-name*

Specifies that the system should find and display information for the queues within the specified *queue-group-name*, up to 32 characters, on the specified *mda-id*.

### *instance-id*

Specifies which instance of a queue group with template *queue-group-name* to which this queue should be redirected. This parameter is only valid for queue groups on egress ports where policy-based redirection is required.

**Values** 1 to 65535

### *network-egress*

Displays network egress information.

## Platforms

All

## Output

The following output is an example of queue depth violation information, and [Table 420: Show QoS Queue Depth Violation Output Fields](#) describes the output fields.

### Output Example

```
*A:PE# show qos queue-depth-violations access-egress service 2147483647
=====
Queue Depth Violation Information (Egress SAP)
=====
```

```

-----
Queue: 2147483647->1/x1/1/c1/1:4096->1 Last seen: Thu Mar 26 12:39:33 PDT 2020
Oper MBS: 1024 KB Violation Threshold Percnt: 75.00
Queue Poll Int: 10 ms HWM Poll Int: 90 ms Total Violations: 30
-----
Queue: 2147483647->1/x1/1/c1/1:4096->2 Last seen: Thu Mar 26 12:39:33 PDT 2020
Oper MBS: 2048 KB Violation Threshold Percnt: 70.00
Queue Poll Int: 10 ms HWM Poll Int: 90 ms Total Violations: 0
-----
Queue: 2147483647->1/x1/1/c1/1:4096->3 Last seen: Thu Mar 26 12:39:33 PDT 2020
Oper MBS: 3072 KB Violation Threshold Percnt: 85.00
Queue Poll Int: 10 ms HWM Poll Int: 90 ms Total Violations: 50
=====
    
```

```

*A:PE# show qos queue-depth-violations access-egress service 2147483647 non-zero-counts-only
=====
Queue Depth Violation Information (Egress SAP)
=====
-----
Queue: 2147483647->1/x1/1/c1/1:4096->1 Last seen: Thu Mar 26 12:39:33 PDT 2020
Oper MBS: 1024 KB Violation Threshold Percnt: 75.00
Queue Poll Int: 10 ms HWM Poll Int: 90 ms Total Violations: 30
-----
Queue: 2147483647->1/x1/1/c1/1:4096->3 Last seen: Thu Mar 26 12:39:33 PDT 2020
Oper MBS: 3072 KB Violation Threshold Percnt: 85.00
Queue Poll Int: 10 ms HWM Poll Int: 90 ms Total Violations: 50
=====
    
```

Table 420: Show QoS Queue Depth Violation Output Fields

Label	Description
Queue	Displays the queue information
Last seen	Displays the date and time of the last seen violation
Oper MBS	Displays the operational MBS size
Violation Threshold Percnt	Displays the violation threshold percentage
Queue Poll Int	Displays the queue polling interval
HWM Poll Int	Displays the HWM polling interval
Total Violations	Displays the total number of violations

## 19.7 queue-group

### queue-group

#### Syntax

```
queue-group [queue-group-name] {ingress | egress} [{association | detail}]  
queue-group summary
```

#### Context

[\[Tree\]](#) (show>qos queue-group)

#### Full Context

```
show qos queue-group
```

#### Description

This command displays queue-group information.

#### Parameters

##### **queue-group-name**

Specifies the name of an existing queue group template up to 32 characters.

##### **ingress**

Specifies whether the queue group name is an ingress policy.

##### **egress**

Specifies whether the queue group name is an egress policy.

##### **association**

Displays the entities associated with the specified queue group name.

##### **detail**

Displays detailed queue group information for the specified queue group name.

##### **summary**

Displays the total number of queue-group instances per card (IOM or XCM).

#### Platforms

All

#### Output

The following outputs are examples of queue group information.

#### Output Example

```
*A:PE# show qos queue-group egress
```

```

=====
Queue Group Egress
=====
Group-Name                Description
-----
qg1
_tmx_nat_egr_q_grp        NAT/LNS Egress Queue Group Template
policer-output-queues    Default egress policer output queues.
_tmx_nat_egr_q_grp_v2    NAT/LNS Egress Queue Group Template for ISAv2
_tmx_lns_esm_egr_q_grp    LNS ESM Egress Queue Group Template
-----
Egress Queue Groups      : 5
=====

*A:PE#
*A:PE# show qos queue-group egress "qg1" detail

=====
QoS Queue-Group Egress
=====

-----
QoS Queue Group
-----
Group-Name                : qg1
Description                : (Not Specified)
Queues HQoS Managed       : True
HS Attachment Policy      : default
-----

Queue Information
-----
Queue-Id                  : 1                Queue-Type                : best-effort
Admin PIR                 : 50000            Admin CIR                 : 0
PIR Rule                  : closest          CIR Rule                  : closest
CBS                       : def                MBS                      : 1000 KB
Packet Byte Offset       : add 0
Adv Config Policy         : (Not Specified)
Parent                   : sl
PIR Level/Weight         : 1/1                CIR Level/Weight         : 0/1
Burst Limit              : default
Wred Queue Mode          : none                Wred Queue SlopeUsage: not-applicable
Slope Policy             : default
Dynamic MBS              : enabled          Queue Delay              : not-applicable
High-Plus Drop Tail     : def                High Drop Tail          : def
Low Drop Tail            : def                Exceed Drop Tail       : def
-----

HS Queue Information
-----
Queue-Id                  : 1
Admin PIR                 : 50000
PIR Rule                  : closest
MBS                      : 1000 KB
Packet Byte Offset       : add 0
Burst Limit              : default
HS Class Weight          : 1                HS Wrr Weight           : 1
HS Wred-Q Slope Plcy    : _tmnx_hs_default
HS Alt Class Pool        : False
-----

```

```

-----
HS Wrr Group Information
-----
HS Wrr Group Id   : 1           Class Weight   : 1
Rate              : max         Percent Rate    : 100.00
PIR Adaptation Rule: closest

HS Wrr Group Id   : 2           Class Weight   : 1
Rate              : max         Percent Rate    : 100.00
PIR Adaptation Rule: closest

-----

=====
Queue Group FC Mapping
=====
FC Name              Queue-Id
-----
No Matching Entries
=====

=====
Queue Group Ports (access)
=====
Port      Sched Pol      Acctg Pol Stats Description      QGrp-Instance
-----
5/1/1                0          No              1

-----

=====
Queue Group Ports (network)
=====
Port      Sched Pol  Policer-Ctrl-Pol Acctg Pol Stats Description QGrp-Instance
-----
No Matching Entries

=====

=====
Qos Sap-Egress FC Group-Queue References
=====
Sap Policy      FC Name              Queue Id
-----
No Matching Entries

=====

=====
Qos Sap-Egress FC Port-Redirect-Group-Queue References
=====
Sap Policy      FC Name              Queue Id
-----
No Matching Entries

=====

=====
Queue Group Policer
=====
No Matching Entries

=====

*A:PE#
*A:PE# show qos queue-group ingress

=====

Queue Group Ingress
=====
Group-Name              Description
-----
qg1
    
```



```

_tmnx_nat_ing_q_grp          NAT/LNS Ingress Queue Group Template
_tmnx_nat_ing_q_grp_v2      NAT/LNS Ingress Queue Group Template for ISA*
_tmnx_lns_esm_ing_q_grp     LNS ESM Ingress Queue Group Template
-----
Ingress Queue Groups       : 4
-----
* indicates that the corresponding row element may have been truncated.
*A:PE#
*A:PE# show qos queue-group ingress "qg1" detail
=====
QoS Queue-Group Ingress
=====
QoS Queue Group
-----
Group-Name      : qg1
Description     : (Not Specified)
-----
Q  Mode      CIR Admin  PIR Admin  CBS          PIR Lvl/Wt Parent
              CIR Rule   PIR Rule   MBS          CIR Lvl/Wt BurstLimit(B)
              Low Drop Tail          Pkt Bt Ofst   Adv Config Policy Name
              FIR Admin  FIR Rule   Cir-non-profiling
-----
No Matching Entries

=====
Queue Group Ports
=====
Port              Sched Pol          Acctg Pol Stats  Description
-----
No Matching Entries

=====
Queue Group Sap FC Maps
=====
Sap Policy      FC Name          Queue (id type)
-----
No Matching Entries

=====
Queue Group FP Maps
=====
Card Num      Fp Num          Instance        Type
-----
1              1              1              Access
-----
Entries found: 1
-----

=====
Queue Group Service Maps
=====
Service Id      Service Type      Instance
-----
No Matching Entries
=====
Queue Group Policer
=====
Policer Id     : 1
    
```

```

Description      : (Not Specified)
PIR Adptn       : closest                CIR Adptn       : closest
Parent          : none                  Level          : 1
Weight          : 1                     Adv. Cfg Plcy : none
Admin PIR       : max                   Admin CIR      : 0
CBS             : def                   MBS           : def
Hi Prio Only    : def                   Pkt Offset    : 0
Profile Capped  : Disabled
StatMode        : minimal

=====
*A:PE#
*A:PE# show qos queue-group summary

=====
Queue-group instances per card
=====
card      port-acc-ing  port-acc-egr  port-nw-egr  fp-acc-ing  fp-nw-ing
-----
1         0           0             0            1           0
2         0           1             0            0           0
3         0           0             0            0           0
4         0           0             0            0           0
5         0           3             0            0           0
-----
Total ingress QG templates per system : 4
Total egress QG templates per system : 5
=====
*A:PE#
    
```

CIR Rule	PIR Rule	MBS	CIR Lvl/Wt	BurstLimit(B)
	CIR Prcnt	PIR Prcnt	Low Drop Tail	

## queue-group

### Syntax

**queue-group** *queue-group-name* **egress access** [**instance** *instance-id*] [**egress-queue** *egress-queue-id*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**queue-group** *queue-group-name* **ingress access** **ingress-queue** *ingress-queue-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**queue-group** *queue-group-name* **egress network** **instance** *instance-id* [**policer** *policer-id*] [**egress-queue** *egress-queue-id*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>port queue-group)

### Full Context

monitor port queue-group

### Description

This command enables queue-group monitoring for the specified parameters.

## Parameters

### ***queue-group-name***

Specifies the name of the queue-group up to 32 characters.

### ***access***

Specifies the access type.

**Values** access

### ***network***

Specifies the network type.

**Values** network

### ***instance-id***

Specifies the identification of a specific instance of the queue group.

**Values** 1 to 65535

### ***policer-id***

The specified policer ID must exist within the queue-group template applied to the ingress context of the forwarding plane.

**Values** 1 to 8

### ***egress-queue-id***

Monitors statistics fir this queue.

**Values** 1 to 8

### ***ingress-queue-id***

Monitors statistics for this queue.

**Values** 1 to 32

### ***seconds***

Configures the interval for each display, in seconds.

**Values** 11 to 60

**Default** 11

### ***repeat***

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### ***absolute***

When the absolute keyword is specified, the raw statistics are displayed without processing. No calculations are performed on the delta or rate statistics.

### rate

When the rate keyword is specified, the rate-per-second for each statistic is displayed instead of the delta.

### Platforms

All

## queue-group

### Syntax

**queue-group** [ingress | egress] [*queue-group-name*] [access | network [*instance instance-id*]

**queue-group** [ingress | egress] [*queue-group-name*] [access | network] **associations** [*instance instance-id*]

**queue-group** [ingress | egress] *queue-group-name* [access | network] [*instance instance-id*] **queue-depth** [*queue queue-id*]

**queue-group** [ingress | egress] [*queue-group-name*] [access | network] **statistics** [*instance instance-id*]

**queue-group summary**

### Context

[\[Tree\]](#) (show>port queue-group)

### Full Context

show port queue-group

### Description

This command displays queue group information.

### Parameters

#### ***queue-group-name***

Specifies the queue group name, up to 32 characters.

#### **statistics**

Displays queue group port statistics.

#### **associations**

Displays queue group port associations.

#### **summary**

Displays summary information.

#### ***instance-id***

Specifies the identification of a specific instance of the queue group.

**Values** 1 to 65535

**queue-depth**

Displays queue depth information for the specified queue group queue.

**queue-id**

Specifies the queue ID.

**Values** 1 to 32

**Platforms**

All

## 19.8 queue-group-redirect-list

### queue-group-redirect-list

**Syntax**

**queue-group-redirect-list** [*policy-name*] [ **association** | **detail**]

**Context**

[\[Tree\]](#) (show>qos queue-group-redirect-list)

**Full Context**

show qos queue-group-redirect-list

**Description**

This command displays queue group redirect list information.

**Parameters**

***policy-name***

Specifies the name of a queue group redirect list, up to 32 characters.

**association**

Displays the entities associated with the specified queue group redirect list.

**detail**

Displays detailed information, including queue group redirect list associations.

**Platforms**

All

**Output**

The following output is an example of queue group redirect list information.

### Output Example

```
A:PE# show qos queue-group-redirect-list detail
=====
Queue Group Redirect List Information
=====
Policy Name      : list1
Match Type      : vxlan-vni
-----
Match           Instance
-----
1               1
2               2
3               3
-----
Service Associations
-----
Service ID      Service Type      SAP
-----
1               IES                1/1/1            (Ingress/Egress)
-----
=====
A:PE#
```

## 20 r Commands

### 20.1 radius

radius

#### Syntax

**radius** *server-index*

#### Context

[\[Tree\]](#) (clear radius)

#### Full Context

clear radius

#### Description

This command applies to RADIUS servers configured for user access (**configure system security radius server**). This command clears the RADIUS server state.

#### Parameters

***server-index***

Specifies the index for the RADIUS server. The index determines the sequence in which the servers are queried for authentication requests. Servers are queried in order from lowest to highest index.

**Values** 1 to 5

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

radius

#### Syntax

**radius**

#### Context

[\[Tree\]](#) (clear>li radius)

## Full Context

clear li radius

## Description

This command clears RADIUS associated entities.

## Platforms

All

## radius

## Syntax

**radius** [**user** *user-name*] [**policy** *policy-name*] [**server-index** *index*] **statistics**

## Context

[\[Tree\]](#) (show radius)

## Full Context

show radius

## Description

This command displays RADIUS server related information.

## Parameters

### *user-name*

Specifies the RADIUS username, up to 32 characters.

### *policy-name*

Specifies the policy name, up to 32 characters.

### *index*

Specifies the server index.

**Values** 1 to 16

## Platforms

All



## 20.2 radius-accounting

### radius-accounting

#### Syntax

**radius-accounting** [*policy-name*]

#### Context

[\[Tree\]](#) (clear>subscriber-mgmt radius-accounting)

#### Full Context

clear subscriber-mgmt radius-accounting

#### Description

This command clears RADIUS accounting data for the specified policy.

#### Parameters

***policy-name***

The name of the policy. The string is case sensitive and limited to 32 ASCII 7-bit printable characters with no spaces.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.3 radius-accounting-policy

### radius-accounting-policy

#### Syntax

**radius-accounting-policy** *name* **association**

**radius-accounting-policy** [*name*]

**radius-accounting-policy** *name* **statistics**

#### Context

[\[Tree\]](#) (show>subscr-mgmt radius-accounting-policy)

#### Full Context

show subscriber-mgmt radius-accounting-policy

## Description

This command displays RADIUS accounting policy information.

## Parameters

### *name*

Specifies the RADIUS accounting policy name.

### *association*

Displays parameters associated with this RADIUS accounting policy.

### *statistics*

Displays statistics associated with this RADIUS accounting policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management RADIUS accounting policy information.

### Output Example

```
*B:asd-tr0610-dr421# show subscriber-mgmt radius-accounting-policy "ZiggoAcct1813"
statistics
=====
Radius Accounting Policy ZiggoAcct1813 Statistics
=====
Tx Requests      : 36035966          Rx Responses   : 36035966
Request Timeouts : 0              Send Retries   : 2713
Send Failed      : 0
-----
Radius Servers
-----
Index IP Address      Tx Reqs      Rx Resps      Req Timeouts  Req Send Failed
-----
1     172.18.129.36    9012635      9011762       873           0
2     172.18.129.37    9004736      9003814       922           0
3     172.18.129.68    9010236      9009925       311           0
4     172.18.129.69    9011115      9010465       650           0
=====
```

[Table 421: RADIUS Accounting Policy Field Descriptions](#) describes subscriber management RADIUS accounting policy output fields.

*Table 421: RADIUS Accounting Policy Field Descriptions*

Label	Description
Tx Requests/TX Reqs	Displays the number of accounting requests transmitted for this policy.
Rx Responses/Rx Resps	Displays the number of accounting responses received for this policy.

Label	Description
Request Timeouts/ Req Timeouts	Displays the number of accounting requests which have timed out for this policy.
Send Retries	Displays the number of retries to a different server for a single accounting request for this policy.
Send Failed Req Send Failed	Displays how many accounting requests failed because the packet could not be sent out for this policy.
Radius Servers	<p>Displays a table in which the statistics associated with this RADIUS accounting policy are broken down by individual RADIUS server.</p> <p>The table columns are:</p> <p>Index—displays the index number assigned to the RADIUS server. The index determines the sequence in which the servers are queried for authentication requests. Servers are queried in order from lowest to highest index.</p> <p>IP Address—the address of the RADIUS server.</p> <p>TX Reqs—see TX Requests in this table.</p> <p>Rx Resps—see RX Responses in this table.</p> <p>Req Timeouts—see Request Timeouts in this table.</p> <p>Req Send Failed—see Send Failed in this table.</p>

## radius-accounting-policy

### Syntax

**radius-accounting-policy** [*rad-acct-plcy-name*]

**radius-accounting-policy** *rad-acct-plcy-name* **associations**

**radius-accounting-policy** *rad-acct-plcy-name* **statistics**

### Context

[\[Tree\]](#) (show>app-assure radius-accounting-policy)

### Full Context

show application-assurance radius-accounting-policy

### Description

This command displays RADIUS accounting policy information.

## Parameters

### *rad-acct-plcy-name*

Specifies the RADIUS accounting policy.

### **associations**

Specifies to show what contexts are associated with this policy.

### **statistics**

Specifies to show statistics related to this policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## radius-accounting-policy

## Syntax

**radius-accounting-policy** *rad-acct-plcy-name* [ **server** *server-index*] **statistics**

## Context

[\[Tree\]](#) (clear>app-assure radius-accounting-policy)

## Full Context

clear application-assurance radius-accounting-policy

## Description

This command clears application assurance RADIUS accounting statistics for the specified policy.

## Parameters

### *policy-name*

The name of the policy. The string is case sensitive and limited to 32 ASCII 7-bit printable characters with no spaces.

### *server-index*

The index for the RADIUS server.

**Values** 1 to 5 (a maximum of 5 accounting servers)

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## radius-accounting-policy

## Syntax

**radius-accounting-policy** [*name*]

## Context

[\[Tree\]](#) (show>ipsec radius-accounting-policy)

## Full Context

show ipsec radius-accounting-policy

## Description

This command displays RADIUS accounting-policy related information.

## Parameters

*name*

Specifies an existing RADIUS accounting policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show ipsec radius-accounting-policy** command.

### Output Example

```
show ipsec radius-accounting-policy
=====
Radius Accounting Policy
=====
Policy Name          Server Policy          Include Attribs      Upd Int
-----
rad-acct-policy-1    nasId nasPortId      20
                    framedIpAddr
                    10
=====
Number of entries: 1
=====

show ipsec radius-accounting-policy "rad-acct-policy-1"
=====
IPsec Radius Accounting Policy Detail
=====
Name                 : rad-acct-policy-1
Server Policy        : (Not Specified)
Include Attr         : nasId nasPortId framedIpAddr
Update Interval     : 20
Jitter               : 10 sec.
=====
```

## 20.4 radius-acct

### radius-acct

#### Syntax

radius-acct

#### Context

[\[Tree\]](#) (show>service>active-subscribers>hierarchy radius-acct)

#### Full Context

show service active-subscribers hierarchy radius-acct

#### Description

This command provides information about subscriber RADIUS accounting sessions including: the accounting policy name, the accounting mode, the interim intervals, the accounting session ID, and the multi-session ID. If there are no RADIUS accounting sessions enabled for subscribers, this command still shows the session ID that can be used by CoA.

PD hosts modeled as routes are not considered hosts, and therefore, are not shown in the output of this command.

This command only shows a numeric RADIUS session ID even if the RADIUS accounting policy is configured using the descriptive format.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of subscriber RADIUS accounting session information.

#### Output Example

```
# show service active-subscribers hierarchy radius-acct
=====
Active Subscribers Hierarchy (accounting information)
=====
-- sub-01-0501
  (sub-profile-1)
  |   Acct-policy       : acct-policy-1
  |   Mode              : Queue Instance (Interim)
  |                     : Session (Interim-Host)
  |   Cfg. update ivl  : 01h00m00s
  |
  +-- sap:[1/1/4:2111.51] - sla:sla-profile-1
      |
      +-- Queue Instance Acct - acct-policy-1
          |   session-id       : 0609FF000000175FD249FD
          |   multi-session-id : 0609FF000000175FD249FD
          |   interim-interval : 01h00m00s
```

```
|
+-- IP0E-Session - mac:00:01:01:00:00:51
|   |
|   +-- Session Acct - acct-policy-1
|   |   session-id      : 0609FF000000155FD249FD
|   |   multi-session-id: 0609FF000000175FD249FD
|   |   interim-interval: 01h00m00s
|   |
|   |-- 10.250.13.2
|   |   |
|   |   +-- no radius acct
|   |   |   session-id      : 0609FF000000185FD74E68
|   |   |
|   |   +-- 2001:db8:1:200::1/128
|   |   |   |
|   |   |   +-- no radius acct
|   |   |   |   session-id      : 0609FF000000165FD249FD
|   |   |   |
|   |   |   +-- 2001:db8:d102::/64
|   |   |   |   session-id      : N/A
|   |   |   |   multi-session-id: N/A
|   |
|   -----
|   Number of active subscribers : 1
|   =====
```

## 20.5 radius-acct-terminate-cause

### radius-acct-terminate-cause

#### Syntax

**radius-acct-terminate-cause**

#### Context

[\[Tree\]](#) (tools>dump>aaa radius-acct-terminate-cause)

#### Full Context

tools dump aaa radius-acct-terminate-cause

#### Description

This command shows all available termination causes and their respective number values. The TermCause is equivalent to VSA 226 Alc-Error-Code numeric values. The description is equivalent to VSA 227Alc-Error-Message string.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.6 radius-attr-username

### radius-attr-username

#### Syntax

**radius-attr-username** [*user-name*] [**summary**]

#### Context

[\[Tree\]](#) (tools>dump>subscr-mgmt radius-attr-username)

#### Full Context

tools dump subscriber-mgmt radius-attr-username

#### Description

This command displays a list of subscriber IDs associated to each username and statistics associated to the username.

#### Parameters

##### *user-name*

Specifies the username that matches the RADIUS attribute VSA [1] username. A single username can also be specified to query the list of associated subscriber IDs.

##### **summary**

Displays summary RADIUS attribute username information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.7 radius-authentication-policy

### radius-authentication-policy

#### Syntax

**radius-authentication-policy** [*name*]

#### Context

[\[Tree\]](#) (show>ipsec radius-authentication-policy)

#### Full Context

show ipsec radius-authentication-policy



## Description

This command displays IPsec RADIUS authentication policy information.

## Parameters

*name*

Specifies an existing RADIUS authentication policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 20.8 radius-configuration

### radius-configuration

## Syntax

**radius-configuration**

## Context

[\[Tree\]](#) (show>aaa radius-configuration)

## Full Context

show aaa radius-configuration

## Description

This command displays RADIUS configuration information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of AAA RADIUS configuration information.

## Output Example

```
# show aaa radius-configuration
=====
RADIUS configuration
=====
CoA Port                : 3799
=====
```

[Table 422: AAA ISA RADIUS Policy Field Descriptions](#) provides a description of the counters in the output of the **show aaa isa-radius-policy** command.

Table 422: AAA ISA RADIUS Policy Field Descriptions

Label	Description
CoA Port	The RADIUS Change of Authorization (CoA) port

## 20.9 radius-proxy-server

### radius-proxy-server

#### Syntax

```
radius-proxy-server server-name  
radius-proxy-server server-name cache  
radius-proxy-server server-name cache hex-key hex-string  
radius-proxy-server server-name cache string-key string  
radius-proxy-server server-name cache summary  
radius-proxy-server server-name statistics  
radius-proxy-server
```

#### Context

[\[Tree\]](#) (show>router radius-proxy-server)

#### Full Context

```
show router radius-proxy-server
```

#### Description

This command displays RADIUS proxy server information.

#### Parameters

##### **server-name**

Specifies the default RADIUS proxy server name created in the **config>router>radius-proxy** context.

##### **cache**

Displays cached information.

##### **hex-string**

Displays the hex key string.

**Values** [0x0 to 0xFFFFFFFF (max 64 hex nibbles)]

**string**

Displays the packet type of the RADIUS messages to use to generate the key for the cache of this RADIUS proxy server.

**summary**

Displays summarized information.

**statistics**

Displays statistics for the specified RADIUS proxy server.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of subscriber RADIUS proxy server.

**Output Example**

```
*B:asd-tr0610-dr421# show router radius-proxy-server "ZiggoRadiusProxyAnyCast" statistics
=====
RADIUS Proxy server statistics for "ZiggoRadiusProxyAnyCast"
=====
Rx packet : 28454097
Rx Access-Request : 24846521
Rx Accounting-Request : 3607576
Rx dropped : 22986
  Retransmit : 22986
  Server admin down : 0
  No RADIUS policy configured : 0
  No load-balance-key configured : 0
  Invalid length : 0
  Invalid Code field : 0
  Invalid attribute encoding : 0
  Invalid User-Name : 0
  Invalid password : 0
  Invalid accounting Authenticator : 0
  Invalid Message-Authenticator : 0
  No memory : 0
  Accounting-Request with invalid Acct-Status-Type : 0
  Accounting-Request with no Acct-Status-Type : 0
  Registered user overload : 0
  Dropped by Python : 0

Tx Access-Accept : 1929725
Tx Access-Reject : 302354
Tx Access-Challenge : 22598950
Tx Accounting-Response : 3598730
Tx dropped : 1351
  No key to cache : 0
  Cache key too long : 0
  Cache attributes too long : 0
  Reached maximum number of cache entries : 0
  No memory : 0
  Server timeout : 1351
  Server authentication failure : 0
  Server invalid Code : 0
  Invalid attribute encoding : 0
  Registered user overload : 0
  No RADIUS server configured : 0
  RADIUS server send failure : 0
```

```

Dropped by Python : 0
=====
*B:asd-tr0610-dr421# show router radius-proxy-server "ZiggoRadiusDRPProxyanyCast-LEG"
statistics
=====
ISA RADIUS Proxy server statistics for "ZiggoRadiusDRPProxyanyCast-LEG"
=====
Group 1 member 1
-----
Rx packet : 72250262
Rx Access-Request : 61457394
Rx Accounting-Request : 10792868
Rx dropped : 1525690
  Retransmit : 28470
  Wrong purpose : 0
  No UE MAC to cache : 1497212
  Client context limit reached : 0
  No ISA RADIUS policy configured : 0
  Invalid attribute encoding : 0
  Invalid password : 0
  Accounting-Request with invalid Acct-Status-Type : 0
  Accounting-Request with no Acct-Status-Type : 0
  Invalid accounting Authenticator : 0
  Invalid Message-Authenticator : 8
  Management core overload : 0

Tx Access-Accept : 5830313
Tx Access-Reject : 743060
Tx Access-Challenge : 54844862
Tx Accounting-Response : 9294168
Tx dropped : 12226
  Server timeout : 12169
  Invalid response Authenticator : 57
  Invalid Message-Authenticator : 0
  Invalid attribute encoding : 0
  RADIUS server send failure : 0
    
```

Table 423: Proxy Server Field Descriptions describes subscriber RADIUS proxy server output fields.

Table 423: Proxy Server Field Descriptions

Label	Description
Invalid response Authenticator Rx packet	The number of packets received by this RADIUS proxy server
Rx Access-Request	The number of Access-Request packets received by this RADIUS proxy server
Rx Accounting-Request	The number of Accounting-Request packets received by this RADIUS proxy server
Rx dropped	The number of packets received by this RADIUS proxy server but dropped

Label	Description
Retransmit	The number of packets received by this RADIUS proxy server that were rejected because they are retransmitted
Wrong purpose	The number of packets received by this RADIUS proxy server that were rejected because the value of tmnxRadProxSrv Purpose is set to a value not matching the type of packet
No UE MAC to cache	The number of packets received by this RADIUS proxy server that were rejected because the UE MAC address was not present in the packet
Client context limit reached	The number of packets received by this RADIUS proxy server that were rejected because the limit of client contexts was reached. For each RADIUS transaction a client context is created, and are deleted once the transaction is finished.
No ISA RADIUS policy configured	The number of packets received by this RADIUS proxy server that were rejected because it has no ISA RADIUS server policy configured for that type of packet
Server admin down	The number of packets received by this RADIUS proxy server that were rejected because it is administratively shut down
No RADIUS policy configured	The number of packets received by this RADIUS proxy server that were rejected because it has no RADIUS server policy configured for that type of packet
No load-balance-key configured	The number of packets received by this RADIUS proxy server that were rejected because the selected RADIUS server policy's algorithm is set to hashBased and no load balance key is configured
Invalid length	The number of packets received by this RADIUS proxy server that were rejected because their length was invalid
Invalid Code field	The number of packets received by this RADIUS proxy server that were rejected because they had an invalid Code field
Invalid attribute encoding	The number of packets received by this RADIUS proxy server that were rejected because one of the attributes was incorrectly encoded
Invalid User-Name	The number of packets received by this RADIUS proxy server that were rejected because they contained an invalid User-Name attribute
Invalid password	The number of packets received by this RADIUS proxy server that were rejected because the User-Password attribute could not be decoded

Label	Description
Invalid accounting Authenticator	The number of accounting packets received by this RADIUS proxy server that were rejected because they contained an invalid Authenticator field
Invalid Message-Authenticator	The number of packets received by this RADIUS proxy server that were rejected because they contained an invalid Message-Authenticator attribute
Management core overload	The number of packets that were rejected by this RADIUS server because the ISA management core is not able to process any new RADIUS requests because of overload
No memory	The number of packets that were rejected by this RADIUS server because there was not enough memory to store them
Accounting-Request with invalid Acct-Status-Type	The number of accounting packets received by this RADIUS proxy server that were rejected because they contained an invalid Acct-Status-Type attribute
Accounting-Request with no Acct-Status-Type	The number of accounting packets received by this RADIUS proxy server that were rejected because they contained no Acct-Status-Type attribute
Registered user overload	The number of packets that were rejected by this RADIUS server because the registered user indicated to be in overload
Dropped by Python	The number of packets received by this RADIUS proxy server but dropped by Python
Tx Access-Accept	The number of Access-Accept packets transmitted by this RADIUS proxy server
Tx Access-Reject	The number of Access-Reject packets transmitted by this RADIUS proxy server
Tx Access-Challenge	The number of Access-Challenge packets transmitted by this RADIUS proxy server
Tx Accounting-Response	The number of Accounting-Response packets transmitted by this RADIUS proxy server
Tx dropped	The number of packets dropped by this RADIUS proxy server before transmission
No key to cache	The number of packets that could not be cached by this RADIUS proxy server because the key information was not present in the packet
Cache key too long	The number of packets that could not be cached by this RADIUS proxy server because the key information present in the packet was too long

Label	Description
Cache attributes too long	The number of packets that could not be cached by this RADIUS proxy server because the total length of the attributes is too long
Reached maximum number of cache entries	The number of packets that could not be cached by this RADIUS proxy server because the limit has been reached
No memory	The number of packets that could not be transmitted by this RADIUS proxy server because there was not enough memory
Server timeout	The number of packets that were dropped because the RADIUS servers have timed out
Server authentication failure	The number of packets that were dropped because the RADIUS server replied with a packet which failed authentication (invalid response Authenticator or Message Authenticator attribute)
Server invalid Code	The number of packets that were dropped because the RADIUS server replied with a packet with an invalid Code field
Invalid attribute encoding	The number of packets that were dropped because the RADIUS server replied with a packet with an invalid attribute
Registered user overload	The number of packets that were dropped because the registered user indicated to be in overload
No RADIUS server configured	The number of packets that were dropped by this RADIUS server because the RADIUS server policy has no servers configured
RADIUS server send failure	The number of packets that were dropped by this RADIUS server because the packet could not get transmitted to one of the servers in the RADIUS server policy
Dropped by Python	The number of packets that were dropped by this RADIUS server because the packet was dropped by the Python script
Invalid response Authenticator	The number of packets that were dropped because the RADIUS server replied with a packet which failed authentication

## radius-proxy-server

### Syntax

**radius-proxy-server** *server-name* **statistics**

### Context

[\[Tree\]](#) (clear>router radius-proxy-server)

### Full Context

```
clear router radius-proxy-server
```

### Description

This command clears RADIUS proxy server data.

### Parameters

#### ***server-name***

Specifies the proxy server name.

#### ***statistics***

Clears statistics for the specified server.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.10 radius-script-policy

### radius-script-policy

### Syntax

```
radius-script-policy [policy-name]
```

```
radius-script-policy policy-name association
```

```
radius-script-policy policy-name script {primary | secondary}
```

### Context

[\[Tree\]](#) (show>aaa radius-script-policy)

### Full Context

```
show aaa radius-script-policy
```

### Description

This command displays RADIUS script policy information.

### Parameters

#### ***policy-name***

Specifies the RADIUS script policy name, up to 32 characters.

#### ***association***

Displays the associations related to the RADIUS script policy.



## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.11 radius-server

### radius-server

#### Syntax

**radius-server** *server-name*

**radius-server** *server-name* **associations**

**radius-server**

#### Context

[\[Tree\]](#) (show>router radius-server)

#### Full Context

show router radius-server

#### Description

This command displays RADIUS server configuration information.

#### Parameters

##### **server-name**

Specifies the RADIUS server name, up to 32 characters.

##### **associations**

Displays the RADIUS server policy associations for the specified server.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following outputs are examples of RADIUS server information.

### Output Example

```
[/]  
A:patrick@pel# /show router radius-server "radius-1"  
=====
```

RADIUS server "radius-1"	
=====	
Description	: (Not Specified)
Address	: 172.16.6.2
Port Auth/Acct	: 1812/1813
CoA script policy	: (Not Specified)
Python policy	: (Not Specified)

```
Pending request limit      : 4096
Accept CoA                 : true
Last management change     : 07/05/2022 14:30:02
=====
[/]
A:patrick@pel# /show router radius-server "radius-1" associations
=====
RADIUS server policy associations for "radius-1"
=====
Name                        Id
-----
aaa-radius-1                1
-----
No. of policies: 1
=====
```

## 20.12 radius-server-policy

### radius-server-policy

#### Syntax

```
radius-server-policy policy-name [acct-on-off]
radius-server-policy policy-name associations
radius-server-policy policy-name msg-buffer-stats
radius-server-policy policy-name statistics
radius-server-policy [acct-on-off]
```

#### Context

[\[Tree\]](#) (show>aaa radius-server-policy)

#### Full Context

```
show aaa radius-server-policy
```

#### Description

This command displays RADIUS server policy configuration information.

#### Parameters

##### *policy-name*

Displays information for the specified RADIUS server policy.

##### **association**

Displays the information configured with the RADIUS server policy.

##### **msg-buffer-stats**

Displays statistics related to the RADIUS messages that are buffered for each specified RADIUS server policy.

**statistics**

Displays statistics for the specified RADIUS server policy.

**act-on-off**

Displays the admin state of the acct-on-off feature.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of AAA RADIUS server policy information.

**Output Example**

```
*B:asd-tr0610-dr421# show aaa radius-server-policy "ZiggoAAA_anycast" statistics
=====
RADIUS server policy "ZiggoAAA_anycast" statistics
=====
Tx transaction requests           : 24818681
Rx transaction responses          : 24817329
Transaction requests timed out   : 1351
Transaction requests send failed  : 0
Packet retries                   : 12410
Transaction requests send rejected : 0
Authentication requests failed   : 303530
Accounting requests failed       : 0
Ratio of access-reject over auth responses : 13%
Transaction success ratio        : 99%
Transaction failure ratio        : 1%
Statistics last reset at         : 05/21/2015 01:11:39
```

**Table 424: RADIUS Server Policy Statistics Field Descriptions** describes RADIUS server policy statistics output fields.

*Table 424: RADIUS Server Policy Statistics Field Descriptions*

Label	Description
Tx transaction requests	The number of RADIUS transaction requests transmitted
Rx transaction responses	The number of RADIUS transaction responses received
Transaction requests timed out	The number of RADIUS transaction requests that have timed out
Transaction requests send failed	The number of RADIUS transaction requests that could not be transmitted
Packet retries	The number of times a RADIUS request packet was retransmitted to a server
Transaction requests send rejected	The number of RADIUS transaction requests that were not transmitted due to unacceptable configuration

Label	Description
Authentication requests failed	The number of authentication failures for this policy
Accounting requests failed	The number of accounting failures for this policy
Ratio of access-reject over auth responses	The ratio of access-rejects in the auth responses for this policy
Transaction success ratio	The transaction success ratio for this policy
Transaction failure ratio	The transaction failure ratio for this policy
Statistics last reset at	Indicated the date and time at which the statistics for this policy were last reset

## radius-server-policy

### Syntax

**radius-server-policy** *policy-name* **msg-buffer** [**session-id** *acct-session-id*]

### Context

[\[Tree\]](#) (tools>dump>aaa radius-server-policy)

### Full Context

tools dump aaa radius-server-policy

### Description

This command dumps the RADIUS message buffer content for the specified radius-server-policy:

- message-type (acct-interim or acct-stop)
- Acct-Session-Id
- Remaining lifetime

When specifying the session-id, the message details are displayed.

### Parameters

#### ***policy-name***

Specifies the **radius-server-policy** for which the message buffer content should be displayed.

#### ***acct-session-id***

Displays the RADIUS message details for the message with specified session-id that is stored in the RADIUS message buffer.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## radius-server-policy

### Syntax

**radius-server-policy** *policy-name* **msg-buffer** [**acct-session-id** *acct-session-id*]

**radius-server-policy** *policy-name* **statistics** [**msg-buffer-only**]

**radius-server-policy** *policy-name* **server** *server-index* **statistics**

### Context

[\[Tree\]](#) (clear>aaa radius-server-policy)

### Full Context

clear aaa radius-server-policy

### Description

This command dumps the RADIUS message buffer content for the specified radius-server-policy:

- message-type (acct-interim or acct-stop)
- Acct-Session-Id
- Remaining lifetime

When specifying the session-id, the message details are displayed.

### Parameters

#### ***policy-name***

Specifies the radius-server-policy for which the information should be cleared.

#### ***acct-session-id***

Deletes all RADIUS messages or the RADIUS message with specified session-id from the RADIUS message buffer.

#### ***msg-buffer-only***

Clears all statistics for the specified radius-server-policy: radius-server-policy statistics, RADIUS server statistics and RADIUS message buffer statistics. With the optional keyword **msg-buffer-only**, only the RADIUS message buffer statistics are cleared.

#### ***server-index***

Clears the RADIUS server statistics for the specified server-index in the specified radius-server-policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.13 range

range

### Syntax

range [area-id]

### Context

[\[Tree\]](#) (show>router>ospf3 range)

[\[Tree\]](#) (show>router>ospf range)

### Full Context

show router ospf3 range

show router ospf range

### Description

This command displays ranges of addresses on an Area Border Router (ABR) for the purpose of route summarization or suppression.

### Parameters

**area-id**

Displays the configured ranges for the specified area.

**Values** ip-address — a.b.c.d  
area — 0 to 4294967295

### Platforms

All

### Output

OSPF Range Output

[Table 425: OSPF Range Output Fields](#) describes the OSPF range output fields.

*Table 425: OSPF Range Output Fields*

Label	Description
Area Id	A 32-bit integer uniquely identifying an area. Area ID 0.0.0.0 is used for the OSPF backbone.
Address/Mask	The mask for the range expressed as a decimal integer mask length or in dotted decimal notation.

Label	Description
Advertise	False — The specified address/mask is not advertised outside the area.  True — The specified address/mask is advertised outside the area.
LSDB Type	NSSA — This range was specified in the NSSA context, and specifies that the range applies to external routes (via type-7 LSAs) learned within the NSSA when the routes are advertised to other areas as type-5 LSAs.  Summary — This range was not specified in the NSSA context, the range applies to summary LSAs even if the area is an NSSA.

### Output Example

```
A:ALA-A# show router ospf 1 range
=====
Rtr Base OSPFv2 Instance 1 Ranges
=====
Area Id          Address/Mask      Advertise  LSDB Type
-----
No. of Ranges: 0
=====
A:ALA-A#

A:ALA-A# show router ospf range 180.0.7.9
=====
Rtr Base OSPFv2 Instance 0 Ranges for Area-Id 180.0.7.9
=====
Area Id          Address/Mask      Advertise  LSDB Type
-----
No. of Ranges: 0
=====
A:ALA-A#
```

## 20.14 reassembly-statistics

### reassembly-statistics

#### Syntax

```
reassembly-statistics group nat-group-id member [member]
```

#### Context

[\[Tree\]](#) (clear reassembly-statistics)

#### Full Context

```
clear reassembly-statistics
```

## Description

This command clears IP reassembly statistics.

## Parameters

### *nat-group-id*

Specifies the NAT group ID.

**Values** 1 to 8 (7750 SR-12)  
1 to 15 (VSR)  
1 to 4 (all other platforms)

### *member*

Specifies the member ID.

**Values** 1 to 255

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 20.15 reboot-required

### reboot-required

## Syntax

```
reboot-required
```

## Context

[\[Tree\]](#) (clear>system reboot-required)

## Full Context

```
clear system reboot-required
```

## Description

This command clears the reboot required information. Use this command after a configuration triggers the reboot required state, but the configuration is removed.

## Platforms

All



## 20.16 recover-l2aw-bypass

```
recover-l2aw-bypass
```

### Syntax

```
recover-l2aw-bypass mda
```

### Context

[\[Tree\]](#) (tools>perform>nat recover-l2aw-bypass)

### Full Context

```
tools perform nat recover-l2aw-bypass
```

### Description

This command restores NAT resources to the recovered MS-ISA and resumes forwarding subscriber traffic.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 20.17 redirect

```
redirect
```

### Syntax

```
redirect statistics
```

### Context

[\[Tree\]](#) (tools>dump>system>cpm-http-redirect redirect)

### Full Context

```
tools dump system cpm-http-redirect redirect
```

### Description

This command displays system level statistics for all redirected TCP sessions in **optimized- mode**. These include the following:

- Close requests to TCP: TCP layer requested to send a FIN
- Abort requests to TCP: error in the received packet and the TCP layer needs to send a RST

- Data requests to TCP: number of redirects sent to the TCP layer
- Connections deleted: number of connections closed without a successful redirect performed
- HTTP GET parse errors: formatting error in the HTTP request
- HTTP GET process errors: HTTP GET is formatted properly but the redirect still fails. Example: system unable to find a corresponding host
- HTTP Response dropped: communication error; the redirect failed to be sent to the TCP layer

## Parameters

### statistics

Specifies system level statistics for all redirected TCP sessions.

## Platforms

All

## Output

The following output is an example of the **statistics** command information.

### Output Example

```
A# tools dump system cpm-http-redirect redirect statistics
=====
CPM HTTP Redirect statistics
=====
Close requests to TCP                : 2
Abort requests to TCP                : 0
Data requests to TCP                 : 2
Requests rejected - out of memory    : 0
Connections deleted                  : 0
HTTP GET parse errors                 : 0
HTTP GET process errors               : 0
HTTP Response dropped                 : 0
```

## 20.18 redirect-policy

### redirect-policy

#### Syntax

```
redirect-policy [redirect-policy-name {dest ip-address | associations}]
```

#### Context

[\[Tree\]](#) (show>filter redirect-policy)

#### Full Context

```
show filter redirect-policy
```

## Description

This command shows redirect filter information.

## Parameters

### *redirect-policy-name*

Displays information for the specified redirect policy, up to 32 characters.

### *dest ip-address*

Directs the router to use a specified IP address for communication.

#### Values

ipv4-address:	a.b.c.d.
ipv6-address:	x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x.d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

### *associations*

Appends association information.

## Platforms

All

## Output

**Redirect Policy Output** — The following output is an example of redirect policy information, and [Table 426: Filter Redirect-Policy Output Fields](#) describes the fields.

### Output Example

```
A:ALA-A>config>filter# show filter redirect-policy
=====
Redirect Policies
=====
Redirect Policy          Applied Description
-----
wccp                    Yes
redirect1               Yes    New redirect info
redirect2               Yes    Test test test test
=====
ALA-A>config>filter#

ALA-A>config>filter# show filter redirect-policy redirect1
=====
Redirect Policy
=====
Redirect Policy: redirect1          Applied      : Yes
Description      : New redirect info
Active Dest      : 10.10.10.105
-----
Destination      : 10.10.10.105
```

```

-----
Description      : another test
Admin Priority   : 95
Admin State     : Up
Oper Priority    : 105
Oper State      : Down

Ping Test
Source Address  : None
Interval       : 1
Drop Count      : 5
Hold Down      : 0
Last Action at : 03/19/2007 00:46:55
Timeout        : 30
Hold Remain    : 0
Action Taken   : Disable
=====
A:ALA-A>config>filter#
    
```

Table 426: Filter Redirect-Policy Output Fields

Label	Description
Redirect Policy	Specifies a specific redirect policy
Applied	Specifies whether the redirect policy is applied to a filter policy entry
Description	Displays the user-provided description for this redirect policy
Active Destination	IP address — specifies the IP address of the active destination
	none — indicates that there is currently no active destination
Destination	Specifies the destination IP address
Oper Priority	Specifies the operational value of the priority for this destination; the highest operational priority across multiple destinations is used as the preferred destination
Admin Priority	Specifies the configured base priority for the destination
Admin State	Specifies the configured state of the destination
	Out of Service — tests for this destination will not be conducted
Oper State	Specifies the operational state of the destination
Ping Test	Specifies the name of the ping test
Source Address	Specifies the source address of the ping test (if any)
Timeout	Specifies the amount of time in seconds that is allowed for receiving a response from the far-end host; if a reply is not received within this time the far-end host is considered unresponsive
Interval	Specifies the amount of time in seconds between consecutive requests sent to the far end host

Label	Description
Drop Count	Specifies the number of consecutive requests that must fail for the destination to be declared unreachable
Hold Down	Specifies the amount of time in seconds that the system should be held down if any of the test has marked it unreachable
Hold Remain	Specifies the amount of time in seconds that the system will remain in a hold down state before being used again
Last Action at	Displays a time stamp of when this test received a response for a probe that was sent out

## redirect-policy

### Syntax

**redirect-policy** *redirect-policy-name*

### Context

[\[Tree\]](#) (tools>perform>filter redirect-policy)

### Full Context

tools perform filter redirect-policy

### Description

Commands in this context perform redirect policy operations.

### Parameters

***redirect-policy-name***

Specifies a particular redirect policy name, up to 32 characters.

### Platforms

All

## 20.19 redirect-policy-binding

## redirect-policy-binding

### Syntax

**redirect-policy-binding** [*name*]

## Context

[\[Tree\]](#) (show>filter redirect-policy-binding)

## Full Context

show filter redirect-policy-binding

## Description

This command shows configured redirect-policy bindings information.

## Parameters

**name**

Displays information for the specified redirect policy binding, up to 32 characters.

## Platforms

All

## Output

**Redirect Policy Output** — The following output is an example of redirect policy binding information, and [Table 427: Filter Redirect Policy Bindings Output Fields](#) describes the fields.

### Output Example

```
A:ALA-A>config>filter# show filter redirect-policy-binding
=====
Redirect Policy Bindings
=====
Name                               Binding Operator Oper State
-----
TestBinding                         And                       Up
=====
ALA-A#
```

Table 427: Filter Redirect Policy Bindings Output Fields

Label	Description
Test Binding	Specifies a specific test binding field

## 20.20 redundancy

redundancy

### Syntax

redundancy

## Context

[\[Tree\]](#) (tools>dump redundancy)

## Full Context

tools dump redundancy

## Description

Commands in this context dump redundancy parameters.

## Platforms

All

redundancy

## Syntax

redundancy

## Context

[\[Tree\]](#) (show redundancy)

## Full Context

show redundancy

## Description

Commands in this context show redundancy information.

## Platforms

All

redundancy

## Syntax

redundancy

## Context

[\[Tree\]](#) (tools>perform redundancy)

## Full Context

tools perform redundancy

## Description

Commands in this context display redundancy information.

## Platforms

All

redundancy

## Syntax

redundancy

## Context

[\[Tree\]](#) (clear redundancy)

## Full Context

clear redundancy

## Description

Commands in this context clear redundancy parameters.

## Platforms

All

## 20.21 reflectors

reflectors

## Syntax

reflectors

## Context

[\[Tree\]](#) (show>test-oam>twamp>twamp-light reflectors)

## Full Context

show test-oam twamp twamp-light reflectors

## Description

This command shows TWAMP-Light reflector information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS



## Output

The following output is an example of TWAMP Light reflector information.

### Output Example

```
show test-oam twamp twamp-light reflectors
=====
TWAMP-Light Reflectors
=====
Router/VPRN      Admin      UDP Port      Prefixes      Frames Rx      Frames Tx
-----
Base             Up         15000         1             0             0
500             Up         15000         2             6340          6340
-----
No. of TWAMP-Light Reflectors: 2
=====
```

## 20.22 refresh-lsas

### refresh-lsas

#### Syntax

```
refresh-lsas [lsa-type] [area-id]
```

#### Context

[\[Tree\]](#) (tools>perform>router>ospf refresh-lsas)

[\[Tree\]](#) (tools>perform>router>ospf3 refresh-lsas)

#### Full Context

```
tools perform router ospf refresh-lsas
```

```
tools perform router ospf3 refresh-lsas
```

#### Description

This command refreshes LSAs for OSPF.

#### Platforms

All

## 20.23 release-hold-down

### release-hold-down

#### Syntax

```
release-hold-down interface interface-name [ protocol protocol] [static-policer name]  
release-hold-down sap sap-id [protocol protocol] [static-policer name]
```

#### Context

[\[Tree\]](#) (tools>perform>security>dist-cpu-protection release-hold-down)

#### Full Context

tools perform security dist-cpu-protection release-hold-down

#### Description

This command releases a Distributed CPU Protection (DCP) policer from a hold-down countdown (or indefinite hold-down if configured as such).

#### Parameters

**interface** *interface-name*

Specifies Router interface name.

**sap** *sap-id*

Specifies sap identifier.

**protocol** *protocol*

Specifies DCP protocol name (for example, arp, dhcp).

**static-policer** *name*

Specifies DCP static policer name as defined in the DCP policy.

#### Platforms

All

## 20.24 remap-lease-state

### remap-lease-state

#### Syntax

```
remap-lease-state old-mac ieee-address mac ieee-address  
remap-lease-state sap sap-id [mac ieee-address]
```

## Context

[\[Tree\]](#) (tools>perform>subscr-mgmt remap-lease-state)

## Full Context

tools perform subscriber-mgmt remap-lease-state

## Description

This command allows the remapping of all existing hosts if network card on CMTS/WAC side is changed is required.

When this command is executed, the following restrictions apply:

- When **sap** is taken, all leases associated with the SAP are re-written.
  - For a SAP with a configured MAC in **lease-populate** command, this MAC is taken.
  - For a SAP without a configured MAC the MAC from tools command is taken.
  - For a SAP without a configured MAC and no MAC in tools command no action is performed.
- When using the **old-mac** option, providing a new MAC *ieee-address* is mandatory.

This command is applicable only when dealing with DHCP lease states which were instantiated using I2header mode of DHCP operation.

## Parameters

### **old-mac** *ieee-address*

Specifies the old MAC address to remap.

### **mac** *ieee-address*

Specifies that the provisioned MAC address is used in the anti-spoofing entries for this SAP when I2-header is enabled. The parameter may be changed mid-session. Existing sessions will not be re-programmed unless a **tools perform** command is issued for the lease.

### **sap-id**

Specifies the physical port identifier portion of the SAP definition.

When configured, the SAP parameter remaps all MAC addresses of DHCP lease states on the specified SAP. When no optional MAC parameter is specified, the **sap sap-id** command remaps all MAC addresses of lease states towards the MAC address specified in the I2-header configuration.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.25 remote-bfd-discrim

### remote-bfd-discrim

#### Syntax

**remote-bfd-discrim** *bfd-discriminator*

#### Context

[\[Tree\]](#) (tools>dump>router>lsp-bfd remote-bfd-discrim)

#### Full Context

tools dump router lsp-bfd remote-bfd-discrim

#### Description

This command displays information the BFD-on-LSP sessions with a specified remote discriminator.

#### Parameters

##### *bfd-discriminator*

Specifies the BFD discriminator.

**Values** to 4294967295

#### Platforms

All

## 20.26 remote-management

### remote-management

#### Syntax

**remote-management**

#### Context

[\[Tree\]](#) (clear>system>management-interface remote-management)

#### Full Context

clear system management-interface remote-management

## Description

This command clears the remote management service.

## Platforms

All

remote-management

## Syntax

**remote-management** [**detail**]

**remote-management manager** [*manager-name*]

## Context

[\[Tree\]](#) (show>system>management-interface remote-management)

## Full Context

show system management-interface remote-management

## Description

This command displays a summarized status of the Remote Management service.

## Parameters

### detail

Displays detailed remote management service information.

### *manager-name*

Displays remote management service information for the specified manager.

## Platforms

All

## Output

The following outputs are examples of the **show system management-interface remote- management** command and parameters, and the tables describe the fields.

- [Output Example: remote-management](#); output fields [Table 428: Output Fields: remote-management](#)
- [Output Example: remote-management detail](#); output fields [Table 429: Output Field: remote-management detail](#) and [Table 428: Output Fields: remote-management](#) for fields that are common to all the remote management output commands
- [Output Example: remote-management manager](#); output fields [Table 430: Output Fields: remote-management manager](#) and [Table 428: Output Fields: remote-management](#) for fields that are common to all the remote management output commands

## Output Example: remote-management

```
#show system management-interface remote-management
```

```

=====
Remote-management service
=====
Administrative State      : Enabled
Operational State       : Up
Operational down Reason  : N/A
-----
Number of configured managers      : 2
Number of operational managers     : 1
=====
    
```

Table 428: Output Fields: remote-management

Label	Description
Administrative State	Displays the administrative state of the management service
Operational State	Displays the operational state of the management service
Operational Down Reason	Displays the reason for the last operationally down state change
Number of configured managers	Displays the total number of configured managers
Number of operational managers	Displays the total number of managers whose operational state is Up

**Output Example: remote-management detail**

```

# show system management-interface remote-management detail
=====
Remote-management service
=====
Administrative state      : Enabled
Operational state       : Up
Operational down reason  : N/A
Last hello time         : 2020/10/06 10:24:29
Last Registration Time   : 2020/10/06 10:24:29
Last Registration Status : Succeeded
Sent registration messages : 83
Failed registration messages : 0
Cancelled registrations  : 0
-----
Number of configured managers : 1
Number of operational managers : 1
-----
Manager Name                Adm  Opr  TLS
  Manager IP
-----
nish-manager                Up   Up   No
  192.168.65.3
=====
    
```

Table 429: Output Field: remote-management detail

Label	Description
Last hello Time	Displays the time of the last hello
Last Registration Time	Displays the time of the last registration
Last Registration Status	Displays the time of the last registration status
Sent registration messages	Displays the number of sent registration messages
Failed registration messages	Displays the number of failed registration messages
Canceled registration messages	Displays the number of canceled registration messages
Manager name	Displays the name of the manager
Manager IP	Displays the IP address of the manager
Adm	Displays the administrative state of the manager
Opr	Displays the operational state of the manager
TLS	Displays whether TLS is configured for the manager

**Output Example: remote-management manager**

```
# show system management-interface remote-management manager nish-manager1
=====
Remote manager
=====
-----
Manager Name           : nish-manager1
Manager Address        : 192.168.65.3
Description             : My remote manager
-----
Administrative State   : Enabled
Operational State      : Up
Operational down reason : N/A
Router instance        : Management
Device name            : Dut-C
Device label           :
TLS secured            : No
TLS profile             : Not Set
Source Address         : 192.168.66.166
Source TCP port        : 57400
Manager TCP port       : 57400
Last registration status : Succeeded
Last registration time  : 2020/10/06 10:34:29
Last hello time        : 2020/10/06 10:34:29
Time until next hello   : 315s
Sent registration messages : 80
```

```
Failed registration messages : 0
Canceled registrations      : 0
=====
```

Table 430: Output Fields: remote-management manager

Label	Description
Manager name	Displays the name of this manager
Manager Address	Displays IP address of this manager
Description	Displays the configured description for this manager
Router instance	Displays the router instance used by this manager
Device name	Displays the device name that is configured for this manager
Device label	Displays the device label that is configured for this manager
TLS secured	Displays the configured TLS status
TLS profile	Displays TLS profile, if configured
Source address	Displays the configured source address
Source TCP port	Displays the TCP source port
Manager TCP port	Displays the manager TCP port
Last registration status	Displays the status of the last registration attempt for this manager
Last registration time	Displays the time of the last registration for this manager
Last hello time	Displays the time of the last hello for this manager
Time until next hello	Displays the time until the next hello for this manager
Sent registration messages	Displays the number of registration messages sent for this manager
Failed registration messages	Displays the number of failed registration messages for this manager
Cancelled registrations	Displays the number of canceled registration messages for this manager



## 20.27 replication-segment

### replication-segment

#### Syntax

```
replication-segment [root-address ip-address] [tree-id tree-id] [inst-id instance-id] [origin {Static | PCEP | SR-Policy}] [detail] [downstream-nodes id]
```

#### Context

[\[Tree\]](#) (show>router>p2mp-sr-tree>database replication-segment)

#### Full Context

```
show router p2mp-sr-tree database replication-segment
```

#### Description

This command displays information for the replication segments in the P2MP SR tree database.

#### Parameters

##### *ip-address*

Displays replication segment information for the root with the specified IPv4 address.

##### *tree-id*

Displays replication segment information for the P2MP SR tree with the specified ID.

**Values** 8193 to 16286

##### *instance-id*

Displays replication segment information for the instance with the specified ID.

**Values** 0 to 4294967295

##### **origin**

Displays information for policies created using the specified method.

##### **Static**

Displays static policies.

##### **PCEP**

Displays PCEP policies.

##### **SR-Policy**

Displays SR policies.

##### **detail**

Displays detailed information.

##### **downstream-nodes**

Displays next hop information.

*id*

Displays information for the next hop with the specified ID.

### Platforms

All

### Output

The following output is an example of P2MP SR tree database replication segment information.

#### Output Example

```
A:node-2>show>router>p2mp-sr-tree# database replication-segment
=====
Replication Segments
=====
Policy-name
RootAddr                TreeId    NumNHLFEs  Instance
Down-Reason            Tunnel    Origin     State
SID-action              InLabel   LTN/Local  Update-ID
Nexthop
Interface
Down-Reason            REP-SID   DwnStrNode State
Nexthop
Interface
Down-Reason            REP-SID   ProtectNhId State
-----
rs_8193_10.20.1.3_inst_1
10.20.1.3                8193     2          1
none                    73728    Static     inService
push                    N/A      True/False 0
  10.180.3.2
  ip-10.180.3.3
  none                    78432    1          inService
  ---
  ---
  N/A                      N/A      ---        ---
-----
Total replication segments : 1
=====
```

## replication-segment

### Syntax

**replication-segment** [*segment-name*] [*inst-id instance-id*] [*incoming-sid static-label*] [*origin* { **Static** | **PCEP** | **SR-Policy**}] [*oper* { **up** | **down**}] [*tree-id root-tree-id*] [*root-addr ip-address*]

### Context

**[Tree]** (show>router>p2mp-sr-tree replication-segment)

### Full Context

show router p2mp-sr-tree replication-segment

## Description

This command displays the information for the specified replication segment of the P2MP SR tree.

## Parameters

### *segment-name*

Specifies the name, up to 32 characters.

### *instance-id*

Specifies the instance ID.

**Values** 0 to 4294967295

### *static-label*

Specifies the static label ID.

**Values** 0 to 4294967295

### **origin**

Displays information for policies created using the specified method.

### **Static**

Displays static policies.

### **PCEP**

Displays PCEP policies.

### **SR-Policy**

Displays SR policies.

### **oper up**

Displays replication segments with operational status up.

### **oper down**

Displays replication segments with operational status down.

### *root-tree-id*

Specifies the P2MP SR tree ID.

**Values** 8193 to 16286

### *ip-address*

Specifies the root IPv4 address.

## Platforms

All

## Output

The following output is an example of replication segment information.

### Output Example

```
A:swsim103>show>router>p2mp-sr-tree# replication-segment
=====
```

```

Replication Segments
=====
Name          Origin InstId  NumNhIds  Adm/Opr
RootAddr      TreeId  InSID     Action
-----
rs-test-100-103  Static 1000    --        Up/Up
100.0.0.100     9000   30000    Pop
rs-test-103-100  Static 1000    1         Up/Up
100.0.0.103     9000   --        Push
rs-test-100-103-spmsi  Static 1000    --        Up/Down
100.0.0.100     9001   30001    Swap
rs-test-spmsi-103-100  Static 1000    1         Up/Up
100.0.0.103     9001   --        Push
-----
Total Replication Segments : 4
    
```

## 20.28 request

### request

#### Syntax

**request** *aps-id* {**protect** | **working**}

#### Context

**[Tree]** (tools>perform>aps request)

#### Full Context

tools perform aps request

#### Description

This command requests a manual switch to protection or working circuit.

#### Parameters

***aps-id***

Specifies the APS ID.

#### Values

<i>aps-id</i>	<i>aps-group-id</i>
aps	keyword
group-id	1 to 128

**protect**

This command requests a manual switch to a port that is acting as the protection circuit for the APS group.

**working**

This command requests a manual switch to a port that is acting as the working circuit for this APS group.

**Platforms**

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## 20.29 requirements

### requirements

**Syntax**

**requirements [detail]**

**Context**

[\[Tree\]](#) (show>chassis>power-management requirements)

**Full Context**

show chassis power-management requirements

**Description**

This command displays maximum power requirements for the installed devices.

**Parameters**

**detail**

Displays detailed information.

**Platforms**

7750 SR-1s, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s, 7950 XRS

**Output**

The following output is an example of power management requirements information, and [Table 431: Output Fields: show chassis power-management requirements](#) describes the output fields.

**Output Example: show chassis power-management requirements**

```
*A:Dut-A# show chassis power-management requirements
=====
Chassis Power Zone 1 Requirements
=====
                SUPPLY                REQUIREMENTS
```

```

Power Capacity   : 88000.00 Watts
Mode             : basic
Reserved Power   : 4400.00 Watts
Reqd. + Reserve  : 31334.00 Watts ( 36%)
Remaining Power  : 56666.00 Watts

Chassis/Fan     : 8600.00 Watts ( 10%)
IO Module       : 2028.00 Watts ( 2%)
CPM Module      : 450.00 Watts ( 1%)
Fabric Module   : 2120.00 Watts ( 2%)
MDA Module      : 11810.00 Watts ( 13%)
XIOM Module     : 1926.00 Watts ( 2%)
Total Required: 26934.00 Watts ( 31%)
Safety Level    : 26934.00 Watts (100%)
Safety Alert    : N/A
Alert Level     : N/A
    
```

\*A:Dut-A# show chassis power-management requirements detail

Chassis Power Zone 1 Requirements (detail)

```

=====
SUPPLY                                REQUIREMENTS
Power Capacity   : 88000.00 Watts
Power Module 1/1 : 4400.00 Watts
Power Module 1/2 : 4400.00 Watts
Power Module 1/3 : 4400.00 Watts
Power Module 1/4 : 4400.00 Watts
Power Module 1/5 : 4400.00 Watts
Power Module 1/6 : 4400.00 Watts
Power Module 1/7 : 4400.00 Watts
Power Module 1/8 : 4400.00 Watts
Power Module 1/9 : 4400.00 Watts
Power Module 1/10: 4400.00 Watts
Power Module 2/1 : 4400.00 Watts
Power Module 2/2 : 4400.00 Watts
Power Module 2/3 : 4400.00 Watts
Power Module 2/4 : 4400.00 Watts
Power Module 2/5 : 4400.00 Watts
Power Module 2/6 : 4400.00 Watts
Power Module 2/7 : 4400.00 Watts
Power Module 2/8 : 4400.00 Watts
Power Module 2/9 : 4400.00 Watts
Power Module 2/10: 4400.00 Watts

Chassis/Fan
 1/1      : 1075.00 Watts ( 1%)
 1/2      : 1075.00 Watts ( 1%)
 1/3      : 1075.00 Watts ( 1%)
 1/4      : 1075.00 Watts ( 1%)
 1/5      : 1075.00 Watts ( 1%)
 1/6      : 1075.00 Watts ( 1%)
 1/7      : 1075.00 Watts ( 1%)
 1/8      : 1075.00 Watts ( 1%)

IO Module
 Slot 1   : 551.00 Watts ( 1%)
 Slot 2   : 373.00 Watts ( 0%)
 Slot 3   : 609.00 Watts ( 1%)
 Slot 4   : 270.00 Watts ( 0%)
 Slot 5   : 225.00 Watts ( 0%)

CPM Module
 Slot A   : 225.00 Watts ( 0%)
 Slot B   : 225.00 Watts ( 0%)

Fabric Module
 Sfm 1    : 265.00 Watts ( 0%)
 Sfm 2    : 265.00 Watts ( 0%)
 Sfm 3    : 265.00 Watts ( 0%)
 Sfm 4    : 265.00 Watts ( 0%)
 Sfm 5    : 265.00 Watts ( 0%)
 Sfm 6    : 265.00 Watts ( 0%)
 Sfm 7    : 265.00 Watts ( 0%)
 Sfm 8    : 265.00 Watts ( 0%)

MDA Module
 MDA 1/1  : 1555.00 Watts ( 2%)
 MDA 1/2  : 1555.00 Watts ( 2%)
 MDA 2/1  : 1200.00 Watts ( 1%)
 MDA 2/2  : 1200.00 Watts ( 1%)
 MDA 3/1  : 2400.00 Watts ( 3%)
 MDA 3/2  : 2400.00 Watts ( 3%)
 MDA 4/1  : 600.00 Watts ( 1%)
 MDA 4/x2/1 : 150.00 Watts ( 0%)
 MDA 4/x2/2 : 150.00 Watts ( 0%)
 MDA 5/x1/1 : 150.00 Watts ( 0%)
 MDA 5/x1/2 : 150.00 Watts ( 0%)
 MDA 5/x2/1 : 150.00 Watts ( 0%)
 MDA 5/x2/2 : 150.00 Watts ( 0%)

XIOM Module
 XIOM 4/x2 : 642.00 Watts ( 1%)
 XIOM 5/x1 : 642.00 Watts ( 1%)
 XIOM 5/x2 : 642.00 Watts ( 1%)

Total Required: 26934.00 Watts ( 31%)
Safety Level    : 26934.00 Watts (100%)

Mode             : basic
Reserved Power   : 4400.00 Watts
    
```

```

Reqd. + Reserve : 31334.00 Watts ( 36%) Safety Alert : N/A
Remaining Power : 56666.00 Watts Alert Level : N/A
=====
    
```

Table 431: Output Fields: show chassis power-management requirements

Label	Description
SUPPLY	
Power Capacity	Specifies the total amount of power available to the chassis.
Safety Level	Specifies the configured Power Safety Level, which is a percentage of the worst case power consumption level.
Alert Level	Specifies the configured power level in Watts, which causes the system to raise an alarm if the available power level drops below a set level.
Mode	Specifies the configured mode: none, basic, advanced.
Reserved Power	Signifies the amount of power in reserve. For basic and advanced modes, the system keeps an additional margin of reserve power capacity. This margin is the provisioned capacity of the highest-rated power module. In advanced mode, the system will shed load to always keep this amount of power in reserve. In basic mode, it won't shed load to maintain the reserve, but it only allows cards or MDAs to load as long as the reserve power margin can be maintained.
Reqd. + Reserve	Specifies the Safety Level (Watts) + Reserved Power.
Remaining Power	Specifies the excess capacity. It is equal to ("Power Capacity" - "Reqd + Reserve").
REQUIREMENTS	
Fan	Specifies the amount of power required for each fan tray.
IO Module	Specifies the amount of power required for each IO Module.
CPM Module	Specifies the amount of power required for each CPM.
Fabric Module	Specifies the amount of power required for each SFM.
MDA Module	Specifies the amount of power required for each line card.
Total Required	Specifies the total amount of power required for all system elements.
Safety Level	Specifies the percentage configured with <b>configure system power-management power-safety-level percent</b> . This is a percentage of the total system requirement (Total Required). The corresponding value in Watts is also shown for information.

Label	Description
Safety Alert	Specifies the output of <b>configure system power-management power-safety-alert wattage</b> . A non-zero value indicates that the user wants to receive a warning when the system power capacity drops to within this number of Watts of the system level. If the power safety is 0, "N/A" is displayed in the output since no alert will be produced.
Alert Level	Specifies the value when the safety alert will be issued (= safety-level + safety alert). If the power safety alert is 0, "N/A" is displayed in the output since no alert will be produced.

## 20.30 resignal

### resignal

#### Syntax

**resignal** {**lsp** *lsp-name* **path** *path-name* | **delay** *minutes*}

**resignal** {**p2mp-lsp** *p2mp-lsp-name* **p2mp-instance** *p2mp-instance-name* | **p2mp-delay** *p2mp-minutes*}

**resignal** {**sr-te-lsp** *sr-te-lsp-name* **path** *path-name* | **sr-te-delay** *sr-te-minutes*}

#### Context

**[Tree]** (tools>perform>router>mpls resignal)

#### Full Context

tools perform router mpls resignal

#### Description

This command resignals a specific path of a RSVP-TE P2P LSP, a RSVP P2MP LSP tree, or a SR-TE LSP. When an **lsp-name** and **path-name** are provided, a manual resignal is performed for the named path of the named LSP only. In this case, the new path is always programmed in data path regardless of the metric comparison between the new path and the current path.

The **delay**, **p2mp-delay**, or the **sr-te-delay** parameters override the global resignal timer value of all LSPs of the corresponding type for resignal. At the expiry of this override timer, the procedures of the timer based resignal are applied to all LSPs of the corresponding type. The resignal timer is then reset to its configured value in MPLS configuration. In this case, the new path is programmed in data path only if the metric of the new path is different from one of the current path.

#### Parameters

##### ***lsp lsp-name***

Specifies an existing LSP name, up to 64 characters in length, to resignal.



***path path-name***

Specifies an existing path name to resignal.

***delay minutes***

Configures an override of the global resignal timer or all RSVP-TE P2P LSPs.

**Values** 0 to 30

***p2mp-lsp p2mp-lsp-name***

Specifies an existing point-to-multipoint RSVP-TE LSP name, up to 64 characters, to resignal.

***p2mp-instance p2mp-instance-name***

Specifies a name, up to 32 characters, that identifies the P2MP LSP instance.

***p2mp-delay p2mp-minutes***

Configures an override of the global resignal timer or all RSVP-TE P2MP LSPs.

**Values** 0 to 60

***sr-te-delay sr-te-minutes***

Configures an override of the global resignal timer or all SR-TE LSPs.

**Values** 0 to 30

***sr-te-lsp sr-te-lsp-name***

Specifies the name of a SR-TE LSP to resignal. The name must be 64 characters maximum.

**Platforms**

All

## 20.31 resignal-bypass

### resignal-bypass

**Syntax**

**resignal-bypass** {*lsp bypass-lsp-name* [**force**] | **delay minutes**}

**Context**

[\[Tree\]](#) (tools>perform>router>mpls resignal-bypass)

**Full Context**

tools perform router mpls resignal-bypass

## Description

This command performs a manual re-optimization of a specific dynamic or manual bypass LSP, or of all dynamic bypass LSPs.

The name of a manual bypass LSP is the one provided by the user at configuration time. The name of a dynamic bypass LSP is shown in the output of **show>router>mpls>bypass-tunnel dynamic detail**.

The **delay** option triggers the global re-optimization of all dynamic bypass LSPs at the expiry of the specified delay. Effectively, this option forces the global bypass resignal timer to expire after an amount of time equal to the value of the **delay** parameter. This option has no effect on a manual bypass LSP.

However, when *bypass-lsp-name* is specified, the named dynamic or manual bypass LSP is signaled and the associations are moved only if the new bypass LSP path has a lower cost than the current one. This behavior is different from that of the similar command for the primary or secondary active path of an LSP, which signals and switches to the new path regardless of the cost comparison. This handling is required because a bypass LSP may have a large number of PSB associations and the processing churn is much higher.

In the specific case where the name corresponds to a manual bypass LSP, the LSP is torn down and resignaled using the new path provided by CSPF if no PSB associations exist. If one or more PSB associations exist but no PLR is active, the command fails and the user is required to explicitly enter the **force** option. In this case, the manual bypass LSP is torn down and resignaled, leaving temporarily the associated LSP primary paths unprotected. If one or more PLRs associated with the manual bypass LSP is active, the command fails.

Finally, and as with the timer based resignal, the PSB associations are checked for the SRLG and admin group constraints using the updated information provided by CSPF for the current path and new path of the bypass LSP.

## Parameters

### *lsp bypass-lsp-name [force]*

Specifies the name of the dynamic or manual bypass LSP. The force option is required when the name corresponds to a manual bypass LSP and the LSP has PSB associations.

### *delay minutes*

Specifies the time, in minutes, MPLS waits before attempting to re-signal dynamic bypass LSP paths originated on the system.

**Values** 0 to 30

## Platforms

All

## 20.32 resource-failures

### resource-failures

## Syntax

**resource-failures**

### Context

[\[Tree\]](#) (clear>router>ldp resource-failures)

### Full Context

clear router ldp resource-failures

### Description

This command clears resource overload status in the LDP instance.

### Platforms

All

## 20.33 resource-usage

### resource-usage

### Syntax

**resource-usage**

### Context

[\[Tree\]](#) (tools>dump resource-usage)

### Full Context

tools dump resource-usage

### Description

Commands in this context display system resource information, such as policers, including data for total, available, and free numbers for each resource.

### Platforms

All

## 20.34 resources

### resources

### Syntax

**resources**

## Context

[\[Tree\]](#) (tools>dump>filter resources)

## Full Context

tools dump filter resources

## Description

Commands in this context display filter resources utilization.

## Platforms

All

## resources

## Syntax

**resources mda** *mda-id*

## Context

[\[Tree\]](#) (tools>dump>nat>isa resources)

## Full Context

tools dump nat isa resources

## Description

This command enables dump ISA resources for an MDA.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of this command.

### Output Example

```
AR12_PPP0E# tools dump nat isa resources mda 3/1
```

```
Resource Usage for Slot #3 Mda #1:
```

	Total	Allocated	Free
Flows	6291456	0	6291456
Policies	256	2	254
Port-ranges	1310720	128	1310592
Ports	12884901888	0	12884901888
IP-addresses	65536	1	65535
Large-scale hosts	524288	0	524288
L2-aware subscribers	65536	0	65536
L2-aware hosts	65536	0	65536

Delayed ICMP's	200	0	200
ALG session	1572864	0	1572864
LI entries	8191	0	8191
Upstream fragment lists	16384	0	16384
Downstream fragment lists	16384	0	16384
Upstream fragment holes	131072	0	131072
Downstream fragment holes	131072	0	131072
Upstream fragment bufs	13824	0	13824
Downstream fragment bufs	13824	0	13824
flow log dest. set 0	2	0	2
flow log packets set 0	50	0	50
flow log dest. set 1	2	0	2
flow log packets set 1	50	0	50
flow log dest. set 2	1	0	1
flow log packets set 2	50	0	50

A:SR12\_PPP0E#

## resources

### Syntax

**resources**

### Context

[\[Tree\]](#) (show>router>bfd resources)

### Full Context

show router bfd resources

### Description

This command displays information about BFD resource usage.

### Platforms

All

## 20.35 restart

### restart

### Syntax

**restart** *brg-id* *brg-ident*

### Context

[\[Tree\]](#) (tools>perform>subscr-mgmt>pppoe-client restart)

### Full Context

```
tools perform subscriber-mgmt vrgw brg pppoe-client restart
```

### Description

This command forcibly restarts the PPPoE client linked to the BRG instance. The restart does not remove BRG or related session state, however, forwarding is impacted.

### Parameters

*brg-ident*

The string identifying the BRG.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.36 retailers

### retailers

### Syntax

```
retailers
```

### Context

[\[Tree\]](#) (show>service>id retailers)

### Full Context

```
show service id retailers
```

### Description

This command displays service retailer information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of service retailer information.

### Output Example

```
*A:ALA-48>config# show service id 101 retailers
=====
Retailers for service 101
=====
Retailer Svc ID           Num Static Hosts      Num Dynamic Hosts
-----
```

```
102                 3                 1
105                 0                 1
-----
Number of retailers : 2
=====
*A:ALA-48>config#
```

## 20.37 revert

revert

### Syntax

revert [*lsp lsp-name*]

### Context

[\[Tree\]](#) (tools>perform>router>mpls revert)

### Full Context

tools perform router mpls revert

### Description

Use this command to cause a named LSP, which is currently using a secondary path and for which the revert-timer has been configured, to switch back to using the primary path. Any outstanding revert-timer is canceled.

The primary path must be up for this command to be successful.

### Parameters

*lsp-name*

Specifies an existing LSP name, up to 64 characters in length.

### Platforms

All

## 20.38 rib-api

rib-api

### Syntax

rib-api

## Context

[\[Tree\]](#) (show>router rib-api)

## Full Context

```
show router rib-api
```

## Description

This command displays RIB-API protocol entities information.

## Platforms

All

rib-api

## Syntax

```
rib-api
```

## Context

[\[Tree\]](#) (clear>router rib-api)

## Full Context

```
clear router rib-api
```

## Description

This command clears RIB-API protocol entities information.

## Platforms

All

rib-api

## Syntax

```
rib-api
```

## Context

[\[Tree\]](#) (tools>dump>router rib-api)

## Full Context

```
tools dump router rib-api
```

## Description

This command configures the dump tools for RIB-API protocol instance.



## Platforms

All

rib-api

## Syntax

rib-api

## Context

[\[Tree\]](#) (monitor>router rib-api)

## Full Context

monitor router rib-api

## Description

This command monitors the RIB-API protocol entities information.

## Platforms

All

## 20.39 ring

ring

## Syntax

ring peer *ip-address* ring *sync-tag*

## Context

[\[Tree\]](#) (clear>redundancy>multi-chassis>mcr>statistics ring)

## Full Context

clear redundancy multi-chassis mc-ring statistics ring

## Description

This command clears multi-chassis ring statistics.

## Parameters

*ip-address*

Clears ring statistics for the specified IP address.

**Values** ipv4-address: a.b.c.d

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x – [0 to FFFF] H
- d – [0 to 255] D

***sync-tag***

Clears ring statistics for the specified sync tag. 32 characters maximum.

**Platforms**

All

## 20.40 ring-node

### ring-node

**Syntax**

**ring-node peer** *ip-address* **ring** *sync-tag* **node** *ring-node-name*

**Context**

[\[Tree\]](#) (clear>redundancy>multi-chassis>mcr>statistics ring-node)

**Full Context**

clear redundancy multi-chassis mc-ring statistics ring-node

**Description**

This command clears multi-chassis ring statistics.

**Parameters**

***ip-address***

Clears ring-node peer statistics for the specified IP address.

**Values** ipv4-address: a.b.c.d

ipv6-address:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x – [0 to FFFF] H
- d – [0 to 255] D

### ***sync-tag***

Clears ring-node peer statistics for the specified synchronization tag. The tag can be up to 32 characters.

### ***ring-node-name***

Clears ring-node peer statistics for the specified ring node name. The ring node name can be up to 32 characters.

## **Platforms**

All

## **20.41 ring-nodes**

### ring-nodes

#### **Syntax**

**ring-nodes peer *ip-address* ring *sync-tag***

#### **Context**

[\[Tree\]](#) (clear>redundancy>multi-chassis>mcr ring-nodes)

#### **Full Context**

clear redundancy multi-chassis mc-ring ring-nodes

#### **Description**

This command clears multi-chassis ring unreferenced ring nodes.

#### **Parameters**

##### ***ip-address***

Clears ring statistics for the specified IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x – [0 to FFFF] H
    - d – [0 to 255] D

##### ***sync-tag***

Clears ring statistics for the specified sync tag.

## Platforms

All

## 20.42 rip

```
rip
```

### Syntax

```
rip
```

### Context

[\[Tree\]](#) (clear>router rip)

### Full Context

```
clear router rip
```

### Description

Commands in this context clear and reset RIP protocol entities.

## Platforms

All

```
rip
```

### Syntax

```
rip
```

### Context

[\[Tree\]](#) (show>router rip)

### Full Context

```
show router rip
```

### Description

Displays RIP information.

## Platforms

All

## rip

### Syntax

rip

### Context

[\[Tree\]](#) (monitor>router rip)

### Full Context

monitor router rip

### Description

This command monitors commands for the RIP instance.

### Platforms

All

## 20.43 rip-policy

## rip-policy

### Syntax

rip-policy

rip-policy *rip-policy-name* [**association**]

### Context

[\[Tree\]](#) (show>subscr-mgmt rip-policy)

### Full Context

show subscriber-mgmt rip-policy

### Description

This command displays RIP policy information.

### Parameters

***rip-policy-name***

Specifies the RIP policy name, up to 32 characters.

**association**

Displays information associated with the RIP policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.44 ripng

ripng

### Syntax

ripng

### Context

[\[Tree\]](#) (clear>router ripng)

### Full Context

clear router ripng

### Description

Commands in this context clear and reset RIP-NG protocol entities.

### Platforms

All

ripng

### Syntax

ripng

### Context

[\[Tree\]](#) (show>router ripng)

### Full Context

show router ripng

### Description

Commands in this context display RIP-NG related information.

### Platforms

All

## ripng

### Syntax

ripng

### Context

[\[Tree\]](#) (monitor>router ripng)

### Full Context

monitor router ripng

### Description

This command monitors commands for the RIP instance.

### Platforms

All

## 20.45 rollback

## rollback

### Syntax

rollback [rescue]

### Context

[\[Tree\]](#) (show>system rollback)

### Full Context

show system rollback

### Description

This command displays rollback configuration and state.

### Parameters

**rescue**

Specifies the rescue configuration.

### Platforms

All

## Output

This command displays classic CLI rollback file and checkpoint information.



### Note:

This command is not available in the MD-CLI. Use the MD-CLI **show system management-interface commit-history** command.

## Output Example

```
A:dut-a_a># show system rollback
=====
Rollback Information
=====
Rollback Location          : cf1:/Rollback
Save
  Last Rollback Save Result : In Progress, Successful or Failed
  Last Save Completion Time : 10/15/2010 21:24:06
Revert
  In Progress               : Yes, No
  Last Revert Initiated Time : 10/15/2010 21:26:23
  Last Revert Initiated User : xyz
  Last Initiated Checkpoint  : cf1:/Rollback.rb.3
  Last Completed Revert Result : Successful or Failed
  Last Revert Completion Time : 10/15/2010 21:27:19
=====
Rollback Files
=====
Idx      Suffix  Creation time      Release  User
      Comment
-----
latest  .rb      2010/10/15 21:24:02  9.0.R4  fred
        This checkpoint was saved after the 3 VPLS services were created
1       .rb.1    2010/10/15 21:23:58  9.0.R4  John
        John's checkpoint on Sunday
2       .rb.2    2010/10/15 21:23:52  9.0.R4  admin
        A long checkpoint comment that an operator is using to summarize
        various some of the changes that were made. They may even have so
        much to say that they use the maximum comment size. Notice that
        words are not chopped.
...
9       .rb.9    2010/10/14 22:00:01  9.0.R4  admin
        VPLS services 1000-2000 created
...
53      .rb.53   2010/10/14 22:10:10  9.0.R4  admin
-----
No. of Rollback Files: 10
=====
```

## 20.46 root-objects

### root-objects

#### Syntax

**root-objects**



## Context

**[Tree]** (show>service>dynsvc root-objects)

## Full Context

show service dynamic-services root-objects

## Description

This command displays the root objects created by dynamic data services.



### Note:

This command is not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of dynamic services root object information.

### Output Example

```
# show service dynamic-services root-objects
=====
Dynamic Service Root Objects
=====
OID prefix           : svcRowStatus
OID index            : .100000
Snippet name         : vprn
Snippet instance     : VRF-1
Orphan time          : N/A
-----
No. of Root Objects: 1
=====
```

[Table 432: Root Objects Field Descriptions](#) describes the Root Objects fields.

*Table 432: Root Objects Field Descriptions*

Output field	Description
OID prefix	The corresponding SNMP OID prefix for this root object.
OID index	The corresponding SNMP OID index for this root object.
Snippet name	The name of the python function that created this root object. The name is set to N/A when the root-object is orphaned.
Snippet instance	The instance for which the python function with "Snippet name" created this root object. If the snippet is a result from a dynamic reference, then the snippet instance is the reference-id string passed in the dyn.reference(). If the snippet is not the result from a dynamic reference, then the

Output field	Description
	snippet instance is the dynamic data service SAP-ID. The instance is set to N/A when the root object is orphaned.
Orphan time	The timestamp when the root-object became orphaned (root-object not deleted when corresponding teardown function is called) or N/A if the root-object is not orphaned.

## 20.47 route

### route

#### Syntax

**route** [family] [ip-prefix/prefix-length] [detail]  
**route next-hop** {ip-address | ipv6-address} [detail]

#### Context

[\[Tree\]](#) (show>router>rib-api route)

#### Full Context

show router rib-api route

#### Description

This command displays RIB-API route information.

#### Parameters

##### family

Specifies the IPv4 or IPv6 address route family.

**Values** ipv4, ipv6

##### ip-prefix/prefix-length

Displays RIB-API route entries only matching the specified IP prefix and length.

##### Values

ipv4-prefix:	a.b.c.d (host bits must be 0)
ipv4-prefix-length	0 to 32
ipv6-prefix:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

ipv6-prefix-length: 0 to 128

**detail**

Displays detailed RIB-API route information.

**ip-address**

Specifies the next-hop IPv4 address of the RIB-API route.

**Values** ipv4-address: a.b.c.d

**ipv6-address**

Specifies the next-hop IPv6 address of the RIB-API route.

**Values** ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)  
 x:x:x:x:x:d.d.d.d  
 x: [0 to FFFF]H  
 d: [0 to 255]D

**Platforms**

All

**Output**

The following output is an example of RIB-API route information.

**Output Example**

```
*A:Dut-A# /show router rib-api route
=====
RibApi Route Table (Router: Base) Family: IPv4
=====
Prefix          Rib-API   Client IP   Act
  Next Hop      Pref
-----
100.0.0.0/8     182       10.254.135.92  N
  10.20.1.3
101.0.0.0/8     182       10.254.135.92  Y
  10.21.1.3
-----
No. of Rib-API Routes: 2
=====
```

```
*A:Dut-A# /show router rib-api route detail
=====
RibApi Route Table (Router: Base) Family: IPv4
=====
Prefix          : 100.0.0.0/8
Client IP       : 10.254.135.92
Client Tag      : 4
Metric          : 61130
Rib-API Pref    : 182
Stale client    : N
RTM Preference  : 171
```

```

Last Updated      : 02/07/2020 23:44:17

NextHop          : 10.20.1.3
Active In RTM    : N
Inactive Reason  : Next-hop not resolved or no usable tunnels
-----
Prefix           : 101.0.0.0/8
Client IP        : 10.254.135.92
Client Tag       : 4
Metric           : 61130
Rib-API Pref     : 182
Last Updated     : 02/07/2020 23:44:44

Stale client     : N
RTM Preference   : 171

NextHop          : 10.21.1.3
Active In RTM    : Y
Inactive Reason  : Not Applicable
-----
No. of Rib-API Routes: 2
=====
*A:Dut-A#
    
```

Table 433: RIB-API Route Fields

Label	Description
Family	The route family: <ul style="list-style-type: none"> <li>• ipv4</li> <li>• ipv6</li> </ul>
Prefix	The IP prefix for the route RTM entry
Rib-API Pref	The RIB-API preference opposing to the routes from different clients with the same prefix
Client IP	The IP address of the gRPC client that configured the RIB-API route entry
Act	The boolean (YES or NO) that indicates whether the status of the RIB-API route in RTM is active or not
Next Hop	The next-hop IP address of the RIB-API route entry
No. of Rib-API Routes	The total number of the displayed RIB-API routes
Client Tag	The client tag unique identifier assigned to each gRPC connection by the gRPC server
Stale client	The stale client (Y or N) that indicates if the route is from a disconnected gRPC client
Metric	The metric of the route
RTM Preference	The RTM preference opposing to the routes having the same prefix from different protocols (BGP, OSPF)
Last Updated	The time stamp of when the route was added or modified from a gRPC client

Label	Description
NextHop	The next-hop IP address of the RIB-API route entry
Active In RTM	The boolean (Y or N) that indicates whether the status of the RIB-API route is active or not in RTM
Inactive Reason	The inactive reason or the route not active in RTM

## 20.48 route-downloader

### route-downloader

#### Syntax

**route-downloader** *route-downloader-name* [**router** *router-instance* | **service-name** *service-name*] [**family** *family*]

#### Context

**[Tree]** (clear>aaa route-downloader)

#### Full Context

clear aaa route-downloader

#### Description

This command clears all the radius-downloaded routes from the internal downloader cache (or protocol RIB/db) (and thus eventually from the RTM itself). The parameters **vprn** and/or **family** allow to restrict the deletion of those routes learned in a particular address family (IPv4 or IPv6) and/or a particular VPRN.

By default, all VPRNs and both IPv4 and IPv6 families are affected.



#### Note:

Clearing the internal protocol DB means the corresponding prefixes that were deleted should be removed from the RTM (and from any other exports) as well.

#### Parameters

##### ***route-downloader-name***

Specifies the route downloader name, up to 32 characters.

##### ***router-instance***

Specifies the router instance name (Base) or service ID.

##### ***service-name***

Specifies the configured service name for the routing instance, up to 64 characters

### ***family***

Specifies to limit the removal or prefixes only belonging to the address family IPv4 or IPv6. Only these two values are accepted.

**Values**    ipv4, ipv6

### **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## **route-downloader**

### **Syntax**

**route-downloader**

### **Context**

[\[Tree\]](#) (tools>perform>aaa route-downloader)

### **Full Context**

tools perform aaa route-downloader

### **Description**

Commands in this context configure route downloader parameters.

### **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## **route-downloader**

### **Syntax**

**route-downloader** [*route-downloader-name*]

**route-downloader** *route-downloader-name* **statistics**

### **Context**

[\[Tree\]](#) (show>aaa route-downloader)

### **Full Context**

show aaa route-downloader

### **Description**

This command displays RADIUS route downloader information.

## Parameters

### ***route-downloader-name***

Specifies the route downloader name, up to 32 characters.

### **statistics**

Displays RADIUS route downloader information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.49 route-next-hop-policy

### route-next-hop-policy

## Syntax

**route-next-hop-policy**

## Context

[\[Tree\]](#) (show>router route-next-hop-policy)

## Full Context

show router route-next-hop-policy

## Description

This command displays route next-hop policies related information.

## Platforms

All

## 20.50 route-table

### route-table

## Syntax

**route-table** [*family*] [*ip-prefix/prefix-length*] [**longer** | **exact** | **protocol** *protocol-name*] [**instance** *instance-id*] [**all**] [**next-hop-type** *type*] [**qos**] [**alternative**] [**accounting-class**]

**route-table** [*family*] [**summary**]

**route-table** *tunnel-endpoints* [*ip-prefix* [*/prefix-length*]] [**longer** | **exact**] [**detail**]

**route-table** [*family*] [*ip-prefix/prefix-length*] [**longer** | **exact** | **protocol** *protocol-name*] [**instance** *instance-id*] [**extensive** [**all**]

## Context

[\[Tree\]](#) (show>router route-table)

## Full Context

show router route-table

## Description

This command displays the active routes in the routing table.

If no command line arguments are specified, all routes are displayed, sorted by prefix.

## Parameters

### *family*

Displays the specified family.

**Values** ipv4, ipv6, mcast-ipv4, mcast-ipv6

### *ip-prefix/prefix-length*

Displays routes only matching the specified *ip-prefix* and optional *mask*.

**Values** ipv4-prefix: a.b.c.d (host bits must be 0)

ipv4-prefix-le: 0 to 32

ipv6-prefix:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF] H
- d: [0 to 255] D

ipv6-prefix-le: 0 to 128

### **longer**

Displays routes matching the *ip-prefix/mask* and routes with longer masks.

### **exact**

Displays the exact route matching the ip-prefix/mask.

### *protocol-name*

Displays routes learned from the specified protocol.

**Values** aggregate, arp-nd, bgp, bgp-label, bgp-vpn, dhcpv6-na, dhcpv6-pd, dhcpv6-pd-exc, dhcpv6-ta, evpn-iff, evpn-ifl, host, ipsec, isis, ldp, local, managed, nat, nd-ra, ospf, ospf3, periodic, rib-api, rip, ripng, srv6, srv6-policy, static, sub-mgmt, video, vpn-leak





**Note:**

It is possible that a specific platform only supports a subset of the above protocol values.

***instance-id***

Specifies the IGP instance of the route table.

- Values**
- For isis — 0 to 127
  - For ospf — 0 to 31
  - For ospfv3 —
    - 0 to 31 (when ospfv3 is used for IPv6)
    - 64 to 95 (when ospfv3 is used for IPv4)



**Note:**

It is possible that a specific platform only supports a subset of the above values.

**all**

Displays all routes, including inactive routes.

**type**

Displays only the tunneled next-hops. For each route entry, the tunnel owner and tunnel ID is shown.

- Values** tunneled

**qos**

Displays QoS active routes in the routing table.

**alternative**

Displays LFS and backup route details.

**accounting-class**

Displays accounting class information.



**Note:**

Not all platforms support this parameter.

**summary**

Displays route table summary information.

**tunnel-endpoints**

Displays tunnel endpoint information.

**extensive**

Displays detailed information.

**Platforms**

All

## Output

The following output are examples of route table information, and [Table 434: Standard Show Route Table Field Descriptions](#) describes the output fields.

### Output Example Standard Route Table Information

The following output shows standard route table information.

```
*A:ALA-12# show router 3 route-table 10.10.0.4
=====
Route Table
=====
Dest Address      Next Hop          Type  Protocol  Age    Metric  Pref
-----
10.10.0.4/32     10.10.34.4      Remote OSPF      3523    1001    10
-----
*A:ALA-12#

*A:ALA-12# show router 3 route-table 10.10.0.4/32 longer
=====
Route Table
=====
Dest Address      Next Hop          Type  Protocol  Age    Metric  Pref
-----
10.10.0.4/32     10.10.34.4      Remote OSPF      3523    1001    10
-----
No. of Routes: 1
=====
+ : indicates that the route matches on a longer prefix
*A:ALA-12#

*A:ALA-12# show router 3 route-table protocol ospf
=====
Route Table
=====
Dest Address      Next Hop          Type  Protocol  Age    Metric  Pref
-----
10.10.0.1/32     10.10.13.1      Remote OSPF      65844   1001    10
10.10.0.2/32     10.10.13.1      Remote OSPF      65844   2001    10
10.10.0.4/32     10.10.34.4      Remote OSPF      3523    1001    10
10.10.0.5/32     10.10.35.5      Remote OSPF     1084022 1001    10
10.10.12.0/24    10.10.13.1      Remote OSPF      65844   2000    10
10.10.15.0/24    10.10.13.1      Remote OSPF     58836   2000    10
10.10.24.0/24    10.10.34.4      Remote OSPF      3523    2000    10
10.10.25.0/24    10.10.35.5      Remote OSPF     399059  2000    10
10.10.45.0/24    10.10.34.4      Remote OSPF      3523    2000    10
-----
*A:ALA-12#

*A:ALA-12# show router 3 route-table summary
=====
Route Table Summary
=====
Active Available
-----
Static      1         1
Direct      6         6
BGP          0         0
OSPF         9         9
ISIS         0         0
```

```

RIP                0                0
Aggregate          0                0
-----
Total              15              15
=====
*A:ALA-12#
    
```

Table 434: Standard Show Route Table Field Descriptions

Label	Description
Dest Address	The route destination address and mask
Next Hop [Interface Name]	The next hop interface name
Next Hop	The next hop IP address for the route destination
Type	Local — The route is a local route Remote — The route is a remote route
Protocol	The protocol through which the route was learned
Age	The route age in seconds for the route
Metric	The route metric value for the route
Pref	The route preference value for the route
No. of Routes	The number of routes displayed in the list

**Output Example NAT**

The following output is an example showing that NAT routes are visible in the routing table.

```

*A:Dut-C# /show router 101 route-table
=====
Route Table (Service: 101)
=====
Dest Prefix[Flags]          Type  Proto  Age      Pref
  Next Hop[Interface Name]           Metric
-----
11.11.11.0/24              Local  Local  00h22m33s  0
  toIxia2.101                0
160.0.0.0/16               Remote  Static  00h22m30s  5
  11.11.11.8                  1
200.0.0.0/16               Remote  NAT     00h02m20s  0
  NAT inside                  0
200.1.0.0/16               Remote  NAT     00h02m20s  0
  NAT inside                  0
210.0.1.0/24               Remote  NAT     00h02m20s  0
  NAT inside                  0
210.1.1.0/24               Remote  NAT     00h02m20s  0
  NAT inside                  0
210.6.1.0/24               Remote  NAT     00h02m20s  0
  NAT inside                  0
210.7.1.0/24               Remote  NAT     00h02m20s  0
  NAT inside                  0
-----
    
```

```
No. of Routes: 8
Flags: n = Number of times nexthop is repeated
      B = BGP backup route available
      L = LFA nexthop available
      S = Sticky ECMP requested
```

```
=====
*A:Dut-C#
```

### Output Example VPRN

The following output is an example of a VPRN on the standby PE for prefix 10.13.1.0/24.

```
*A:ALA-12# show router 1 route-table 10.13.1.0/24 all
=====
Route Table (Service: 1)
=====
Dest Prefix[Flags]                Type  Proto  Age      Pref
  Next Hop[Interface Name]        Active Metric
-----
10.13.1.0/24 [E]                  Remote BGP    00h01m44s 170
  10.3.1.1                        N      0
10.13.1.0/24                      Remote BGP VPN 00h01m19s 170
  10.15.1.100 (tunneled)          Y      0
=====
```

### Output Example IP Address

The following are output examples for an IP address.

```
*A:ALA-12# show router 1 route-table 4.4.1.4/32
=====
Route Table (Service: 1)
=====
Dest Prefix[Flags]                Type  Proto  Age      Pref
  Next Hop[Interface Name]        Active Metric
-----
4.4.1.4/32                        Remote BGP VPN 00h00m03s 170
  3ffe::a14:102 (tunneled:SR-Policy:917546)
                                     0
-----
```

```
*A:ALA-12# show router 1 route-table 3FFE::404:104/128
=====
IPv6 Route Table (Service: 1)
=====
Dest Prefix[Flags]                Type  Proto  Age      Pref
  Next Hop[Interface Name]        Active Metric
-----
3ffe::404:104/128                Remote BGP VPN 00h00m07s 170
  3ffe::a14:102 (tunneled:SR-Policy:917546)
                                     0
-----
```

```
No. of Routes: 1
Flags: n = Number of times nexthop is repeated
      B = BGP backup route available
      L = LFA nexthop available
      S = Sticky ECMP requested
```

```
*A:ALA-12# show router route-table 180.10.0.1/32
=====
Route Table (Router: Base)
=====
Dest Prefix[Flags]                Type  Proto  Age      Pref
```

Next Hop[Interface Name]			Metric
180.10.0.1/32 [B][S] 10.10.10.1	Remote	BGP	00h00m49s 170 0
180.10.0.1/32 [B][S] 10.10.10.5	Remote	BGP	00h00m49s 170 0
180.10.0.1/32 [B][S] 10.10.10.10	Remote	BGP	00h00m49s 170 0

-----  
 No. of Routes: 1  
 Flags: n = Number of times nexthop is repeated  
       B = BGP backup route available  
       L = LFA nexthop available  
       S = sticky ECMP requested  
 =====

### Output Example Extensive

The following output is an example of the extensive output with unequal-cost ECMP BGP routes.

```
*A:vRR>config>router# show router route-table extensive 200.200.200.200/32
=====
Route Table (Router: Base)
=====
Dest Prefix      : 200.200.200.200/32
Protocol         : BGP
Age              : 01h20m41s
Preference      : 170
Indirect Next-Hop : 10.0.0.2
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 9
Resolving Next-Hop : 10.0.0.2
  Interface      : to_bridge_br2
  Metric         : 0
  ECMP-Weight    : N/A
Indirect Next-Hop : 192.0.2.2
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 5
Resolving Next-Hop : 192.0.2.2
  Interface      : to_bridge_br3
  Metric         : 0
  ECMP-Weight    : N/A
-----
No. of Destinations: 1
=====

*A:vRR>config>router# show router route-table 5.3.0.1/32 extensive
=====
Route Table (Router: Base)
=====
Dest Prefix      : 5.3.0.1/32
Protocol         : BGP
Age              : 00h00m59s
Preference      : 170
Indirect Next-Hop : 10.0.0.1
  QoS            : Priority=n/c, FC=n/c
  Source-Class   : 0
  Dest-Class     : 0
  ECMP-Weight    : 1
Resolving Next-Hop : 1.0.0.2 (RSVP tunnel:115)
```

```
Metric : 10
ECMP-Weight : 1
Resolving Next-Hop : 1.0.0.2 (RSVP tunnel:61443)
Metric : 10
ECMP-Weight : 1
Indirect Next-Hop : 10.0.0.2
QoS : Priority=n/c, FC=n/c
Source-Class : 0
Dest-Class : 0
ECMP-Weight : 30
Resolving Next-Hop : 1.0.0.3 (RSVP tunnel:94)
Metric : 10
ECMP-Weight : 20
Resolving Next-Hop : 1.0.0.3 (RSVP tunnel:61442)
Metric : 10
ECMP-Weight : 1
-----
No. of Destinations: 1
=====
```

## 20.51 route-target

### route-target

#### Syntax

```
route-target [source-as as-number] [brief] [ aspath-regex reg-exp] [community comm-id]
route-target [rtc-prefix rtc-prefix] [hunt] [ brief] [aspath-regex reg-exp] [ community comm-id]
route-target rtc-prefix rtc-prefix [aspath-regex reg-exp] [community comm-id]
route-target [rtc-prefix rtc-prefix] [detail | longer] [aspath-regex reg-exp] [community comm-id]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes route-target)

#### Full Context

```
show router bgp routes route-target
```

#### Description

This command displays BGP route target routes.

#### Parameters

##### *as-number*

Specifies the source AS number.

**Values** 0 to 4294967295

### ***rtc-prefix***

Filters the route-target constraint routes to include only those routes matching a specific NLRI string.

**Values** *source-as:{ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val}/prefix-length*

*ip-addr:* a.b.c.d

*comm-val:* 0 to 65535

*2byte-asnumber:* 0 to 65535

*ext-comm-val:* 0 to 4294967295

*4byte-asnumber:* 0 to 4294967295

*prefix-length:* 0 to 96

### ***detail***

Displays detailed information.

### ***longer***

Displays the specified route and subsets of the route.

### ***reg-exp***

Displays routes matching the specified regular expression, up to 80 characters.

### ***comm-id***

Specifies the community ID, up to 72 characters.

**Values** *[as-num:comm-val | ext-comm | well-known-comm | large-comm]*

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth:asnum:val-in-mbps**
  - **ext:4300:ovstate**
  - **ext:value1:value2**
  - **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295

- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

## Platforms

All

## 20.52 router

### router

#### Syntax

**router** [*router-instance*]

**router service-name** *service-name*

#### Context

[\[Tree\]](#) (show router)

#### Full Context

show router

#### Description

Commands in this context display various types of information for the specified router instance.

#### Parameters

***router-instance***

specifies the router name, CPM router instance, or VPRN service ID.

#### Values



*router-instance* : *router name* | *vprn-svc-id*

*router-name* Base | management | *cpm-vr-name* |  
 vpls-management

*cpm-vr-name* [32 characters maximum]

*vprn-svc-id* [1..2147483647]

**Default** Base

**service-name**

specifies the service name, up to 64 characters.

**Platforms**

All

**Output**

The following outputs are examples of router information.

**Output Example: show router with PIM and S-PMSI**

```
*A:Dut-D# \show router 100 pim s-pmsi
=====
PIM RSVP Spmsi tunnels
=====
=====
P2mp ID   Tunnel ID   Ext Tunnel Adrs   SPMSI Index   Num VPN   State
          SGs
-----
100       61442      10.20.1.4         73919         8         UP
=====
PIM RSVP Spmsi Interfaces : 1
=====
*A:Dut-D# \show router 100 pim s-pmsi detail
=====
PIM RSVP Spmsi tunnels
=====
P2MP ID       : 100           Tunnel ID       : 61442
Ext Tunnel Adrs : 10.20.1.4     Spmsi IfIndex  : 73919
Number of VPN SGs : 8             Up Time        : 0d 00:01:04
VPN Group Address : 203.0.113.0
VPN Source Address : 10.114.1.2
Up Time       : 0d 00:01:04   Multistream-Id : 10
State        : TX Joined    Mdt Threshold  : N/A
Join Timer   : N/A          Holddown Timer : 0d 00:00:54
VPN Group Address : 203.0.113.1
VPN Source Address : 10.114.1.2
Up Time       : 0d 00:01:04   Multistream-Id : 10
State        : TX Joined    Mdt Threshold  : N/A
Join Timer   : N/A          Holddown Timer : 0d 00:00:55
VPN Group Address : 203.0.113.2
VPN Source Address : 10.114.1.2
Up Time       : 0d 00:01:04   Multistream-Id : 5
State        : TX Joined    Mdt Threshold  : N/A
Join Timer   : N/A          Holddown Timer : 0d 00:00:53
```

### Output Example: show router with allow-sr-over-sr-te configuration

The **allow-sr-over-sr-te** flag indicates that the SR-TE LSP is eligible as IGP shortcut in SR-MPLS.

```
*A:Dut-C>...mpls>lsp# show router tunnel-table protocol sr-te detail
=====
Tunnel Table (Router: Base)
=====
Destination : 10.20.1.6/32
NextHop : 1.0.13.1 (524291, ospf (0))
Tunnel Flags : is-over-tunnel entropy-label-capable allow-sr-over-sr-te
Age : 00h01m12s
CBF Classes : (Not Specified)
Owner : sr-te                               Encap : MPLS Tunnel
ID : 655366                                  Preference : 8
Tunnel Label : 524287                       Tunnel Metric : 200
Tunnel MTU : 1548                           Max Label Stack : 4
LSP Weight : 0
-----
Number of tunnel-table entries : 1
Number of tunnel-table entries with LFA : 0
=====
```

## router

### Syntax

```
router [router-instance]
router service-name service-name
```

### Context

[\[Tree\]](#) (tools>dump router)

### Full Context

tools dump router

### Description

This command dumps tools for the router instance.

### Parameters

#### ***router-instance***

Specifies the router name or service ID used to identify the router instance.

#### **Values**

router-name   vprn-svc-id	
router-name	Base   Management   <i>cpm-vr-name</i>   vpls-management Default: Base
vprn-svc-id	1 to 2147483647

cpm-vr-name 32 chars max

**service-name**

Specifies the service name used to identify the router instance. 64 characters maximum.

**Platforms**

All

router

**Syntax**

**router** [*router-instance*]

**router service-name** *service-name*

**Context**

[\[Tree\]](#) (clear router)

**Full Context**

clear router

**Description**

Clear router commands affect the router instance in which they are entered.

**Parameters**

**router-instance**

Specifies the router name or service ID used to identify the router instance.

**Values**

router-name | vprn-svc-id

router-name Base | Management | *cpm-vr-name* | *vpls-management*

Default: Base

vprn-svc-id 1 to 2147483647

cpm-vr-name 32 chars max

**service-name**

Specifies the service name used to identify the router instance. 64 characters maximum.

**Platforms**

All

## router

### Syntax

**router**

### Context

[\[Tree\]](#) (tools>perform router)

### Full Context

tools perform router

### Description

This command enables the tools for the router instance.

### Platforms

All

## router

### Syntax

**router** [*router-instance*]

**router service-name** *service name*

### Context

[\[Tree\]](#) (monitor router)

### Full Context

monitor router

### Description

Commands in this context configure criteria to monitor statistical information for a variety of routing protocols.

### Parameters

#### ***router-instance***

Specifies the router name or service ID.

#### **Values**

<i>router-name:</i>	Base, management, <i>cpm-vr-name</i> , vpls-management
<i>vpm-service-id:</i>	1 to 2147483647
<i>cpm-vr-name</i>	up to 32 characters

**Default** Base

***service-name***

Specifies the service name used to identify the router instance. The name can be up to 64 characters long.

**Platforms**

All

router

**Syntax**

router [**Base**] [**security-policy-id** *security-policy-id*]

**Context**

[\[Tree\]](#) (show>ipsec>security-policy router)

**Full Context**

show ipsec security-policy router

**Description**

This command displays IPsec security policy information for the router.

**Parameters**

***security-policy-id***

Specifies the security policy ID.

**Values** 1 to 32768

**Platforms**

VSR

## 20.53 router-advertisement

router-advertisement

**Syntax**

router-advertisement

**Context**

[\[Tree\]](#) (clear>router>autoconfigure router-advertisement)

## Full Context

clear router autoconfigure router-advertisement

## Description

Commands in this context clear router advertisement information.

## Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## router-advertisement

## Syntax

**router-advertisement all**

**router-advertisement interface** *interface-name*

## Context

[\[Tree\]](#) (clear>router router-advertisement)

## Full Context

clear router router-advertisement

## Description

This command clears all router advertisement counters.

## Parameters

**all**

Clears all router advertisement counters for all interfaces.

***interface-name***

Clears router advertisement counters for the specified interface.

## Platforms

All

## router-advertisement

## Syntax

**router-advertisement**

**router-advertisement routes**

## Context

[\[Tree\]](#) (show>router>autoconfigure router-advertisement)

### Full Context

```
show router autoconfigure router-advertisement
```

### Description

This command displays router advertisement information.

### Parameters

#### **routes**

Displays routes received from router advertisements.

### Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## 20.54 router-advertisement-policy

### router-advertisement-policy

### Syntax

```
router-advertisement-policy [name]
```

### Context

[\[Tree\]](#) (show>subscr-mgmt router-advertisement-policy)

### Full Context

```
show subscriber-mgmt router-advertisement-policy
```

### Description

This command displays IPv6 router advertisement policy information.

### Parameters

#### ***name***

Specifies the router advertisement policy name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 20.55 routes

### routes

#### Syntax

routes

#### Context

[\[Tree\]](#) (show>service>id>spb routes)

#### Full Context

show service id spb routes

#### Description

This command displays SPB route information.

#### Platforms

All

#### Output

The following output is an example of service SPB route information.

#### Output Example

```
*A:Dut-A# show service id 100001 spb routes
=====
MAC Route Table
=====
Fid  MAC                               Ver.  Metric
     NextHop If                      SysID
-----
Fwd Tree: unicast
-----
1    00:10:00:01:00:02                 10    10
     sap:1/2/2:1.1                   Dut-B
1    00:10:00:01:00:03                 10    10
     sap:1/2/3:1.1                   Dut-C
1    00:10:00:01:00:04                 10    20
     sap:1/2/2:1.1                   Dut-B
100  00:10:00:02:00:02                 10    10
     sap:1/2/2:1.1                   Dut-B
100  00:10:00:02:00:03                 10    10
     sap:1/2/3:1.1                   Dut-C
100  00:10:00:02:00:04                 10    20
     sap:1/2/3:1.1                   Dut-C
Fwd Tree: multicast
-----
1    00:10:00:01:00:02                 10    10
     sap:1/2/2:1.1                   Dut-B
```



```

1    00:10:00:01:00:03          10    10
    sap:1/2/3:1.1             Dut-C
1    00:10:00:01:00:04          10    20
    sap:1/2/2:1.1             Dut-B
100  00:10:00:02:00:02          10    10
    sap:1/2/2:1.1             Dut-B
100  00:10:00:02:00:03          10    10
    sap:1/2/3:1.1             Dut-C
100  00:10:00:02:00:04          10    20
    sap:1/2/3:1.1             Dut-C
-----
No. of MAC Routes: 12
=====

ISID Route Table
=====
Fid  ISID                               SysID  Ver.
   NextHop If
-----
1    10001                               Dut-B  10
    sap:1/2/2:1.1                       Dut-C
    sap:1/2/3:1.1
100  10002                               Dut-B  10
    sap:1/2/2:1.1                       Dut-B
    sap:1/2/3:1.1                       Dut-C
-----
No. of ISID Routes: 2
=====
A:Dut-A# show service id spb fate-sharing
=====
User service fate-shared sap/sdp-bind information
=====
Control  Control Sap/          FID    User    User Sap/
SvcId    SdpBind                User   SvcId   SdpBind
-----
500      1/1/20:500            502    502     1/1/20:500
=====
    
```

## routes

### Syntax

**routes** [*ip-prefix*] [**detail** | **longer** | **hunt** [**brief**]] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**hunt**]

**routes brief**

**routes** [*ip-prefix*] **bgp-ls** [**ipv4-prefix** | **link** | **node**] [**hunt**]

**routes** [*ip-prefix*] **evpn auto-disc** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**esi** *esi*] [**next-hop** *ip-address*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **evpn eth-seg** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**esi** *esi*] [**next-hop** *ip-address*] [**originator-ip** *ip-address*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **evpn incl-mcast** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**next-hop** *ip-address*] [**originator-ip** *ip-address*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **evpn ip-prefix** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**next-hop** *ip-address*] [**prefix** *ipv4-prefix*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **evpn ipv6-prefix** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**next-hop** *ip-address*] [**prefix** *ipv6-prefix*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **evpn mac** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**mac-address** *mac-address*] [**next-hop** *ip-address*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **evpn mcast-join-synch** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**next-hop** *ip-address*] [**originator-ip** *ip-address*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **evpn mcast-leave-synch** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**next-hop** *ip-address*] [**originator-ip** *ip-address*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **smet** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**next-hop** *ip-address*] [**originator-ip** *ip-address*] [**rd** *rd*] [**tag** *tag*] [**detail** | **hunt**]

**routes** [*ip-prefix*] **flow-ipv4** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**hunt**]

**routes** [*ip-prefix*] **flow-ipv6** [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**hunt**]

**routes** [*ip-prefix*] **ipv4** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**all**] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**leakable**] [**leaked**] [**origin-val** *origin-val*]

**routes** [*ip-prefix*] **ipv6** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**all**] [**as-path-regex** *reg-exp*] [**all**] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**leakable**] [**leaked**] [**origin-val** *origin-val*]

**routes** [*ip-prefix*] **l2-vpn** [**as-path-regex** *reg-exp*] [**brief**] [**community** *comm-id*] [**hunt**] [**offset** *vpls-base-offset*] [**rd** *rd*] [**siteid** *site-id*] [**veid** *veid*]

**routes** [*ip-prefix*] **l2-vpn l2vpn-type** [**as-path-regex** *reg-exp*] [**brief**] [**community** *comm-id*] [**offset** *vpls-base-offset*] [**rd** *rd*] [**siteid** *site-id*] [**veid** *veid*]

**routes** [*ip-prefix*] **label-ipv4** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**leakable**] [**leaked**] [**origin-val** *origin-val*]

**routes** [*ip-prefix*] **label-ipv6** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**leakable**] [**leaked**] [**origin-val** *origin-val*]

**routes** [*ip-prefix*] **mcast-ipv4** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**all**] [**as-path-regex** *reg-exp*] [**community** *comm-id*]

**routes** [*ip-prefix*] **mcast-ipv6** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**all**] [**as-path-regex** *reg-exp*] [**community** *comm-id*]

**routes** [*ip-prefix*] **mcast-vpn-ipv4** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**all**] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*]

**routes** [*ip-prefix*] **mcast-vpn-ipv6** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**all**] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*]

**routes** [*ip-prefix*] **mdt-safi** [**brief** | **detail** | **longer** | **hunt** [**brief**]] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**grp-address** *mcast-grp-address*] [**rd** *rd*] [**source-ip** *ip-address*]

**routes** [*ip-prefix*] **ms-pw** [**brief**] [**hunt**] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**aii-type2** *aii-type2*] [**rd** *rd*]

**routes** [*ip-prefix*] **mvpn-ipv4** [**brief** | **detail** | **longer** | **hunt**] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**group-ip** *ip-address*] [**originator-ip** *ip-address*] [**rd** *rd*] [**source-as** *as-number*] [**source-ip** *ip-address*] [**type** *mvn-type*]

**routes** [*ip-prefix*] **mvpn-ipv6** [**brief** | **detail** | **longer** | **hunt**] [**as-path-regex** *reg-exp*] [**community** *comm-id*] [**group-ip** *ip-address*] [**originator-ip** *ip-address*] [**rd** *rd*] [**source-as** *as-number*] [**source-ip** *ip-address*] [**type** *mvn-type*]

```
routes [ip-prefix] route-target [brief] [ as-path-regex reg-exp] [community comm-id] [source-as as-number]  
routes [ip-prefix] route-target [rtc-prefix rtc-prefix] [detail | longer | hunt [ brief]] [as-path-regex reg-exp]  
[community comm-id]  
routes [ip-prefix] sr-policy-ipv4 [hunt] [rd rd] [color number] [endpoint ipv4-address]  
routes [ip-prefix] sr-policy-ipv6 [hunt] [rd rd] [color number] [endpoint ipv6-address]  
routes [ip-prefix] vpn-ipv4 [brief | detail | longer | hunt [brief]] [as-path-regex reg-exp] [community  
comm-id] [rd rd]  
routes [ip-prefix] vpn-ipv6 [brief | detail | longer | hunt [brief]] [as-path-regex reg-exp] [community  
comm-id] [rd rd]
```

## Context

[\[Tree\]](#) (show>router>bgp routes)

## Full Context

```
show router bgp routes
```

## Description

This command displays routes in the BGP Routing Information Base (RIB). When this command is issued without any command options, the output displays all learned BGP routes belonging to the IPv4 address family. When this command is issued with other parameters, the output can display a narrower or wider set of routes, including routes belonging to other address families.

## Parameters

### **bgp-ls**

Displays BGP-LS routes.

### **bgp-ls ipv4-prefix**

Displays BGP-LS IPv4-prefix NLRI routes.

### **bgp-ls link**

Displays BGP-LS link NLRI routes.

### **bgp-ls node**

Displays BGP-LS node NLRI routes.

### **evpn auto-disc**

Displays EVPN autodiscovery routes.

### **evpn eth-seg**

Displays EVPN Ethernet Segment (ES) routes.

### **evpn incl-mcast**

Displays EVPN IMET routes.

### **evpn ip-prefix**

Displays EVPN IP prefix routes (type 5).

### **evpn ipv6-prefix**

Displays EVPN IPv6 prefix routes (type 5).

**evpn mac**

Displays EVPN MAC routes (type 2).

**evpn mcast-join-synch**

Displays EVPN multicast join sync routes.

**evpn mcast-join-leave**

Displays EVPN multicast join leave routes.

**evpn smet**

Displays EVPN SMET routes.

**flow-ipv4**

Displays IPv4 flow-spec routes.

**flow-ipv6**

Displays IPv6 flow-spec routes.

**ipv4**

Displays unlabeled unicast IPv4 routes.

**ipv6**

Displays unlabeled unicast IPv6 routes.

**I2-vpn**

Displays BGP-VPLS, BGP-VPWS, BGP multihoming and BGP-AD routes (or some subset).

**label-ipv4**

Displays labeled unicast IPv4 routes (AFI1, SAFI4).

**label-ipv6**

Displays labeled unicast IPv6 routes (AFI2, SAFI4).

**mcast-ipv4**

Displays multicast IPv4 routes (AFI1, SAFI2).

**mcast-ipv6**

Displays multicast IPv6 routes (AFI2, SAFI2).

**mcast-vpn-ipv4**

Displays multicast VPN IPv4 routes.

**mcast-vpn-ipv6**

Displays multicast VPN IPv6 routes.

**mdt-safi**

Displays MVPN MDT SAFI routes.

**ms-pw**

Displays multisegment pseudowire routes.

**mvpn-ipv4**

Displays MVPN IPv4 routes.

**mvpn-ipv6**

Displays MVPN IPv6 routes.

**route-target**

Displays RT constraint routes.

**sr-policy-ipv4**

Displays BGP segment routing policy routes (IPv4 endpoint).

**sr-policy-ipv6**

Displays BGP segment routing policy routes (IPv6 endpoint).

**vpn-ipv4**

Displays unicast IPv4 VPN routes (AFI1, SAFI128).

**vpn-ipv6**

Displays unicast IPv6 VPN routes (AFI2, SAFI128).

**brief**

Displays summary information about the BGP routes.

**detail**

Displays detailed information about the BGP routes, including information about the original path attribute values.

**hunt**

Displays detailed information about the BGP routes, including information about the advertised routes (RIB-OUT).

**longer**

When used within a command that also provides a specific IP prefix value, this filters the output to include all routes that match the prefix with the same or a longer prefix length.

**as-path-regex**

Filters the BGP routes to include only those routes with an AS path matching the specified regular expression.

**community**

Filters the BGP routes to include only those routes with a community value matching the specified value.

**all**

Includes active routes of other (non-BGP) protocols that BGP has imported into its RIB.

**leakable**

Filters the BGP routes to include only those routes that have been marked as leakable to other BGP instances (by means of a BGP import policy).

**leaked**

Filters the BGP routes to include only those routes that have been leaked from other BGP instances (by means of a leak-import policy).

**original-val**

Filters the BGP routes to include only those routes that have a specific RPKI route origin validation state (Not-Found, Valid, Invalid).

**esi**

Filters the BGP EVPN routes to include only those routes with a specific Ethernet Segment identifier value.

**next-hop**

Filters the BGP EVPN routes to include only those routes with a specific BGP next-hop address.

**rd**

Filters the BGP routes to include only those routes with a specific route distinguisher value.

**tag**

Filters the BGP EVPN routes to include only those routes with a specific administrative tag value.

**originator-ip**

Filters the BGP EVPN or MVPN routes to include only those routes with a specific originator IP address (in the NLRI).

**prefix**

Filters the BGP type 5 EVPN routes to include only those routes with a specific IPv4 or IPv6 prefix.

**mac-address**

Filters the BGP type 2 EVPN routes to include only those routes that have a specific MAC address.

**grp-address**

Filters the MDT-SAFI routes to include only those routes matching a specific multicast group address.

**source-as**

Filters the MVPN or RT-constraint routes to include only those routes matching a specific source AS number (in the NLRI).

**source-ip**

Filters the multicast routes to include only those routes matching a specific source address.

**group-ip**

Filters the MVPN routes to include only those routes matching a specific group address.

**type**

Filters the MVPN routes based on type (intra-ad, inter-ad, spmsi-ad, leaf-ad, source-ad, shared-join, source-join).

**aii-type2**

Filters the MS-PW routes based on All type 2 value.

**offset**

Filters BGP-VPLS routes based on offset value.

**siteid**

Filters BGP multihoming routes based on the site ID value.

**veid**

Filters BGP-VPLS routes based on VEID value.

### **rtc-prefix**

Filters the RT-constraint routes to include only those routes matching a specific NLRI string (formatted as *source-as:route-target/prefix-length*).

### **color**

Filters the SR policy routes to include only those routes matching a specific color value.

### **endpoint**

Filters the SR policy routes to include only those routes matching a specific endpoint address.

### **mvpn-type**

Specifies the MVPN type.

**Values** intra-ad, inter-ad, spmsi-ad, leaf-ad, source-ad, shared-join, and source-join.

### **ip-prefix**

Specifies an IP prefix to match. For some address families this parameter has no meaning and should be omitted.

**Values** ip-address: a.b.c.d  
ipv4-prefix: a.b.c.d  
ipv4-prefix-length: [0 to 32]  
ipv6-prefix [/pref\* ipv6-prefix]:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

prefix-length: [0 to 128]

### **reg-exp**

An AS path regular expression to match routes based on their AS path attribute *reg-exp*, up to 80 characters.

### **comm-id**

Specifies a community value, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm*]

where

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - {*target* | *origin*}:*ip-address:comm-val*
  - {*target* | *origin*}:*asnum:ext-comm-val*
  - {*target* | *origin*}:*ext-asnum:comm-val*

- **bandwidth:asnum:val-in-mbps**
- **ext:4300:ovstate**
- **ext:value1:value2**
- **flowspec-set:ext-asnum:group-id**

where:

- *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**

### **rd**

Specifies a route distinguisher value.

**Values** ip-addr:comm-val  
2byte-asnumber:ext-comm-val  
4byte-asnumber:comm-val}

### **veid**

Specifies a two-byte identifier that represents the local bridging instance in a VPLS and is advertised through the BGP NLRI. This value must be lower than or equal to the max-ve-id.

**Values** 0 to 4294967295

### **vpls-base-offset**

Specifies a two-byte identifier advertised through the NLRI that is used to indicate which VE-ID should use the advertised NLRI at the receiving PE according to the following rule: if the offset <= local VE-ID <= offset+VBS-1 (VBS = virtual block size = 8 in our implementation), then the NLRI is processed. Otherwise, it is ignored. The NLRI with this offset is generated as soon as the first VE-ID value between (offset, offset + VBS-1) is advertised in the network.



**Values** 0 to 4294967295

**site-id**

Specifies a two-byte identifier usually employed for the BGP multihoming solution. It identifies the BGP multihoming site associated with one or a set of objects (SAPs, pseudowires or combination). The site-id must be identical between the two PEs carrying the connection to the access device multihomed to the PEs.

**Values** 0 to 4294967295

**l2vpn-type**

Specifies a 12-byte Virtual Switch Instance identifier (VSI-ID) type.

**Values** bgp-ad, bgp-vpls, bgp-vpws, and multi-homing

**rtc-prefix**

*source-as:{ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val}/prefix-length*

**Values** *ip-addr:* a.b.c.d  
*comm-val:* 0 to 65535  
*2byte-asnumber:* 0 to 65535  
*ext-comm-val:* 0 to 4294967295  
*4byte-asnumber:* 0 to 4294967295  
*prefix-length:* 0 to 96

**origin-val**

Filters the BGP routes displayed by the command to those routes with a particular RPKI route origin validation state.

**Values** valid — Displays valid validation state information.  
invalid — Displays invalid validation state information.  
notfound — Displays state information for not found origin values.

**Platforms**

All

**Output**

The following outputs are examples of BGP route information, and [Table 435: BGP Routes Output Fields](#) describes the output fields:

- [Output example: BGP SR IPv6 policy routes](#)
- [Output example: BGP SR IPv6 policy routes with advertised routes \(RIB-OUT\)](#)
- [Output example: BGP routes that match a specific address](#)
- [Output example: BGP-VPLS, BGP-VPWS, BGP multihoming, and BGP-AD routes \(detailed\)](#)
- [Output example: BGP-VPLS, BGP-VPWS, BGP multihoming, and BGP-AD routes \(with advertised routes\) that match a specific address and route distinguisher \(RD\) value \(detailed\)](#)

- Output example: unicast IPv4 VPN routes (with advertised routes) that match a specific RD value and address (detailed)
- Output example: unicast IPv4 VPN routes (with advertised routes) that match a specific address (detailed)
- Output example: unicast IPv6 VPN routes (with advertised routes) that match a specific address (detailed)
- Output example: unicast IPv6 VPN routes (with advertised routes) that match a specific RD value and address (detailed)
- Output example: BGP routes (with advertised routes) that match a specific address (detailed)
- Output example: unlabeled unicast IPv4 routes
- Output example: BGP routes that match a specific address (detailed)
- Output example: MVPN IPv4 routes
- Output example: MVPN IPv4 route information summary
- Output example: source-join type MVPN IPv4 routes that match a specific source AS number, source IP address, and group IP address (detailed)
- Output example: spmsi-ad type MVPN IPv4 routes (detailed)
- Output example: spmsi-ad type MVPN IPv6 routes (detailed)
- Output example: multi-segment pseudowire routes
- Output example: IPv4 routes (detailed)
- Output example: BGP-LS link NLRI routes with advertised routes (detailed)
- Output example: learned BGP routes that belong to the IPv4 address family
- Output example: EVPN MAC routes (with advertised routes) that match a specific address (detailed)
- Output example: EVPN IP prefix routes that match a specific prefix (detailed)
- Output example: EVPN IP prefix routes (with advertised routes) that match a specific prefix (detailed)
- Output example: BGP-LS routes
- Output example: EVPN multicast join sync routes with advertised routes (detailed)
- Output example: IPv4 VPN routes (with advertised routes) with attached attribute set (ATTR\_SET) (detailed)
- Output example: IPv4 VPN routes with attached attribute set (ATTR\_SET) (detailed)

**Output example: BGP SR IPv6 policy routes**

```
A:node-2# show router bgp routes sr-policy-ipv6
=====
BGP Router ID:10.20.1.1      AS:2      Local AS:2
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
                l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP SR-POLICY-v6 Routes
=====
Flag  RD/Color/End Point      LocalPref  MED
      Nexthop (Router)      Path-Id    IGP Cost
      As-Path                Label
```

```

-----
u*>i 2/20/3ffe::a14:102          100      None
      ::a14:102                  None      N/A
      No As-Path
u*>i 3/30/::a14:102             100      None
      ::a14:102                  None      N/A
      No As-Path
-----
Routes : 2
=====
    
```

**Output example: BGP SR IPv6 policy routes with advertised routes (RIB-OUT)**

```

A:node-2# show router bgp routes sr-policy-ipv6 hunt
=====
BGP Router ID:10.20.1.1      AS:2      Local AS:2
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP SR-POLICY-v6 Routes
=====
RIB In Entries
-----
RD/Color/End Pt: 2/20/3ffe::a14:102
BSID/Pref/TunnType: 100001/10/sr-policy
Nexthop       : ::a14:102
From          : 10.20.1.3
Res. Nexthop  : ::
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : color:01:10 target:10.20.1.1:0
Cluster       : 10.20.1.3
Originator Id : 10.20.1.2      Peer Router Id : 10.20.1.3
Flags         : Used Valid Best IGP
Route Source  : Internal
AS-Path       : No As-Path
Route Tag     : 0
Neighbor-AS   : n/a
DB Orig Val   : N/A
Source Class  : 0
Add Paths Send : Default
Last Modified : 00h22m45s

RD/Color/End Pt: 3/30/::
BSID/Pref/TunnType: 100002/10/sr-policy
Nexthop       : ::a14:102
From          : 10.20.1.3
Res. Nexthop  : ::
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : color:01:10 target:10.20.1.1:0
Cluster       : 10.20.1.3
Originator Id : 10.20.1.2      Peer Router Id : 10.20.1.3
Interface Name : NotAvailable
Aggregator     : None
MED            : None
IGP Cost       : n/a
Final Orig Val : N/A
Dest Class     : 0
    
```

```

Flags      : Used Valid Best IGP
Route Source : Internal
AS-Path    : No As-Path
Route Tag   : 0
Neighbor-AS : n/a
DB Orig Val : N/A           Final Orig Val : N/A
Source Class : 0           Dest Class : 0
Add Paths Send : Default
Last Modified : 00h22m42s
    
```

-----  
 RIB Out Entries  
 -----

-----  
 Routes : 2  
 =====

**Output example: BGP routes that match a specific address**

```

A:node-2# show router bgp routes 10.10.10.5
=====
BGP Router ID:10.20.1.3      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP IPv4 Routes
=====
Flag Network                               LocalPref MED
      Nexthop (Router)                     Path-Id   Label
      As-Path
-----
u*>? 10.10.10.0/24                          None     None
      10.20.1.4                              None     -
      200 300
-----
Routes : 1
=====
    
```

**Output example: BGP-VPLS, BGP-VPWS, BGP multihoming, and BGP-AD routes (detailed)**

```

A:node-2# show router bgp routes l2-vpn detail
=====
BGP Router ID:10.20.1.3      AS:1000     Local AS:1000
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP L2VPN Routes
=====
Route Type      : AutoDiscovery
Route Dist.     : 10.20.1.1:1
Prefix          : 10.20.1.1
Nexthop         : 10.20.1.1
From            : 10.20.1.1
Res. Nexthop    : n/a
Local Pref.     : 100
Aggregator AS   : None
Atomic Aggr.    : Not Atomic
AIGP Metric     : Not Atomic
Interface Name  : NotAvailable
Aggregator      : None
MED             : 0
    
```

```

Community      : target:4455:4455 target:1.20.30.40:6543
                  l2-vpn/vrf-imp:100.1.200.1:65535
Cluster       : No Cluster Members
Originator Id : None           Peer Router Id : 10.20.1.1
Flags         : Used Valid Best IGP
Route Source  : Internal
AS-Path       : No As-Path
-----
PMSI Tunnel Attribute :
Tunnel-type   : RSVP-TE P2MP LSP      Flags           : Leaf not required
MPLS Label    : 0
P2MP-ID       : 1001                 Tunnel-ID        : 61440
Extended-Tunne*: 10.20.1.1
    
```

**Output example: BGP-VPLS, BGP-VPWS, BGP multihoming, and BGP-AD routes (with advertised routes) that match a specific address and route distinguisher (RD) value (detailed)**

```

A:node-2# show router bgp routes l2-vpn 10.20.1.1 rd 10.20.1.1:1 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP L2VPN-AD Routes
=====
Route Type      : AutoDiscovery
Route Dist.     : 10.20.1.1:1
Prefix          : 10.20.1.1
Nextthop        : 10.20.1.1
From            : 10.20.1.2
Res. Nextthop   : n/a
Local Pref.     : 100
Aggregator AS   : None           Interface Name : NotAvailable
Aggregator      : None
Atomic Aggr.    : Not Atomic     MED           : 0
AIGP Metric     : None
Connector       : None
Community       : target:1.20.30.40:6543
                  l2-vpn/vrf-imp:100.1.200.1:65535
Cluster         : 1.1.1.1
Originator Id   : 10.20.1.1      Peer Router Id : 10.20.1.2
Flags           : Used Valid Best IGP
Route Source    : Internal
AS-Path         : No As-Path
-----
RIB Out Entries
-----
Routes : 1
=====
    
```

**Output example: unicast IPv4 VPN routes (with advertised routes) that match a specific RD value and address (detailed)**

```

A:node-2# show router bgp routes vpn-ipv4 6.6.6.6/32 rd 10.20.1.4:1 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
    
```

```

=====
BGP VPN-IPv4 Routes
=====
-----
RIB In Entries
-----
Network      : 6.6.6.6/32
Nextthop    : 10.20.1.4
Route Dist.  : 10.20.1.4:1          VPN Label      : 131070
Path Id      : None
From         : 10.20.1.4
Res. Nextthop : n/a
Local Pref.  : 100                  Interface Name : int_to_D
Aggregator AS : None                Aggregator     : None
Atomic Aggr. : Not Atomic           MED            : None
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None                Peer Router Id : 10.20.1.4
Fwd Class    : None                Priority       : None
Flags        : Used Valid Best Incomplete
Route Source : Internal
AS-Path      : 100
VPRN Imported : 1
-----
RIB Out Entries
-----
-----
Routes : 1
=====
    
```

**Output example: unicast IPv4 VPN routes (with advertised routes) that match a specific address (detailed)**

```

A:node-2# show router bgp routes vpn-ipv4 6.6.6.6/32 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv4 Routes
=====
-----
RIB In Entries
-----
Network      : 6.6.6.6/32
Nextthop    : 10.20.1.4
Route Dist.  : 10.20.1.4:1          VPN Label      : 131070
Path Id      : None
From         : 10.20.1.4
Res. Nextthop : n/a
Local Pref.  : 100                  Interface Name : int_to_D
Aggregator AS : None                Aggregator     : None
Atomic Aggr. : Not Atomic           MED            : None
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None                Peer Router Id : 10.20.1.4
Fwd Class    : None                Priority       : None
    
```

```

Flags      : Used Valid Best Incomplete
Route Source : Internal
AS-Path    : 106
VPRN Imported : 1
-----
RIB Out Entries
-----
Routes : 1
=====
    
```

**Output example: unicast IPv6 VPN routes (with advertised routes) that match a specific address (detailed)**

```

A:node-2# show router bgp routes 3FFE::606:609/128 vpn-ipv6 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv6 Routes
=====
RIB In Entries
-----
Network      : 3FFE::606:609/128
Nexthop      : ::FFFF:A14:104
Route Dist.  : 10.20.1.4:1      VPN Label    : 131070
Path Id      : None
From         : 10.20.1.4
Res. Nexthop : n/a
Local Pref.  : 100
Aggregator AS : None          Interface Name : int_to_D
Atomic Aggr. : Not Atomic   Aggregator    : None
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None          Peer Router Id : 10.20.1.4
Fwd Class    : None          Priority      : None
Flags        : Used Valid Best Incomplete
Route Source : Internal
AS-Path      : 106
VPRN Imported : 1
-----
RIB Out Entries
-----
Routes : 1
=====
    
```

**Output example: unicast IPv6 VPN routes (with advertised routes) that match a specific RD value and address (detailed)**

```

A:node-2# show router bgp routes vpn-ipv6 3FFE::606:607/128 rd 10.20.1.4:1 hunt
=====
BGP Router ID:10.20.1.3      AS:None      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
    
```

```

Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP VPN-IPv6 Routes
=====
-----
RIB In Entries
-----
Network      : 3FFE::606:607/128
Nexthop      : ::FFFF:A14:104
Route Dist.  : 10.20.1.4:1          VPN Label    : 131070
Path Id      : None
From         : 10.20.1.4
Res. Nexthop : n/a
Local Pref.  : 100                 Interface Name : int_to_D
Aggregator AS : None              Aggregator    : None
Atomic Aggr. : Not Atomic         MED           : None
AIGP Metric  : None
Connector    : None
Community    : target:100:100
Cluster      : No Cluster Members
Originator Id : None                Peer Router Id : 10.20.1.4
Fwd Class    : None                Priority       : None
Flags        : Used Valid Best Incomplete
Route Source : Internal
AS-Path      : 106
VPRN Imported : 1
-----
RIB Out Entries
-----
-----
Routes : 1
=====
    
```

**Output example: BGP routes (with advertised routes) that match a specific address (detailed)**

```

A:node-2# show router bgp routes 1.1.4.0/22 hunt
=====
BGP Router ID:10.20.1.3      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
              l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes : i - IGP, e - EGP, ? - incomplete
=====
BGP IPv4 Routes
=====
-----
RIB In Entries
-----
Network      : 1.1.4.0/22
Nexthop      : 1.1.3.1
Path Id      : None
From         : 1.1.3.1
Res. Protocol : LOCAL              Res. Metric   : 0
Res. Nexthop : 1.1.3.1
Local Pref.  : None                 Interface Name : to_Dut-A
Aggregator AS : None              Aggregator    : None
Atomic Aggr. : Not Atomic         MED           : None
AIGP Metric  : None                 IGP Cost      : 0
Connector    : None
Community    : No Community Members
Cluster      : No Cluster Members
    
```



```

Originator Id : None           Peer Router Id : 10.20.1.1
Fwd Class     : None           Priority        : None
Flags         : Used Valid Best Incomplete In-RTM
Route Source  : External
AS-Path       : 65533
Route Tag     : 0
Neighbor-AS   : 65533
DB Orig Val   : Invalid       Final Orig Val : Invalid
Source Class  : 0             Dest Class     : 0
Add Paths Send : Default
RIB Priority   : Normal
Last Modified : 00h03m17s
    
```

**Output example: unlabeled unicast IPv4 routes**

```

A:node-2# show router bgp routes ipv4
=====
BGP Router ID : 10.10.10.103   AS : 200   Local AS : 200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP Routes
=====
Flag Network                Nexthop      LocalPref  MED
   VPN Label                As-Path
-----
No Matching Entries Found
=====
    
```

**Output example: BGP routes that match a specific address (detailed)**

```

A:node-2# show router bgp routes 1.1.4.0/22 detail
=====
BGP Router ID:10.20.1.3      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP IPv4 Routes
=====
Original Attributes

Network       : 1.1.4.0/22
Nexthop       : 1.1.3.1
Path Id       : None
From          : 1.1.3.1
Res. Protocol : LOCAL           Res. Metric   : 0
Res. Nexthop  : 1.1.3.1
Local Pref.   : n/a
Aggregator AS : None           Interface Name : to_Dut-A
Atomic Aggr.  : Not Atomic     Aggregator    : None
AIGP Metric   : None           MED           : None
Connector     : None           IGP Cost      : 0
Community     : No Community Members
Cluster       : No Cluster Members
Originator Id : None           Peer Router Id : 10.20.1.1
Fwd Class     : None           Priority        : None
Flags         : Used Valid Best Incomplete In-RTM
    
```

```

Route Source      : External
AS-Path          : 65533
Route Tag        : 0
Neighbor-AS      : 65533
DB Orig Val      : Invalid          Final Orig Val : N/A
Source Class     : 0                Dest Class      : 0
Add Paths Send   : Default
RIB Priority      : Normal
Last Modified    : 00h03m35s

Modified Attributes

Network          : 1.1.4.0/22
Nexthop          : 1.1.3.1
Path Id          : None
From             : 1.1.3.1
Res. Protocol    : LOCAL            Res. Metric     : 0
Res. Nexthop     : 1.1.3.1
Local Pref       : None             Interface Name  : to_Dut-A
Aggregator AS   : None             Aggregator     : None
Atomic Aggr.    : Not Atomic        MED            : None
AIGP Metric     : None             IGP Cost       : 0
Connector       : None
Community        : No Community Members
Cluster          : No Cluster Members
Originator Id   : None             Peer Router Id  : 10.20.1.1
Fwd Class        : None             Priority        : None
Flags           : Used Valid Best Incomplete In-RTM
Route Source     : External
AS-Path          : 65533
Route Tag        : 0
Neighbor-AS      : 65533
DB Orig Val      : Invalid          Final Orig Val : Invalid
Source Class     : 0                Dest Class      : 0
Add Paths Send   : Default
RIB Priority      : Normal
Last Modified    : 00h03m41s
    
```

### Output example: MVPN IPv4 routes

```

A:node-2# show router bgp routes mvpn-ipv4
=====
BGP Router ID:10.20.1.3      AS:200      Local AS:200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP MVPN-IPv4 Routes
=====
Flag  RouteType      OriginatorIP      LocalPref  MED      VPNLabel
      RD            SourceAS
      Nexthop       SourceIP
      As-Path       GroupIP
-----
u*>i  Intra-Ad        10.20.1.4         100        0
      1:1            -                  -          -
      10.20.1.4     -                  -          -
      No As-Path    -                  -          -
u*>i  Source-Ad        -                  100        0
      1:1            -                  -          -
      10.20.1.4     130.100.1.2
      No As-Path    227.0.0.0
    
```

```

u*>i Source-Join          -          100          0
      1:1                  200          -
      10.20.1.4            150.100.1.2
      No As-Path           226.0.0.0
-----
Routes : 3
=====
  
```

**Output example: MVPN IPv4 route information summary**

```

A:node-2# show router bgp routes mvpn-ipv4 brief
=====
BGP Router ID:10.20.1.3      AS:200      Local AS:200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP MVPN-IPv4 Routes
=====
Flag RouteType      OriginatorIP      SourceIP
      RD              SourceAS           GroupIP
-----
u*>i Intra-Ad        10.20.1.4         -
      1:1              -                  -
u*>i Source-Ad       -                  130.100.1.2
      1:1              -                  227.0.0.0
u* >i Source-Join    -                  150.100.1.2
      1:1              200                226.0.0.0
-----
Routes : 3
=====
  
```

**Output example: source-join type MVPN IPv4 routes that match a specific source AS number, source IP address, and group IP address (detailed)**

```

A:node-2# show router bgp routes mvpn-ipv4 type source-join source-as 200 source-ip 150.100.1.2
group-ip 226.0.0.0 detail
=====
BGP Router ID:10.20.1.3      AS:200      Local AS:200
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best
=====
BGP MVPN-IPv4 Routes
=====
Route Type      : Source-Join
Route Dist.     : 1:1
Source AS       : 200
Source IP       : 150.100.1.2
Group IP        : 226.0.0.0
Nextthop        : 10.20.1.4
From            : 10.20.1.4
Res. Nextthop   : 0.0.0.0
Local Pref.     : 100
Aggregator AS   : None
Atomic Aggr.    : Not Atomic
Community       : target:10.20.1.3:2
Cluster         : No Cluster Members
Originator Id   : None
Flags           : Used Valid Best IGP
Peer Router Id  : 10.20.1.4
Interface Name  : NotAvailable
Aggregator      : None
MED             : 0
  
```

```
AS-Path      : No As-Path
-----
Routes : 1
=====
```

### Output example: spmsi-ad type MVPN IPv4 routes (detailed)

```
A:node-2# show router bgp routes mvpn-ipv4 type spmsi-ad detail
=====
BGP Router ID:10.20.1.3      AS:46000      Local AS:46000
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP MVPN-IPv4 Routes
=====
Original Attributes

Route Type      : Spmsi-Ad
Route Dist.     : 10.1.200.41:1
Originator IP   : 10.20.1.4
Source IP       : 10.1.101.2
Group IP        : 225.100.0.0

<snip>

Last Modified   : 00h18m52s
VPRN Imported   : 1
-----
PMSI Tunnel Attribute :
Tunnel-type      : None                Flags      : Leaf required
MPLS Label      : 0
-----
=====
```

### Output example: spmsi-ad type MVPN IPv6 routes (detailed)

```
A:node-2# show router bgp routes mvpn-ipv6 type spmsi-ad detail
=====
BGP Router ID:10.20.1.3      AS:46000      Local AS:46000
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP MVPN-IPv6 Routes
=====
Original Attributes

Route Type      : Spmsi-Ad
Route Dist.     : 10.1.200.41:1
Originator IP   : 10.20.1.4
Source IP       : 2001:10:1:101::2
Group IP        : ff0e:225:100::

<snip>
```

```
VPRN Imported : 1
-----
PMSI Tunnel Attribute :
Tunnel-type : None                Flags : Leaf required
MPLS Label : 0
-----
=====
```

**Output example: multi-segment pseudowire routes**

```
A:node-2# show router bgp routes ms-pw
=====
BGP Router ID:10.20.1.3      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP MSPW Routes
=====
Flag Network RD
Nexthop AII-Type2/Preflen
As-Path
-----
? 3:10.20.1.3 100:3
10.20.1.5 3:10.20.1.3:0/64
200 100
? 3:10.20.1.3 100:4
10.20.1.5 3:10.20.1.3:0/64
200 100
u*>? 6:10.20.1.6 100:6
10.20.1.5 6:10.20.1.6:0/64
200 300 400
-----
Routes : 3
=====
```

**Output example: IPv4 routes (detailed)**

```
A:node-2# show router bgp routes ipv4 detail
=====
BGP Router ID:1.1.1.1      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Original Attributes
Network : 11.1.1.1/32
Nexthop : 192.168.1.1
Path Id : None
From : 192.168.1.1
Res. Nexthop : 192.168.1.1
Local Pref. : n/a
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric : 100
Community : None
Cluster : No Cluster Members
Interface Name : net
Aggregator : None
MED : 5000
```

```

Originator Id : None           Peer Router Id : 2.2.2.2
Fwd Class    : None           Priority       : None
Flags        : Used Valid Best Incomplete
Route Source : External
AS-Path      : 200 400 500
  
```

Modified Attributes

```

Network      : 11.1.1.1/32
Nextthop    : 192.168.1.1
Path Id      : None
From        : 192.168.1.1
Res. Nextthop : 192.168.1.1
Local Pref.  : None           Interface Name : net
Aggregator AS : None           Aggregator    : None
Atomic Aggr. : Not Atomic     MED           : 5000
AIGP Metric  : 110
Community    : None
Cluster      : No Cluster Members
Originator Id : None           Peer Router Id : 2.2.2.2
Fwd Class    : None           Priority       : None
Flags        : Used Valid Best Incomplete
Route Source : External
AS-Path      : 200 400 500
  
```

-----  
 Routes : 1  
 =====

**Output example: BGP-LS link NLRI routes with advertised routes (detailed)**

```
A:node-2# show router bgp routes bgp-ls hunt link
```

```
=====
BGP Router ID:38.120.48.226   AS:65000           Local AS:65000
=====
```

Legend -

```

Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
  
```

=====
BGP-LS Link NLRIs
=====

-----
RIB In Entries
-----

Network:

```

Type           : LINK-NLRI
Protocol       : ISIS Level-2           Identifier      : 0xa
Local Node descriptor:
  Autonomous System : 0.0.253.232
  Link State Id     : 10
  IGP Router Id     : 0x38120048184
Remote Node descriptor:
  Autonomous System : 0.0.253.232
  Link State Id     : 10
  IGP Router Id     : 0x38120048223
Link descriptor:
  IPV4 Interface Addr: 10.0.14.184
  IPV4 Neighbor Addr : 10.0.14.223
Nextthop      : 38.120.48.199
From          : 38.120.48.199
Res. Nextthop : 0.0.0.0
Local Pref.   : 100           Interface Name : NotAvailable
  
```

```

Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric : None
Connector : None
Community : No Community Members
Cluster : No Cluster Members
Originator Id : None
Flags : Valid Best IGP
Route Source : Internal
AS-Path : No As-Path
Route Tag : 0
Neighbor-AS : N/A
DB Orig Val : N/A
Source Class : 0
Add Paths Send : Default
Last Modified : 02h27m50s
Aggregator : None
MED : None
Peer Router Id : 38.120.48.199
Final Orig Val : N/A
Dest Class : 0
  
```

```

-----
Link State Attribute TLVs :
Administrative group (color) : 0x0
Maximum link bandwidth : 100000 Kbps
Max. reservable link bandwidth : 100000 Kbps
Unreserved bandwidth0 : 100000 Kbps
Unreserved bandwidth1 : 100000 Kbps
Unreserved bandwidth2 : 100000 Kbps
Unreserved bandwidth3 : 100000 Kbps
Unreserved bandwidth4 : 100000 Kbps
Unreserved bandwidth5 : 100000 Kbps
Unreserved bandwidth6 : 100000 Kbps
Unreserved bandwidth7 : 100000 Kbps
TE Default Metric : 100
IGP Metric : 100
Adjacency Segment Identifier (Adj-SID) : flags 0x30 weight 0 sid 262136
-----
  
```

```

Network:
Type : LINK-NLRI
Protocol : ISIS Level-2
Identifier : 0xa
Local Node descriptor:
Autonomous System : 0.0.253.232
Link State Id : 10
IGP Router Id : 0x38120048184
Remote Node descriptor:
Autonomous System : 0.0.253.232
Link State Id : 10
IGP Router Id : 0x38120048223
Link descriptor:
IPV4 Interface Addr: 10.0.14.184
IPV4 Neighbor Addr : 10.0.14.223
Nexthop : 38.120.48.221
From : 38.120.48.221
Res. Nexthop : 0.0.0.0
Local Pref. : 100
Interface Name : NotAvailable
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric : None
Connector : None
Community : No Community Members
Cluster : No Cluster Members
Originator Id : None
Flags : Valid IGP
TieBreakReason : OriginatorID
Route Source : Internal
AS-Path : No As-Path
Route Tag : 0
Neighbor-AS : N/A
Aggregator : None
MED : None
Peer Router Id : 38.120.48.221
  
```

```

DB Orig Val   : N/A                Final Orig Val : N/A
Source Class  : 0                  Dest Class     : 0
Add Paths Send : Default
Last Modified  : 02h27m54s
-----
Link State Attribute TLVs :
Administrative group (color) : 0x0
Maximum link bandwidth : 100000 Kbps
Max. reservable link bandwidth : 100000 Kbps
Unreserved bandwidth0 : 100000 Kbps
Unreserved bandwidth1 : 100000 Kbps
Unreserved bandwidth2 : 100000 Kbps
Unreserved bandwidth3 : 100000 Kbps
Unreserved bandwidth4 : 100000 Kbps
Unreserved bandwidth5 : 100000 Kbps
Unreserved bandwidth6 : 100000 Kbps
Unreserved bandwidth7 : 100000 Kbps
TE Default Metric : 100
IGP Metric : 100
Adjacency Segment Identifier (Adj-SID) :      flags 0x30 weight 0 sid 262136
-----
  
```

**Output example: learned BGP routes that belong to the IPv4 address family**

```

A:node-2# show router bgp routes
=====
BGP Router ID:10.20.1.1      AS:1      Local AS:1
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP IPv4 Routes
=====
Flag  Network                LocalPref  MED
      Nexthop                Path-Id    Label
      As-Path
-----
u*>i  20.0.0.1/32                100        2010
      10.20.1.2                None       131057
      2
ub*i  20.0.0.1/32                100        2010
      10.20.1.3                None       131067
      2
-----
Routes : 2
=====
  
```

**Output example: EVPN MAC routes (with advertised routes) that match a specific address (detailed)**

```

A:node-2# show router bgp routes evpn mac mac-address 00:00:01:00:01:02 hunt
=====
BGP Router ID:10.20.1.1      AS:100    Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP EVPN Mac Routes
=====
-----
RIB In Entries
  
```



```

-----
Network      : N/A
Nexthop     : 10.20.1.2
From        : 10.20.1.2
Res. Nexthop : N/A
Local Pref. : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : target:100:1 bgp-tunnel-encap:VXLAN
              mac-mobility:Seq:0/Static
Cluster      : No Cluster Members
Originator Id : None
Peer Router Id : 10.20.1.2
Flags        : Used Valid Best IGP
Route Source : Internal
AS-Path      : 111
EVPN type    : MAC
ESI          : 0:0:0:0:0:0:0:0:0:0:0:0:0:0:0:0 Tag : 1
IP Address   : N/A
Route Dist.  : 10.20.1.2:1
Mac Address  : 00:00:01:00:01:02
MPLS Label1 : X
MPLS Label2 : Y
Route Tag    : Z
Neighbor-AS  : 111
DB Orig Val  : N/A
Final Orig Val : N/A
Source Class : 0
Dest Class   : 0
    
```

-----  
 RIB Out Entries  
 -----

-----  
 Routes : 1  
 =====

**Output example: EVPN IP prefix routes that match a specific prefix (detailed)**

```

A:node-2# show router bgp routes evpn ip-prefix prefix 3.0.1.6/32 detail
=====
BGP Router ID:10.20.1.1      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
Origin codes  : i - IGP, e - EGP, ? - incomplete, > - best, b - backup
=====
BGP EVPN IP-Prefix Routes
=====
-----
Original Attributes

Network      : N/A
Nexthop     : 10.20.1.2
From        : 10.20.1.2
Res. Nexthop : N/A
Local Pref. : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector    : None
Community    : target:100:1 mac-nh:00:00:01:00:01:02
              bgp-tunnel-encap:VXLAN
Cluster      : No Cluster Members
Originator Id : None
Peer Router Id : 10.20.1.2
    
```

```

Flags          : Used Valid Best IGP
Route Source   : Internal
AS-Path        : No As-Path
EVPN type      : IP-PREFIX
ESI           : N/A
Gateway Address: 00:00:01:00:01:02
Prefix         : 3.0.1.6/32
MPLS Label    : X
Route Tag      : Z
Neighbor-AS   : N/A
DB Orig Val   : N/A
Source Class   : 0
Tag            : 1
Route Dist.   : 10.20.1.2:1
Final Orig Val : N/A
Dest Class    : 0

Modified Attributes

Network        : N/A
Nexthop       : 10.20.1.2
From          : 10.20.1.2
Res. Nexthop  : N/A
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : target:100:1 mac-nh:00:00:01:00:01:02
               bgp-tunnel-encap:VXLAN
Cluster       : No Cluster Members
Originator Id : None
Flags         : Used Valid Best IGP
Route Source  : Internal
AS-Path       : 111
EVPN type     : IP-PREFIX
ESI          : N/A
Gateway Address: 00:00:01:00:01:02
Prefix       : 3.0.1.6/32
MPLS Label   : X
Route Tag    : W
Neighbor-AS  : 111
DB Orig Val  : N/A
Source Class : 0
Tag          : 1
Route Dist.  : 10.20.1.2:1
Final Orig Val : N/A
Dest Class   : 0

-----
Routes : 1
=====
    
```

**Output example: EVPN IP prefix routes (with advertised routes) that match a specific prefix (detailed)**

```

A:node-2# show router bgp routes evpn ip-prefix prefix 10.0.0.0/24 hunt
=====
BGP Router ID:192.0.2.4      AS:64500      Local AS:64500
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
               l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete

=====
BGP EVPN IP-Prefix Routes
=====
-----
RIB In Entries
-----
    
```

```

Network      : n/a
Nexthop     : 192.0.2.2
Path Id     : None
From       : 192.0.2.2
Res. Nexthop : 192.168.24.1
Local Pref. : 100
Aggregator AS : None
Atomic Aggr. : Not Atomic
AIGP Metric  : None
Connector   : None
Community   : target:64500:2002 mac-nh:00:00:00:00:00:02
              bgp-tunnel-encap:MPLS
Cluster     : No Cluster Members
Originator Id : None
Peer Router Id : 192.0.2.2
Flags       : Used Valid Best IGP
Route Source : Internal
AS-Path     : No As-Path
D-Path     : [65000:1:128(ipvpn), 65000:2:70(evpn), 65000:3:1(ip), 65000:4:0(local)]
EVPN type   : IP-PREFIX
ESI        : n/a
Tag        : 0
Gateway Address: 00:00:00:00:00:02
Prefix     : 10.0.0.0/24
Route Dist. : 192.0.2.2:2002
MPLS Label  : LABEL 524266
Route Tag   : 0
Neighbor-AS : n/a
DB Orig Val : N/A
Source Class : 0
Final Orig Val : N/A
Dest Class   : 0
Add Paths Send : Default
Last Modified : 23h15m42s
=====
    
```

### Output example: BGP-LS routes

```

A:node-2# show router bgp routes bgp-ls
=====
BGP-LS NLRIs
=====
-----
Type: Node
Protocol: ISIS | OSPFLevel: L1 | L2 | NA
Identifier:
Network : 215.0.0.0/24
Nexthop : 202.50.0.2
Path Id : None
From : 10.255.105.141
AS Path: 65534
Local Node
  Name:
  Autonomous System:
  Area ID:
  Rtr ID:
  Flags:
Type: Link
Protocol: ISIS | OSPFLevel: L1 | L2 | NA
Identifier:
Network : 215.0.0.0/24
Nexthop : 202.50.0.2
Path Id : None
From : 10.255.105.141
AS Path: 65534
Local Node
    
```

```

Name:
Autonomous System:
Area ID:
Rtr ID:
Remote Node
Name:
Autonomous System:
Area ID:
Rtr ID:
Descriptor
IPv4 Address: 10.10.1.1
Attributes
Flags:
IGP Metric: 1000
Admin-Grp: 0
Maximum Link BW (kbps): 100000
Maximum Reservable BW (kbps): 100000
TE Default Metric: 1000
Unreserved BW (kbps): 10000

Type: IPv4 Prefix
Protocol: ISIS | OSPFLevel: L1 | L2 | NA
Identifier:
Network : 215.0.0.0/24
Nexthop : 202.50.0.2
Path Id : None
From : 10.255.105.141
AS Path: 65534
Local Node
Name:
Autonomous System:
Area ID: 0.0.0.0
Rtr ID: 10.20.1.6
Flags:
Prefix descriptor
IPv4 Address: 10.20.1.6
Prefix-len: 32
MT_ID :0
Route Type :Unknown
    
```

**Output example: EVPN multicast join sync routes with advertised routes (detailed)**

```

A:node-2# show router bgp routes evpn mcast-join-synch hunt
=====
BGP Router ID:192.0.2.3      AS:64500      Local AS:64500
=====
Legend -
Status codes  : u - used, s - suppressed, h - history, d - decayed, * - valid
                l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP EVPN Mcast Join Synch Routes
=====
-----
RIB In Entries
-----
Network       : n/a
Nexthop       : 192.0.2.2
From          : 192.0.2.2
Res. Nexthop  : 192.168.23.1
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
Interface Name : int-PE-3-PE-2
Aggregator    : None
MED           : 0
    
```

```

AIGP Metric      : None          IGP Cost       : 10
Connector       : None
Community       : evi-target:64500:2001 target:00:00:00:00:00:01
                  bgp-tunnel-encap:MPLS
Cluster        : No Cluster Members
Originator Id   : None          Peer Router Id  : 192.0.2.2
Flags           : Used Valid Best IGP
Route Source    : Internal
AS-Path        : No As-Path
EVPN type      : MCAST-JOIN
Tag            : 0
ESI            : 01:00:00:00:00:00:01:00:00:00
Version        : Flags(0xc): IE:1/V3:1/V2:0/V1:0
Src IP         : 0.0.0.0
Grp IP         : 239.0.0.4
Originator IP   : 192.0.2.2
Route Dist.    : 192.0.2.2:2001
Route Tag      : 0
Neighbor-AS    : n/a
DB Orig Val    : N/A          Final Orig Val  : N/A
Source Class   : 0          Dest Class     : 0
Add Paths Send : Default
Last Modified  : 00h29m38s
    
```

**Output example: IPv4 VPN routes (with advertised routes) with attached attribute set (ATTR\_SET) (detailed)**



**Note:** ATTR\_SET is supported for IPv4, IPv6, IPv4 VPN, IPv6 VPN, and labeled unicast IPv4 routes.

```

A:node-2# show router bgp routes vpn-ipv4 hunt
=====
BGP Router ID:10.20.1.2      AS:100      Local AS:100
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
              l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP VPN-IPv4 Routes
=====
-----
RIB In Entries
-----
Network      : 10.10.35.0/24
Nexthop     : 10.20.1.3
Route Dist. : 100:3          VPN Label    : 524286
Path Id      : None
From        : 10.20.1.3
Res. Nexthop : n/a
Local Pref. : 100          Interface Name : to_C
Aggregator AS : None      Aggregator   : None
Atomic Aggr. : Not Atomic MED           : None
AIGP Metric  : None      IGP Cost     : 10
Connector    : None
Community    : target:100:1
Cluster      : No Cluster Members
Originator Id : None      Peer Router Id : 10.20.1.3
Fwd Class    : None      Priority      : None
Flags        : Used Valid Best IGP
Route Source : Internal
    
```

```
AS-Path      : No As-Path
Route Tag    : 0
Neighbor-AS  : n/a
DB Orig Val  : N/A
Source Class : 0
Add Paths Send : Default
Last Modified : 00h00m55s
VPRN Imported : 1
Final Orig Val : N/A
Dest Class   : 0

Attribute-Set [Origin-AS 65000]
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : color:00:1 target:65002:100
Cluster      : No Cluster Members
Originator Id : None
AS-Path      : No As-Path
Aggregator    : None
MED          : None

-----

Network      : 100.1.1.1/32
Nexthop     : 10.20.1.3
Route Dist.  : 100:3
Path Id     : None
From        : 10.20.1.3
Res. Nexthop : n/a
Local Pref. : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : target:100:1
Cluster      : No Cluster Members
Originator Id : None
Fwd Class    : None
Flags       : Used Valid Best IGP
Route Source : Internal
AS-Path     : No As-Path
Route Tag   : 0
Neighbor-AS : n/a
DB Orig Val : N/A
Source Class : 0
Add Paths Send : Default
Last Modified : 00h00m55s
VPRN Imported : 1
VPN Label    : 524286
Interface Name : to_C
Aggregator   : None
MED          : 0
IGP Cost     : 10
Peer Router Id : 10.20.1.3
Priority     : None
Final Orig Val : N/A
Dest Class   : 0

Attribute-Set [Origin-AS 65000]
Local Pref.   : 100
Aggregator AS : None
Atomic Aggr.  : Not Atomic
AIGP Metric   : None
Connector     : None
Community     : color:00:1 target:65002:100
Cluster      : No Cluster Members
Originator Id : None
AS-Path      : No As-Path
Aggregator    : None
MED          : None

-----

RIB Out Entries
-----

Network      : 10.10.12.0/24
Nexthop     : 10.20.1.2
```

```

Route Dist.      : 100:2                VPN Label       : 524286
Path Id         : None
From           : 10.20.1.3
Res. Nexthop   : n/a
Local Pref.    : 100
Aggregator AS  : None                  Interface Name  : NotAvailable
Atomic Aggr.   : Not Atomic           Aggregator     : None
AIGP Metric    : None                  MED           : None
Connector      : None                  IGP Cost      : n/a
Community      : target:100:1
Cluster        : No Cluster Members
Originator Id  : None                  Peer Router Id : 10.20.1.3
Origin         : IGP
AS-Path        : No As-Path
Route Tag      : 0
Neighbor-AS    : n/a
DB Orig Val    : N/A                  Final Orig Val : N/A
Source Class   : 0                    Dest Class     : 0

Attribute-Set [Origin-AS 65000]
Local Pref.    : 100
Aggregator AS  : None                  Aggregator     : None
Atomic Aggr.   : Not Atomic           MED           : None
AIGP Metric    : None
Connector      : None
Community      : color:00:1 target:65002:100
Cluster        : No Cluster Members
Originator Id  : None
    
```

-----  
 Routes : 3  
 =====

**Output example: IPv4 VPN routes with attached attribute set (ATTR\_SET) (detailed)**

```

A:node-2# show router bgp routes vpn-ipv4 detail
=====
BGP Router ID:192.0.2.2      AS:65002      Local AS:65002
=====
Legend -
Status codes : u - used, s - suppressed, h - history, d - decayed, * - valid
              l - leaked, x - stale, > - best, b - backup, p - purge
Origin codes  : i - IGP, e - EGP, ? - incomplete
=====
BGP VPN-IPv4 Routes
=====
Original Attributes

Network      : 10.0.0.8/30
Nexthop     : 222.222.222.222
Route Dist. : 65002:2                VPN Label     : 524286
Path Id     : None
From       : 192.0.2.3
Res. Nexthop : n/a
Local Pref. : 100
Aggregator AS : None                  Interface Name : to-C
Atomic Aggr. : Not Atomic           Aggregator    : None
AIGP Metric  : None                  MED          : None
Connector    : None                  IGP Cost     : 10
Community    : color:00:1 target:65002:100
Cluster      : No Cluster Members
Originator Id : None                  Peer Router Id : 192.0.2.3
    
```

```
Fwd Class      : None          Priority       : None
Flags         : Used Valid Best IGP
Route Source  : Internal
AS-Path       : No As-Path
AttrSet       : Present        AttrSet OriginAS: 65000
Route Tag     : 0
Neighbor-AS   : n/a
DB Orig Val   : N/A           Final Orig Val : N/A
Source Class  : 0             Dest Class     : 0
Add Paths Send : Default
Last Modified : 71d14h14m
VPRN Imported : 1

Original Attribute-Set [Origin-AS 65000]
Local Pref.   : 100
Aggregator AS : None          Aggregator     : None
Atomic Aggr.  : Not Atomic    MED            : None
AIGP Metric   : None
Connector     : None
Community     : color:00:1 target:65002:100
Cluster       : No Cluster Members
Originator Id : None

Modified Attributes

Network       : 10.0.0.8/30
Nexthop      : 222.222.222.222
Route Dist.   : 65002:2      VPN Label      : 524286
Path Id       : None
From         : 192.0.2.3
Res. Nexthop : n/a
Local Pref.   : 100          Interface Name : to-C
Aggregator AS : None          Aggregator     : None
Atomic Aggr.  : Not Atomic    MED            : None
AIGP Metric   : None          IGP Cost       : 10
Connector     : None
Community     : color:00:1 target:65002:100
Cluster       : No Cluster Members
Originator Id : None          Peer Router Id : 192.0.2.3
Fwd Class     : None          Priority        : None
Flags         : Used Valid Best IGP
Route Source  : Internal
AS-Path       : No As-Path
AttrSet       : Present        AttrSet OriginAS: 65000
Route Tag     : 0
Neighbor-AS   : n/a
DB Orig Val   : N/A           Final Orig Val : N/A
Source Class  : 0             Dest Class     : 0
Add Paths Send : Default
Last Modified : 71d14h14m
VPRN Imported : 1

Modified Attribute-Set [Origin-AS 65000]
Local Pref.   : 100
Aggregator AS : None          Aggregator     : None
Atomic Aggr.  : Not Atomic    MED            : None
AIGP Metric   : None
Connector     : None
Community     : color:00:1 target:65002:100
Cluster       : No Cluster Members
Originator Id : None
```



Table 435: BGP Routes Output Fields

Label	Description
Add Paths Send	The local BGP router ID
Aggregator	The aggregator attribute value none — Aggregator attributes are not present
Aggregator AS	The aggregator AS value none — Aggregator AS attributes are not present
AIGP Metric	The Accumulated IGP metric
All-Type2/Preflen	The FEC 129 All Type 2/preference length
AS	The configured Autonomous System (AS) number
AS-Path	The BGP AS path attribute
Atomic Aggr.	Atomic — The atomic aggregator flag is set Not Atomic — The atomic aggregator flag is not set
AttrSet	The attribute set
AttrSet OriginAS	The attribute set origin AS
BGP Router ID	The local BGP router ID
BSID/Pref/TunnType	The binding SID (BSID), preference, and tunnel type
Cluster	The route reflector cluster list
Community	The BGP community attribute list
Connector	The connector attribute value
DB Orig Val	The database RPKI route origin validation state
Dest Class	The destination class
D-Path	The D-Path
ESI	The Ethernet Segment Identifier
EVPN type	The Ethernet VPN route type
Extended Tunne* (Extended Tunnel ID)	The extended tunnel ID
Final Orig Val	The final RPKI route origin validation state
Flag	The flag is set to one of the following:

Label	Description
	<ul style="list-style-type: none"> <li>• u — used</li> <li>• s — suppressed</li> <li>• h — history</li> <li>• d — decayed</li> <li>• * — valid</li> <li>• i — igp</li> <li>• e — egp</li> <li>• ? — incomplete</li> <li>• &gt; — best</li> <li>• S — sticky</li> </ul>
From	The IP address of the advertising BGP neighbor
Fwd Class	The forwarding class
Gateway Address	The gateway address
GroupIP/Group IP	The group IP address
Identifier	The service access (SAP) points
IGP Cost	The Interior Gateway Protocol (IGP) cost for the route
Interface Name	The name of the interface
Last Modified	The time elapsed since the next hop was modified
Local AS	The configured local AS setting If not configured, the value is the same as the AS
Local Pref.	The local preference value This value is used if the BGP route arrives from a BGP peer without the Local Pref attribute set. It is overridden by any value set via a route policy
MED	The MED metric value none — MED metrics are present
MPLS Label	The MPLS label
Neighbor-AS	The neighbor AS
Network	The IP prefix and mask length
Nexthop	The BGP next hop
Originator Id	The originator ID path attribute value

Label	Description
	none — The originator ID attribute is not present
OriginatorIP/Originator IP	The originator IP
OSPFLevel	The Open Shortest Path First (OSPF) level
P2MP-ID	The Internal identifier of point-to-multipoint LSP
Path Id	The path ID
Peer Router Id	The router ID of the advertising router
PMSI Tunnel Attribute	The P-Multicast Service Interface (PMSI) tunnel attribute
Prefix	The number of interfaces on the nodes on which BGP is enabled
Priority	The priority of the BGP route
Protocol	The protocol
RD	The Route Distinguisher (RD)
RD/Color/End Point RD/Color/End Pt	The RD, color, and end point
Res. Nexthop	The resolved next hop
RIB Priority	The Routing Information Base (RIB) priority
Route Dist.	The route distinguisher identifier attached to routes that distinguishes the VPN to which it belongs
Route Source	The route source
Route Tag	The route tag of the entry
Route Type	The route type
Source Class	The source class
SourceAS/Source AS	The source AS
SourceIP/Source IP	The source IP
Tag	The tag information
TieBreakReason	The step in the BGP decision process where a BGP route lost the tiebreak with the next better BGP route for the same prefix  LocalPref — This route is not the best because the next better route has a higher LOCAL_PREF  AIGP — This route is not the best because the next better route has a lower derived AIGP metric value

Label	Description
	<p>ASPathLen — This route is not the best because the next better route has a shorter AS PATH length</p> <p>Origin — This route is not the best because the next better route has a lower origin value</p> <p>MED — This route is not the best because the next better route has a lower MED, and MED comparison of the routes was allowed</p> <p>IBGP — This IBGP route is not the best because the next better route is an EBGP route</p> <p>NHCost — This route is not the best because the next better route has a lower metric value to reach the BGP NEXT HOP</p> <p>BGPID — This route is not the best because the next better route has a lower Originator ID or BGP Identifier</p> <p>ClusterLen — This route is not the best because the next better route has a shorter cluster list length</p> <p>PeerIP — This route is not the best because the next better route has a lower neighbor IP address</p>
Tunnel-ID	The tunnel ID
Tunnel-type	The tunnel type
Type	The type
VPN Label	The label generated by the PEs label manager
VPRN Imported	The VPRNs where a particular BGP-VPN received route has been imported and installed
Attributes	
Flags	The flags of the BGP-LS route
IGP Metric	The IGP metric
Admin-Grp	The admin group
Maximum Link BW (kbps)	The maximum link bandwidth (BW)
Maximum Reservable BW (kbps)	The maximum reservable bandwidth (BW)
TE Default Metric	The Traffic Engineering (TE) default metric
Unreserved BW (kbps)	The unreserved bandwidth (BW)
Descriptor	

Label	Description
IPv4 Address	The IPv4 address of the descriptor
Link descriptor	
IPV4 Interface Addr	The IPv4 interface address
IPV4 Neighbor Addr	The IPv4 neighbor address
Link State Attribute TLVs	
Administrative group (color)	The administrative group color
Maximum link bandwidth	The maximum link bandwidth
Max. reservable link bandwidth	The maximum reservable link bandwidth
Unreserved bandwidth0	The unreserved bandwidth0
Unreserved bandwidth1	The unreserved bandwidth1
Unreserved bandwidth2	The unreserved bandwidth2
Unreserved bandwidth3	The unreserved bandwidth3
Unreserved bandwidth4	The unreserved bandwidth4
Unreserved bandwidth5	The unreserved bandwidth5
Unreserved bandwidth6	The unreserved bandwidth6
Unreserved bandwidth7	The unreserved bandwidth7
TE Default Metric	The traffic engineering (TE) default
IGP Metric	The IGP metric
Adjacency Segment Identifier (Adj-SID)	The Adjacency Segment Identifier (Adj-SID)
Local Node	
Name	The name of the local node

Label	Description
Autonomous System	The Autonomous System
Area ID	The area ID
Rtr ID	The router ID
Flags	The flags in the detailed output display additional information about BGP routes
Local Node descriptor	
Autonomous System	The Autonomous System
Link State Id	The link-state ID
IGP Router Id	The IGP router
Prefix descriptor	
IPv4 Address	The IPv4 address
Prefix-len	The prefix length
MT_ID	The multitopology ID
Route Type	The route type
Remote Node	
Name	The remote node name
Autonomous System	The Autonomous System
Area ID	The area ID
Rtr ID	The router ID
Remote Node descriptor	
Autonomous System	The Autonomous System
Link State Id	The link-state ID
IGP Router Id	The Interior Gateway Protocol (IGP) ID

## routes

### Syntax

**routes** [**ipv4-unicast** | **ipv6-unicast** | **ipv4-multicast** | **ipv6-multicast** | **mt** *mt-id-number*] [*ip-prefix*[/*prefix-length*]] [**alternative**] [**exclude-shortcut**] [**flex-algo** {*flex-algo-id* | **all**}] [**status** {**reachable** | **unreachable**}] [**detail**]

## Context

[\[Tree\]](#) (show>router>isis routes)

## Full Context

show router isis routes

## Description

This command displays the routes in the IS-IS route table.

## Parameters

### **ipv4-unicast**

Displays IPv4 unicast parameters.

### **ipv6-unicast**

Displays IPv6 unicast parameters.

### **mt *mt-id-number***

Displays multi-topology parameters.

**Values** 0, 2

### **alternative**

Displays LFA details.

### **exclude-shortcut**

Displays the routes without shortcuts.

### **detail**

Displays detailed information.

### **flex-algo *flex-algo-id***

Displays the flexible algorithm aware forwarding path.

**Values** 128 to 255, all

### **flex-algo all**

Displays all the flexible algorithms-aware forwarding paths.

### **reachable**

Displays the reachable unicast routing table. When the status is not specified, the complete unicast routing table is displayed.

### **unreachable**

Displays the unreachable unicast routing table. When the status is not specified, the complete unicast routing table is displayed.

## Platforms

All

## Output

The following output is an example of IS-IS route unreachable information, and [Table 436: Output fields: IS-IS routes](#) describes the output fields.

### Output example

```
A:node-2>show>router>isis# routes status unreachable
=====
Rtr Base ISIS Instance 0 Route Table
=====
Prefix[Flags]          Metric    Lvl/Typ    Ver.  SysID/Hostname
NextHop                MT        AdminTag/SID[F]
-----
10.20.1.3/32          UPA       1/Int.     2     Dut-B
0.0.0.0                0         0         0     0
-----
No. of Routes: 1 (1 path)
-----
Flags      : L = LFA nexthop available
SID[F]     : R = Re-advertisement
           : N = Node-SID
           : nP = no penultimate hop POP
           : E = Explicit-Null
           : V = Prefix-SID carries a value
           : L = value/index has local significance
=====
```

The following output is an example of IS-IS route unreachable detailed information, and [Table 436: Output fields: IS-IS routes](#) describes the output fields.

### Output example

```
A:node-2>show>router>isis# routes status unreachable detail
=====
Rtr Base ISIS Instance 0 Route Table (detail)
=====
Prefix      : 10.20.1.3/32
Algorithm   : 0
Status      : Unreachable          Level      : 1
NextHop     : 0.0.0.0
Metric      : 4261412865 (UPA)     Type       : Internal
SPF Version : 2                   SysID/Hostname : Dut-B
MT          : 0                   AdminTag    : 0
-----
No. of Routes: 1 (1 path)
-----
SID[F]     : R = Re-advertisement
           : N = Node-SID
           : nP = no penultimate hop POP
           : E = Explicit-Null
           : V = Prefix-SID carries a value
           : L = value/index has local significance
=====
```

The following outputs are examples of IS-IS route information, and [Table 436: Output fields: IS-IS routes](#) describes the output fields.



**Output example**

```

A:node-2# show router isis routes
=====
Rtr Base ISIS Instance 0 Route Table
=====
Prefix[Flags]           Metric   Lvl/Typ   Ver.   SysID/Hostname
  NextHop              MT
-----
1.1.2.0/24              20       1/Int.    0      Dut-A
  1.1.3.1                0
1.1.2.0/24              20       1/Int.    0      Dut-B
  1.2.3.2                0
1.1.3.0/24              10       1/Int.    0      Dut-C
  0.0.0.0                0
1.2.3.0/24              10       1/Int.    0      Dut-C
  0.0.0.0                0
1.2.4.0/24              20       1/Int.    0      Dut-B
  1.2.3.2                0
1.3.5.0/24              10       1/Int.    0      Dut-C
  0.0.0.0                0
1.4.5.0/24              20       1/Int.    0      Dut-E
  1.3.5.5                0
1.4.6.0/24              30       1/Int.    0      Dut-B
  1.2.3.2                0
1.4.6.0/24              30       1/Int.    0      Dut-E
  1.3.5.5                0
10.20.1.1/32            10       1/Int.    0      Dut-A
  1.1.3.1                0
10.20.1.2/32            10       1/Int.    0      Dut-B
  1.2.3.2                0
10.20.1.3/32            0        1/Int.    0      Dut-C
  0.0.0.0                0
10.20.1.4/32            20       1/Int.    0      Dut-B
  1.2.3.2                0
10.20.1.4/32            20       1/Int.    0      Dut-E
  1.3.5.5                0
10.20.1.5/32            10       1/Int.    0      Dut-E
  1.3.5.5                0
10.20.1.6/32            30       1/Int.    0      Dut-B
  1.2.3.2                0
10.20.1.6/32            30       1/Int.    0      Dut-E
  1.3.5.5                0
-----
No. of Routes: 17 (17 paths)
-----
Flags      : L = LFA nexthop available
SID[F]    : R = Re-advertisement
           N = Node-SID
           nP = no penultimate hop POP
           E = Explicit-Null
           V = Prefix-SID carries a value
           L = value/index has local significance
=====

A:node-2# show router isis routes ipv4-unicast
=====
Rtr Base ISIS Instance 0 Route Table
=====
Prefix[Flags]           Metric   Lvl/Typ   Ver.   SysID/Hostname
  NextHop              MT
-----
1.2.3.0/24              10       1/Int.    8      Dut-C
  0.0.0.0                0
=====
    
```

1.2.4.0/24	20	1/Int.	8	Dut-D
1.3.4.4			0	0
1.2.5.0/24	20	1/Int.	8	Dut-B
1.2.3.2			0	0
1.3.4.0/24	10	1/Int.	8	Dut-C
0.0.0.0			0	0
1.3.5.0/24 [L]	30	1/Int.	11	Dut-B
1.2.3.2			0	0
1.4.5.0/24	20	1/Int.	8	Dut-D
1.3.4.4			0	0
2.3.4.0/24	40	1/Int.	11	Dut-D
1.3.4.4			0	0
4.0.0.1/32	10	1/Int.	8	Dut-D
1.3.4.4			0	0/1[NnP]
10.20.1.2/32	10	1/Int.	8	Dut-B
1.2.3.2			0	0/1002[NnP]
10.20.1.3/32	0	1/Int.	5	Dut-C
0.0.0.0			0	0/1003[NnP]
10.20.1.4/32	10	1/Int.	8	Dut-D
1.3.4.4			0	0/1004[NnP]
10.20.1.5/32 [L]	20	1/Int.	11	Dut-B
1.2.3.2			0	0/1005[NnP]
10.21.1.2/32	10	1/Int.	8	Dut-B
1.2.3.2			0	0
10.21.1.3/32	0	1/Int.	5	Dut-C
0.0.0.0			0	0
10.21.1.4/32	10	1/Int.	8	Dut-D
1.3.4.4			0	0
10.21.1.5/32 [L]	20	1/Int.	11	Dut-B
1.2.3.2			0	0

-----  
 No. of Routes: 16 (16 paths)  
 -----

Flags : L = LFA nexthop available  
 SID[F] : R = Re-advertisement  
           N = Node-SID  
           nP = no penultimate hop POP  
           E = Explicit-Null  
           V = Prefix-SID carries a value  
           L = value/index has local significance  
 =====

A:node-2# show router isis routes ipv4-unicast alternative

=====

Rtr Base ISIS Instance 0 Route Table (alternative)

=====

Prefix[Flags] NextHop Alt-Nexthop	Metric	Lvl/Typ	Ver. MT Alt- Metric	SysID/Hostname AdminTag/SID[F] Alt-Type
1.2.3.0/24	10	1/Int.	8	Dut-C
0.0.0.0			0	0
1.2.4.0/24	20	1/Int.	8	Dut-D
1.3.4.4			0	0
1.2.5.0/24	20	1/Int.	8	Dut-B
1.2.3.2			0	0
1.3.4.0/24	10	1/Int.	8	Dut-C
0.0.0.0			0	0
1.3.5.0/24	30	1/Int.	11	Dut-B
1.2.3.2			0	0
1.3.4.4(L)			30	NP
1.4.5.0/24	20	1/Int.	8	Dut-D
1.3.4.4			0	0

```

2.3.4.0/24          40      1/Int.    11    Dut-D
  1.3.4.4          0
4.0.0.1/32         10      1/Int.    8      Dut-D
  1.3.4.4          0      0/1[NnP]
10.20.1.2/32       10      1/Int.    8      Dut-B
  1.2.3.2          0      0/1002[NnP]
10.20.1.3/32       0        1/Int.    5      Dut-C
  0.0.0.0          0      0/1003[NnP]
10.20.1.4/32       10      1/Int.    8      Dut-D
  1.3.4.4          0      0/1004[NnP]
10.20.1.5/32       20      1/Int.    11     Dut-B
  1.2.3.2          0      0/1005[NnP]
  1.3.4.4(L)       20     NP
10.21.1.2/32       10      1/Int.    8      Dut-B
  1.2.3.2          0
10.21.1.3/32       0        1/Int.    5      Dut-C
  0.0.0.0          0
10.21.1.4/32       10      1/Int.    8      Dut-D
  1.3.4.4          0
10.21.1.5/32       20      1/Int.    11     Dut-B
  1.2.3.2          0
  1.3.4.4(L)       20     NP
-----
No. of Routes: 16 (18 paths)
Flags       : L = Loop-Free Alternate nexthop
Alt-Type    : LP = linkProtection, NP = nodeProtection
SID[F]     : R = Re-advertisement
             N = Node-SID
             nP = no penultimate hop POP
             E = Explicit-Null
             V = Prefix-SID carries a value
             L = value/index has local significance
=====
    
```

The following output is an example of IS-IS detailed route information.

### Output Example

```

A:node-2# show router isis routes 170::/96 detail

=====
Rtr Base ISIS Instance 0 Route Table (detail)
=====
Prefix       : 170::/96
Algorithm    : 134
Status       : Active                Level           : 1
NextHop      : fe80::a40f:1ff:fe01:b-"toA"
Metric       : 10                    Type            : Internal
SPF Version  : 8                    SysID/Hostname  : Dut-A
MT           : 0                    AdminTag        : 0
Alt-NextHop  : fe80::a414:1ff:fe01:15-"toB"
Alt-Metric   : 20                    Alt-Type        : linkProtection
-----
No. of Routes: 1 (1 path)
-----
SID[F]      : R = Re-advertisement
             N = Node-SID
             nP = no penultimate hop POP
             E = Explicit-Null
             V = Prefix-SID carries a value
             L = value/index has local significance
=====
    
```

The following output is an example of the flexible-algorithm output information, and [Table 436: Output fields: IS-IS routes](#) describes the output fields.

**Output example**

```
A:node-2# show router isis 0 routes flex-algo all
=====
Rtr Base ISIS Instance 0 Flex-Algo 128 Route Table
=====
Prefix[Flags]           Metric    Lvl/Typ    Ver.  SysID/Hostname
NextHop                MT        AdminTag/SID[F]
-----
10.20.1.1/32            0         1/Int.     93   Dut-A
0.0.0.0                 0         0/11[NnP]
10.20.1.2/32           200        2/Int.     89   Dut-C
10.10.10.6              0         0/12[NnP]
10.20.1.3/32           100        2/Int.     89   Dut-C
10.10.10.6              0         0/13[NnP]
10.20.1.4/32           300        2/Int.     96   Dut-C
10.10.10.6              0         0/14[RNnP]
-----
No. of Routes: 4 (4 paths)
-----
Flags      : L = LFA nexthop available
SID[F]     : R = Re-advertisement
           : N = Node-SID
           : nP = no penultimate hop POP
           : E = Explicit-Null
           : V = Prefix-SID carries a value
           : L = value/index has local significance
=====
```

The following output is an example of the flexible-algorithm output showing SRv6 routes and micro-segment locator routes, and [Table 436: Output fields: IS-IS routes](#) describes the output fields.

**Output Example**

```
A:node-2# show router isis routes flex-algo all
=====
Rtr Base ISIS Instance 0 Flex-Algo 128 Route Table
=====
Prefix[Flags]           Metric    Lvl/Typ    Ver.  SysID/Hostname
NextHop                MT        AdminTag/SID[F]
-----
1.1.1.11/32 [L]         10         1/Int.     7     Dut-A
1.1.3.1                 0         0/511[NnP]
1.1.1.12/32 [L]         10         1/Int.     7     Dut-B
1.2.3.2                 0         0/512[NnP]
1.1.1.13/32            0         1/Int.     3     Dut-C
0.0.0.0                 0         0/513[NnP]
1.1.1.14/32 [L]         20         1/Int.     8     Dut-B
1.2.3.2                 0         0/514[NnP]
1.1.1.15/32            10         1/Int.     7     Dut-E
1.3.5.5                 0         0/515[NnP]
1.1.1.16/32 [L]         20         1/Int.     8     Dut-E
1.3.5.5                 0         0/516[NnP]
110::/96 [L]           10         1/Int.     7     Dut-A
fe80::a40f:1ff:fe01:b-"toA" 0         0
210::/96 [L]           10         1/Int.     8     Dut-B
fe80::a414:1ff:fe01:15-"toB" 0         0
310::/96                0         1/Int.     9     Dut-C
::                       0         0
```

```

410::/96 [L] 20 1/Int. 8 Dut-B
  fe80::a414:1ff:fe01:15-"toB" 0 0
510::/96 10 1/Int. 8 Dut-E
  fe80::a42a:1ff:fe01:1-"toE" 0 0
610::/96 [L] 20 1/Int. 8 Dut-E
  fe80::a42a:1ff:fe01:1-"toE" 0 0
2000:0:0:1::/64 [L] 10 1/Int. 7 Dut-A
  fe80::a40f:1ff:fe01:b-"toA" 0 0
2000:0:0:2::/64 [L] 10 1/Int. 8 Dut-B
  fe80::a414:1ff:fe01:15-"toB" 0 0
2000:0:0:3::/64 0 1/Int. 9 Dut-C
  :: 0 0
2000:0:0:4::/64 [L] 20 1/Int. 8 Dut-B
  fe80::a414:1ff:fe01:15-"toB" 0 0
2000:0:0:5::/64 10 1/Int. 8 Dut-E
  fe80::a42a:1ff:fe01:1-"toE" 0 0
2000:0:0:6::/64 [L] 20 1/Int. 8 Dut-E
  fe80::a42a:1ff:fe01:1-"toE" 0 0
3ffe::101:10b/128 [L] 10 1/Int. 7 Dut-A
  fe80::a40f:1ff:fe01:b-"toA" 0 0/711[NnP]
3ffe::101:10c/128 [L] 10 1/Int. 7 Dut-B
  fe80::a414:1ff:fe01:15-"toB" 0 0/712[NnP]
3ffe::101:10d/128 0 1/Int. 3 Dut-C
  :: 0 0/713[NnP]
3ffe::101:10e/128 [L] 20 1/Int. 8 Dut-B
  fe80::a414:1ff:fe01:15-"toB" 0 0/714[NnP]
3ffe::101:10f/128 10 1/Int. 7 Dut-E
  fe80::a42a:1ff:fe01:1-"toE" 0 0/715[NnP]
3ffe::101:110/128 [L] 20 1/Int. 8 Dut-E
  fe80::a42a:1ff:fe01:1-"toE" 0 0/716[NnP]
-----
No. of Routes: 24 (24 paths)
-----
Flags      : L = LFA nexthop available
SID[F]    : R = Re-advertisement
           : N = Node-SID
           : nP = no penultimate hop POP
           : E = Explicit-Null
           : V = Prefix-SID carries a value
           : L = value/index has local significance
=====

Rtr Base ISIS Instance 0 Flex-Algo 129 Route Table
=====
Prefix[Flags]      Metric  Lvl/Typ  Ver.  SysID/Hostname
NextHop            MT      AdminTag/SID[F]
-----
1.1.1.11/32 [L]    10      1/Int.   7     Dut-A
  1.1.3.1          0       0        0     0/521[NnP]
1.1.1.12/32 [L]    10      1/Int.   7     Dut-B
  1.2.3.2          0       0        0     0/522[NnP]
1.1.1.13/32        0       1/Int.   3     Dut-C
  0.0.0.0          0       0        0     0/523[NnP]
1.1.1.14/32 [L]    20      1/Int.   8     Dut-B
  1.2.3.2          0       0        0     0/524[NnP]
1.1.1.15/32        10      1/Int.   7     Dut-E
  1.3.5.5          0       0        0     0/525[NnP]
1.1.1.16/32 [L]    20      1/Int.   8     Dut-E
  1.3.5.5          0       0        0     0/526[NnP]
120::/96 [L]       10      1/Int.   7     Dut-A
  fe80::a40f:1ff:fe01:b-"toA" 0 0
220::/96 [L]       10      1/Int.   8     Dut-B
  fe80::a414:1ff:fe01:15-"toB" 0 0
    
```

```

320::/96          0          1/Int.      9          Dut-C
::
420::/96 [L]     20          1/Int.      8          Dut-B
    fe80::a414:1ff:fe01:15-"toB"  0          0
520::/96          10          1/Int.      8          Dut-E
    fe80::a42a:1ff:fe01:1-"toE"    0          0
620::/96 [L]     20          1/Int.      8          Dut-E
    fe80::a42a:1ff:fe01:1-"toE"    0          0
3000:0:0:1::/64 [L] 10          1/Int.      7          Dut-A
    fe80::a40f:1ff:fe01:b-"toA"    0          0
3000:0:0:2::/64 [L] 10          1/Int.      8          Dut-B
    fe80::a414:1ff:fe01:15-"toB"  0          0
3000:0:0:3::/64    0          1/Int.      9          Dut-C
::
3000:0:0:4::/64 [L] 20          1/Int.      8          Dut-B
    fe80::a414:1ff:fe01:15-"toB"  0          0
3000:0:0:5::/64    10          1/Int.      8          Dut-E
    fe80::a42a:1ff:fe01:1-"toE"    0          0
3000:0:0:6::/64 [L] 20          1/Int.      8          Dut-E
    fe80::a42a:1ff:fe01:1-"toE"    0          0
3ffe::101:10b/128 [L] 10          1/Int.      7          Dut-A
    fe80::a40f:1ff:fe01:b-"toA"    0          0/721[NnP]
3ffe::101:10c/128 [L] 10          1/Int.      7          Dut-B
    fe80::a414:1ff:fe01:15-"toB"  0          0/722[NnP]
3ffe::101:10d/128   0          1/Int.      3          Dut-C
::
    0          0/723[NnP]
3ffe::101:10e/128 [L] 20          1/Int.      8          Dut-B
    fe80::a414:1ff:fe01:15-"toB"  0          0/724[NnP]
3ffe::101:10f/128   10          1/Int.      7          Dut-E
    fe80::a42a:1ff:fe01:1-"toE"    0          0/725[NnP]
3ffe::101:110/128 [L] 20          1/Int.      8          Dut-E
    fe80::a42a:1ff:fe01:1-"toE"    0          0/726[NnP]
-----
No. of Routes: 24 (24 paths)
-----
Flags          : L = LFA nexthop available
SID[F]         : R = Re-advertisement
                N = Node-SID
                nP = no penultimate hop POP
                E = Explicit-Null
                V = Prefix-SID carries a value
                L = value/index has local significance
=====
    
```

The following output is an example of the detailed flexible-algorithm output, and [Table 436: Output fields: IS-IS routes](#) describes the output fields.

### Output example

```

A:node-2# show router isis routes flex-algo 134 170::/96 detail

=====
Rtr Base ISIS Instance 0 Flex-Algo 134 Route Table (detail)
=====
Prefix          : 170::/96
Algorithm       : 134
Status          : Active                      Level           : 1
NextHop         : fe80::a40f:1ff:fe01:b-"toA"
Metric         : 10                          Type            : Internal
SPF Version     : 8                          SysID/Hostname  : Dut-A
MT              : 0                          AdminTag        : 0
Alt-NextHop     : fe80::a414:1ff:fe01:15-"toB"
Alt-Metric      : 20                          Alt-Type        : linkProtection
    
```


```
-----
No. of Routes: 1 (1 path)
-----
SID[F]      : R = Re-advertisement
              N = Node-SID
              nP = no penultimate hop POP
              E = Explicit-Null
              V = Prefix-SID carries a value
              L = value/index has local significance
=====
```

The following output is an example of information about SRv6 RTM entries associated with a flexible algorithm.

**Output example**

```
A:node-2# show router isis 0 routes flex-algo 128
=====
Rtr Base ISIS Instance 0 Flex-Algo 128 Route Table
=====
Prefix[Flags]      Metric    Lvl/Typ    Ver.  SysID/Hostname
NextHop            MT        AdminTag/SID[F]
-----
1.1.1.11/32        10        1/Int.     7     Dut-A
  1.1.3.1           0         0/511[NnP]
110::/96 [L]       10        1/Int.     7     Dut-A
  fe80::ce0f:1ff:fe01:b-"toA"  0         0
-----
No. of Routes: 2 (2 paths)
-----
Flags              : L = LFA nexthop available
SID[F]             : R = Re-advertisement
                   N = Node-SID
                   nP = no penultimate hop POP
                   E = Explicit-Null
                   V = Prefix-SID carries a value
                   L = value/index has local significance
=====
```

Table 436: Output fields: IS-IS routes

Label	Description
Prefix or Prefix [Flags]	Displays the route prefix and mask
Algorithm	Displays the algorithm
Status	Displays the status
Level or Lvl	Displays the IS-IS level
NextHop	Displays the system ID of the next hop
Metric	Displays the metric of the route   <b>Note:</b> <ul style="list-style-type: none"> <li>For an unreachable route, the short table view shows UPA as the metric value.</li> </ul>

Label	Description
	<ul style="list-style-type: none"> <li>In the detailed view, the real metric value with (UPA) shows for an unreachable route and the status indicates Unreachable.</li> </ul>
Type	Displays the route type as either Internal or External
SPF Version or Ver.	Displays the SPF version that generated the route
SysID/Hostname	Displays the hostname for the specific <i>system-id</i>
MT	Displays the IS-IS topology for the route
AdminTag	Displays the number of administrative tags
SID[F]	<p>Displays the segment identifier flags of a Prefix-SID as defined by IETF segment routing</p> <p>R: Re-advertisement flag. If set, the prefix to which this Prefix-SID is attached has been propagated by the router either from another level (in other words, from level 1 to level 2 or the opposite) or from redistribution (for example, from another protocol).</p> <p>N: Node-SID flag. The N-Flag is set on Prefix-SIDs attached to a router loopback address.</p> <p>nP: no-PHP flag. If set, the penultimate hop must not pop the Prefix-SID before delivering the packet to the node that advertised the Prefix-SID</p> <p>E: Explicit-Null Flag. If set, any upstream neighbor of the Prefix-SID originator must replace the Prefix-SID with a Prefix-SID having an Explicit-NULL value (0 for IPv4 and 2 for IPv6) before forwarding the packet</p> <p>V: Value flag. If set, the Prefix-SID carries a value (instead of an index)</p> <p>L: Local Flag. If set, the value/index carried by the Prefix-SID has local significance</p>
No. of Routes	Displays the total number of routes

## routes

### Syntax

```
routes [ip-prefix[/prefix-length]] [type] [detail] [alternative] [summary] [exclude-shortcut] [flex-algo
{flex-algo-id | all}]
```

### Context

[\[Tree\]](#) (show>router>ospf routes)



## Full Context

show router ospf routes

## Description

This command displays information about OSPF routes.

## Parameters

### *ip-prefix[/prefix-length]*

Displays information about the specified IP prefix and length.

### *flex-algo-id*

Displays information about the specified flexible algorithm identifier.

**Values** 128 to 255

### *type*

Displays information about the specified type.

**Values** intra-area, inter-area, external-1, external-2, nssa-1, nssa-2

### *detail*

Displays detailed information about the routes.

### *alternative*

Displays the level of protection per prefix (ref. show router OSPF routes alternative).

### *summary*

Displays summarized information about the routes.

### *exclude-shortcut*

Displays routes without shortcut, in the **show>router>ospf** context.

### *flex-algo*

Displays the OSPFv2 routes associated with a segment routing algorithm specified by the flexible algorithm identifier.

### *all*

Displays the OSPFv2 routes associated with all flexible algorithms.

## Platforms

All

## Output

The following output shows an example of OSPF routes information.

### Output Example

```
*A:Dut-C# show router ospf routes flex-algo 128
=====
Rtr Base OSPFv2 Instance 0 Flex-Algo 128 Route Table
=====
Destination          Type(Dest)  Stat  SID  SIDflgs
  NHIP              NHIF      Cost[E2]
```

```

-----
10.20.1.2/32      IA (HOST)    N (R)  1282  NnP
  192.168.1.2    2          200
10.20.1.3/32    IA (HOST)    D (R)  1283  NnP
  DIRECT         1          0
10.20.1.5/32    IA (HOST)    N (R)  1285  NnP
  192.168.1.2    2          100
10.20.1.2/0     IA (RTR)     N (N)
  192.168.1.2    2          200
10.20.1.3/0     IA (RTR)     N (N)
                  0
10.20.1.5/0     IA (RTR)     N (N)
  192.168.1.2    2          100
-----
No. of routes found: 6 (5 paths)
Stat: D = direct  N = not direct
(RTM stat):(R) = added      (F) = add failed
          (N) = not added  (D) = policy discarded
unnum-xxx: nexthop is unnumbered global interface index xxx
SID Flags : N = Node-SID
            nP = no penultimate hop POP
            M = Mapping server
            E = Explicit-Null
            V = Prefix-SID carries a value
            L = value/index has local significance
            I = Inter Area flag
            A = Attached flag
            B = Backup flag
=====
*A:Dut-C#
*A:Dut-C#
    
```

## routes

### Syntax

**routes** [*ip-prefix*[/*prefix-length*]] [**type**] [**detail**] [**alternative**] [**summary**] [**exclude-shortcut**]

### Context

**[Tree]** (show>router>ospf3 routes)

### Full Context

show router ospf3 routes

### Description

This command displays information about OSPF routes.

### Parameters

***ip-prefix*[/*prefix-length*]**

Displays information about the specified IP prefix and length.

**type**

Displays information about the specified type.

**Values** intra-area, inter-area, external-1, external-2, nssa-1, nssa-2

**detail**

Displays detailed information about the routes.

**alternative**

Displays the level of protection per prefix (ref. show router OSPF routes alternative).

**summary**

Displays summarized information about the routes.

**exclude-shortcut**

Displays routes without shortcut, in the **show>router>ospf** context.

**Platforms**

All

**Output**

The following output shows an example of OSPF information.

**Output Example**

```
*A:Dut-C# show router ospf routes
=====
Rtr Base OSPFv2 Instance 0 Route Table (alternative)
=====
Destination      Type(Dest)  Stat  SID  SIDflgs
  NHIP          NHIF      Cost[E2]
-----
1.1.1.1/32       IA (HOST)   N (R)
  1.1.3.1        3          1000
1.1.2.0/24       IA (NET)   N (R)
  1.1.3.1        3          2000
  1.2.3.2        4          2000
1.1.3.0/24       IA (NET)   D (F)
  DIRECT        3          1000
1.2.3.0/24       IA (NET)   D (F)
  DIRECT        4          1000
1.2.4.0/24       IA (NET)   N (R)
  2.2.3.2        5          2000
1.3.5.0/24       IA (NET)   D (F)
  DIRECT        6          1000
1.4.5.0/24       IA (NET)   N (R)
  1.3.5.5        6          2000
1.4.6.0/24       IE (NET)   N (R)
  2.2.3.2        5          3000
  1.3.5.5        6          3000
1.5.6.0/24       IE (NET)   N (R)
  1.3.5.5        6          2000
2.2.2.2/32       IA (HOST)   N (R)
  2.2.3.2        5          1000
2.2.3.0/24       IA (NET)   D (F)
  DIRECT        5          1000
3.3.3.3/32       IA (HOST)   D (F)
  DIRECT        2          0
4.4.4.4/32       IA (HOST)   N (R)
  2.2.3.2        5          2000
  1.3.5.5        6          2000
5.5.5.5/32       IA (HOST)   N (R)
```

```

1.3.5.5          6          1000
6.6.6.6/32      IE (HOST)   N (R)
1.3.5.5          6          2000
10.20.1.1/32    IA (HOST)   N (R)  11    NnP
1.1.3.1         3          1000
10.20.1.2/32    IA (HOST)   N (R)  22    NnP
2.2.3.2         5          1000
10.20.1.3/32    IA (HOST)   D (F)  33    NnP
DIRECT          1          0
10.20.1.4/32    IA (HOST)   N (R)  44    NnP
2.2.3.2         5          2000
1.3.5.5          6          2000
10.20.1.5/32    IA (HOST)   N (R)  55    NnP
1.3.5.5          6          1000
10.20.1.6/32    IE (HOST)   N (R)  66    NnP
1.3.5.5          6          2000
10.20.1.1/0     IA (RTR)    N (N)
1.1.3.1         3          1000
10.20.1.2/0     IA (AB-AS)  N (N)
2.2.3.2         5          1000
10.20.1.2/0     IA (AB-AS)  N (N)
1.2.3.2         4          1000
10.20.1.4/0     IA (AB-AS)  N (N)
2.2.3.2         5          2000
1.3.5.5          6          2000
10.20.1.5/0     IA (AB-AS)  N (N)
1.3.5.5          6          1000
-----
No. of routes found: 26 (31 paths)
Stat: D = direct   N = not direct
(RTM stat):(R) = added      (F) = add failed
          (N) = not added  (D) = policy discarded
SID Flags : N = Node-SID
          nP = no penultimate hop POP
          M = Mapping server
          E = Explicit-Null
          V = Prefix-SID carries a value
          L = value/index has local significance
          I = Inter Area flag
          A = Attached flag
=====
*A:Dut-C# show router ospf routes
=====
Rtr Base OSPFv2 Instance 0 Routing Table
=====
Destination      Type(Dest)   Stat   SID   SIDflgs
  NHIP           NHIF      Cost[E2]
-----
1.1.1.1/32       IA (HOST)    N (R)
  1.1.3.1        3          1000
1.1.2.0/24       IA (NET)     N (R)
  1.1.3.1        3          2000
  1.2.3.2        4          2000
1.1.3.0/24       IA (NET)     D (F)
DIRECT          3          1000
1.2.3.0/24       IA (NET)     D (F)
DIRECT          4          1000
1.2.4.0/24       IA (NET)     N (R)
  2.2.3.2        5          2000
1.3.5.0/24       IA (NET)     D (F)
DIRECT          6          1000
1.4.5.0/24       IA (NET)     N (R)
  1.3.5.5        6          2000
    
```

```

1.4.6.0/24      IE (NET)      N (R)
  2.2.3.2      5             3000
  1.3.5.5      6             3000
1.5.6.0/24      IE (NET)      N (R)
  1.3.5.5      6             2000
2.2.2.2/32      IA (HOST)     N (R)
  2.2.3.2      5             1000
2.2.3.0/24      IA (NET)      D (F)
  DIRECT       5             1000
3.3.3.3/32      IA (HOST)     D (F)
  DIRECT       2             0
4.4.4.4/32      IA (HOST)     N (R)
  2.2.3.2      5             2000
  1.3.5.5      6             2000
5.5.5.5/32      IA (HOST)     N (R)
  1.3.5.5      6             1000
6.6.6.6/32      IE (HOST)     N (R)
  1.3.5.5      6             2000
10.20.1.1/32     IA (HOST)     N (R)  11      NnP
  1.1.3.1      3             1000
10.20.1.2/32     IA (HOST)     N (R)  22      NnP
  2.2.3.2      5             1000
10.20.1.3/32     IA (HOST)     D (F)  33      NnP
  DIRECT       1             0
10.20.1.4/32     IA (HOST)     N (R)  44      NnP
  2.2.3.2      5             2000
  1.3.5.5      6             2000
10.20.1.5/32     IA (HOST)     N (R)  55      NnP
  1.3.5.5      6             1000
10.20.1.6/32     IE (HOST)     N (R)  66      NnP
  1.3.5.5      6             2000
10.20.1.1/0      IA (RTR)      N (N)
  1.1.3.1      3             1000
10.20.1.2/0      IA (AB-AS)    N (N)
  2.2.3.2      5             1000
10.20.1.2/0      IA (AB-AS)    N (N)
  1.2.3.2      4             1000
10.20.1.4/0      IA (AB-AS)    N (N)
  2.2.3.2      5             2000
  1.3.5.5      6             2000
10.20.1.5/0      IA (AB-AS)    N (N)
  1.3.5.5      6             1000
    
```

```

-----
No. of routes found: 26 (31 paths)
Stat: D = direct   N = not direct
(RTM stat):(R) = added      (F) = add failed
      (N) = not added  (D) = policy discarded
SID Flags : N = Node-SID
            nP = no penultimate hop POP
            M = Mapping server
            E = Explicit-Null
            V = Prefix-SID carries a value
            L = value/index has local significance
            I = Inter Area flag
            A = Attached flag
    
```

```

=====
*A:Dut-C# show router ospf routes alternative
=====
    
```

```

Rtr Base OSPFv2 Instance 0 Route Table (alternative)
=====
    
```

Destination	Type(Dest)	Stat	SID	SIDflgs
NHIP	NHIF	Cost[E2]		
A-NHIP(L)	A-NHIF	A-Cost[E2]		

```

-----
1.1.1.1/32      IA (HOST)      N (R)
  1.1.3.1      3              1000
  1.2.3.2(L)   4              2000
1.1.2.0/24     IA (NET)      N (R)
  1.1.3.1      3              2000
  1.2.3.2      4              2000
1.1.3.0/24     IA (NET)      D (F)
  DIRECT       3              1000
1.2.3.0/24     IA (NET)      D (F)
  DIRECT       4              1000
1.2.4.0/24     IA (NET)      N (R)
  2.2.3.2      5              2000
1.3.5.0/24     IA (NET)      D (F)
  DIRECT       6              1000
1.4.5.0/24     IA (NET)      N (R)
  1.3.5.5      6              2000
1.4.6.0/24     IE (NET)      N (R)
  2.2.3.2      5              3000
  1.3.5.5      6              3000
1.5.6.0/24     IE (NET)      N (R)
  1.3.5.5      6              2000
2.2.2.2/32     IA (HOST)      N (R)
  2.2.3.2      5              1000
2.2.3.0/24     IA (NET)      D (F)
  DIRECT       5              1000
3.3.3.3/32     IA (HOST)      D (F)
  DIRECT       2              0
4.4.4.4/32     IA (HOST)      N (R)
  2.2.3.2      5              2000
  1.3.5.5      6              2000
5.5.5.5/32     IA (HOST)      N (R)
  1.3.5.5      6              1000
6.6.6.6/32     IE (HOST)      N (R)
  1.3.5.5      6              2000
10.20.1.1/32   IA (HOST)      N (R)  11      NnP
  1.1.3.1      3              1000
  1.2.3.2(L)   4              2000
10.20.1.2/32   IA (HOST)      N (R)  22      NnP
  2.2.3.2      5              1000
10.20.1.3/32   IA (HOST)      D (F)  33      NnP
  DIRECT       1              0
10.20.1.4/32   IA (HOST)      N (R)  44      NnP
  2.2.3.2      5              2000
  1.3.5.5      6              2000
10.20.1.5/32   IA (HOST)      N (R)  55      NnP
  1.3.5.5      6              1000
10.20.1.6/32   IE (HOST)      N (R)  66      NnP
  1.3.5.5      6              2000
10.20.1.1/0    IA (RTR)      N (N)
  1.1.3.1      3              1000
10.20.1.2/0    IA (AB-AS)    N (N)
  2.2.3.2      5              1000
10.20.1.2/0    IA (AB-AS)    N (N)
  1.2.3.2      4              1000
10.20.1.4/0    IA (AB-AS)    N (N)
  2.2.3.2      5              2000
  1.3.5.5      6              2000
10.20.1.5/0    IA (AB-AS)    N (N)
  1.3.5.5      6              1000
-----

```

```

No. of routes found: 26 (31 paths)
Flags: L = Loop-Free Alternate nexthop
Stat: D = direct  N = not direct

```

```
(RTM stat):(R) = added      (F) = add failed
              (N) = not added (D) = policy discarded
SID Flags : N = Node-SID
              nP = no penultimate hop POP
              M = Mapping server
              E = Explicit-Null
              V = Prefix-SID carries a value
              L = value/index has local significance
              I = Inter Area flag
              A = Attached flag
```

```
=====
*A:Dut-C# show router ospf routes alternative detail
=====
```

```
Rtr Base OSPFv2 Instance 0 Route Table (alternative) (detail)
```

Destination	Type(Dest)	Stat	SID	SIDflgs	Type	Weight:Cfg/Norm
NHIF	NHIF	Cost[E2]	Area		PGID	
A-NHIF(L)	A-NHIF	A-Cost[E2]	A-Type			
1.1.1.1/32	IA (HOST)	N (R)				
1.1.3.1	3	1000	0.0.0.1			
1.2.3.2(L)	4	2000	LINK		0x410079	
1.1.2.0/24	IA (NET)	N (R)				
1.1.3.1	3	2000	0.0.0.1			
1.2.3.2	4	2000	0.0.0.1			
1.1.3.0/24	IA (NET)	D (F)				
DIRECT	3	1000	0.0.0.1			
1.2.3.0/24	IA (NET)	D (F)				
DIRECT	4	1000	0.0.0.1			
1.2.4.0/24	IA (NET)	N (R)				
2.2.3.2	5					

```
=====
*A:Dut-C# show router ospf 1 routes exclude-shortcut alternative detail
=====
```

```
Rtr Base OSPFv2 Instance 1 Route Table (excl-shortcut) (alternative) (detail)
```

Destination	Type(Dest)	Stat	Area	Tunnel-Information
NHIF	NHIF	Cost[E2]	A-Type	PGID
A-NHIF(L)	A-NHIF	A-Cost[E2]	A-Type	PGID
1.1.2.0/24	IA (NET)	N (R)		
1.1.3.1	3	20	0.0.0.0	
1.2.3.2	4	20	0.0.0.0	
1.1.3.0/24	IA (NET)	D (F)		
DIRECT	3	10	0.0.0.0	
1.2.3.0/24	IA (NET)	D (F)		
DIRECT	4	10	0.0.0.0	
1.2.4.0/24	IA (NET)	N (R)		
1.2.3.2	4	20	0.0.0.0	
1.3.5.0/24	IA (NET)	D (F)		
DIRECT	5	10	0.0.0.0	
1.4.5.0/24	IA (NET)	N (R)		
1.3.5.5	5	20	0.0.0.0	
1.4.6.0/24	IA (NET)	N (R)		
1.2.3.2	4	30	0.0.0.0	
1.3.5.5	5	30	0.0.0.0	
10.20.1.1/32	IA (HOST)	N (R)		
1.1.3.1	3	10	0.0.0.0	
10.20.1.2/32	IA (HOST)	N (R)		
1.2.3.2	4	10	0.0.0.0	
10.20.1.3/32	IA (HOST)	D (F)		
DIRECT	1	0	0.0.0.0	

```

10.20.1.4/32      IA (HOST)      N (R)
  1.2.3.2        4              20      0.0.0.0
  1.3.5.5        5              20      0.0.0.0
10.20.1.5/32      IA (HOST)      N (R)
  1.3.5.5        5              10      0.0.0.0
10.20.1.6/32      IA (HOST)      N (R)
  1.2.3.2        4              30      0.0.0.0
  1.3.5.5        5              30      0.0.0.0
10.20.1.1/0       IA (RTR)       N (N)
  1.1.3.1        3              10      0.0.0.0
10.20.1.2/0       IA (RTR)       N (N)
  1.2.3.2        4              10      0.0.0.0
10.20.1.4/0       IA (RTR)       N (N)
  1.2.3.2        4              20      0.0.0.0
  1.3.5.5        5              20      0.0.0.0
10.20.1.5/0       IA (RTR)       N (N)
  1.3.5.5        5              10      0.0.0.0
10.20.1.6/0       IA (RTR)       N (N)
  1.2.3.2        4              30      0.0.0.0
  1.3.5.5        5              30      0.0.0.0
-----
No. of routes found: 18 (24 paths)
Flags: L = Loop-Free Alternate nexthop
Stat: D = direct  N = not direct
(RTM stat):(R) = added      (F) = add failed
          (N) = not added  (D) = policy discarded
=====
*A:Dut-C#

*A:Dut-A# show router ospf routes alternative detail
=====
Rtr Base OSPFv2 Instance 0 Route Table (alternative) (detail)
=====
Destination      Type(Dest)      Stat
NHIP             NHIF            Cost[E2]        Area            Tunnel-Information
A-NHIP(L)        A-NHIF          A-Cost[E2]      A-Type          PGID
-----
1.1.2.0/24       IA (NET)        D (F)
DIRECT           2              10      0.0.0.0
1.1.3.0/24       IA (NET)        D (F)
DIRECT           3              10      0.0.0.0
1.2.3.0/24       IA (NET)        N (R)
  1.1.2.2        2              20      0.0.0.0
  1.1.3.3        3              20      0.0.0.0
1.2.4.0/24       IA (NET)        N (R)
  1.1.2.2        2              20      0.0.0.0
  1.1.3.3(L)     3              30      LINK            0x130015
1.3.5.0/24       IA (NET)        N (R)
  1.1.3.3        3              20      0.0.0.0
  1.1.2.2(L)     2              30      LINK            0x130016
1.4.5.0/24       IA (NET)        N (R)
  1.1.2.2        2              30      0.0.0.0
  1.1.3.3        3              30      0.0.0.0
1.4.6.0/24       IA (NET)        N (R)
  1.1.2.2        2              30      0.0.0.0
  1.1.3.3(L)     3              40      LINK            0x130015
1.5.6.0/24       IA (NET)        N (R)
  1.1.3.3        3              30      0.0.0.0
  1.1.2.2(L)     2              40      LINK            0x130016
10.20.1.1/32     IA (HOST)       D (F)
DIRECT           1              0       0.0.0.0
10.20.1.2/32     IA (HOST)       N (R)
  1.1.2.2        2              10      0.0.0.0
  1.1.3.3(L)     3              20      LINK            0x130015
    
```



```

10.20.1.3/32      IA (HOST)      N (R)
  1.1.3.3        3              10      0.0.0.0
  1.1.2.2(L)     2              20      LINK          0x130016
10.20.1.4/32      IA (HOST)      N (R)
  1.1.2.2        2              20      0.0.0.0
  1.1.3.3(L)     3              30      LINK          0x130015
10.20.1.5/32      IA (HOST)      N (R)
  1.1.3.3        3              20      0.0.0.0
  1.1.2.2(L)     2              30      LINK          0x130016
10.20.1.3/0       IA (RTR)       N (N)
  1.1.3.3        3              10      0.0.0.0
10.20.1.4/0       IA (RTR)       N (N)
  1.1.2.2        2              20      0.0.0.0
10.20.1.5/0       IA (RTR)       N (N)
  1.1.3.3        3              20      0.0.0.0
10.20.1.6/0       IA (RTR)       N (N)
  1.1.3.3        3              30      0.0.0.0
  1.1.2.2        2              30      0.0.0.0
    
```

-----  
 19 OSPFv2 routes found (23 paths)  
 Flags: L = Loop-Free Alternate nexthop  
 =====

\*A:Dut-C# show router ospf 1 routes 10.0.0.2/32 detail

=====

Rtr Base OSPFv2 Instance 1 Routing Table (detail)

=====

Destination NHIP	Type(Dest) NHIF	Stat Cost[E2]	Area	Type	Weight:Cfg/Norm
10.0.0.2/32	E2 (HOST)	N (R)			
1.0.0.3	RSVP:94	9:10	0.0.0.0	Shortcut	40/20
1.0.0.3	RSVP:61442	9:10	0.0.0.0	Shortcut	2/ 1

-----

No. of routes found: 1 (2 paths)  
 Stat: D = direct N = not direct  
 (RTM stat):(R) = added (F) = add failed  
 (N) = not added (D) = policy discarded  
 =====

\*A:Dut-C>config>router>ospf3# show router ospf3 0 routes

=====

Rtr Base OSPFv3 Instance 0 Route Table

=====

Destination SID SID flags NHIP	Type(Dest) NHIF	Stat Cost[E2]
3ffe::100:900/120 DIRECT	IA (STUB) 4	D (F) 200
3ffe::100:b01/128 4 NnPA fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	IA (HOST) 2	N (R) 100
3ffe::100:c00/120 fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	IA (STUB) 2	N (R) 200
3ffe::100:d00/120 DIRECT	IA (STUB) 2	D (F) 100
3ffe::100:1602/128 5 NnPA fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	IA (HOST) 2	N (R) 200
3ffe::100:1800/120 fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	IE (NET) 2	N (R) 300
3ffe::100:1a00/120	IE (NET)	N (R)

fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	200
3ffe::100:2103/128	IA (HOST)	D (F)
0 NnPA		
DIRECT	5	0
3ffe::100:2400/120	IA (STUB)	D (F)
DIRECT	3	100
3ffe::100:2c04/128	IE (HOST)	N (R)
1 NnP		
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	300
3ffe::100:2d00/120	IE (NET)	N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	300
3ffe::100:3705/128	IE (HOST)	N (R)
2 NnP		
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	200
3ffe::100:3800/120	IE (NET)	N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	200
3ffe::100:4206/128	IA (HOST)	N (R)
3 NnPA		
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	100
3ffe::a14:101/128	IA (HOST)	N (R)
10 NnPA		
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	100
3ffe::a14:102/128	IE (HOST)	N (R)
11 NnPA		
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	200
3ffe::a14:103/128	IA (HOST)	D (F)
6 NnPA		
DIRECT	1	0
3ffe::a14:104/128	IE (HOST)	N (R)
7 NnP		
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	300
3ffe::a14:105/128	IE (HOST)	N (R)
8 NnP		
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	200
3ffe::a14:106/128	IE (HOST)	N (R)
9 NnPA		
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	100
3ffe::3300:b01/128	IA (HOST)	N (R)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	100
3ffe::3300:c00/120	IA (STUB)	N (R)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	200
3ffe::3300:d00/120	IA (STUB)	D (F)
DIRECT	2	100
3ffe::3300:1602/128	IA (HOST)	N (R)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	200
3ffe::3300:1800/120	IE (NET)	N (R)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	300
3ffe::3300:1a00/120	IE (NET)	N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	200
3ffe::3300:2103/128	IA (HOST)	D (F)
DIRECT	5	0
3ffe::3300:2400/120	IA (STUB)	D (F)
DIRECT	3	100
3ffe::3300:2c04/128	IE (HOST)	N (R)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"	2	300
3ffe::3300:2d00/120	IE (NET)	N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	300
3ffe::3300:3705/128	IE (HOST)	N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	200
3ffe::3300:3800/120	IE (NET)	N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	200
3ffe::3300:4206/128	IA (HOST)	N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"	3	100
3ffe::6800:1/128	E2 (HOST)	N (R)

```

fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"      2      300:1
3ffe::6900:1/128                          E2 (HOST)  N (R)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"    3      200:1
10.20.1.1/0                                IA (RTR)   N (N)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"    2      100
10.20.1.2/0                                IA (AB-AS) N (N)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"    2      200
10.20.1.4/0                                IE (ASBR)  N (N)
fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"    2      300
10.20.1.5/0                                IE (ASBR)  N (N)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"    3      200
10.20.1.6/0                                IA (AB-AS) N (N)
fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"    3      100
-----
No. of routes found: 40 (40 paths)
Stat: D = direct  N = not direct
(RTM stat):(R) = added      (F) = add failed
          (N) = not added  (D) = policy discarded
SID Flags : N = Node-SID
          nP = no penultimate hop POP
          M = Mapping server
          E = Explicit-Null
          V = Prefix-SID carries a value
          L = value/index has local significance
          I = Inter Area flag
          A = Attached flag
          B = Backup flag
=====

```

```

*A:Dut-C# show router ospf3 31 routes detail
=====
Rtr Base OSPFv3 Instance 31 Route Table (detail)
=====
Destination                                Type(Dest)  Stat
NHIP      NHIF      Cost[E2]  Area
-----
3ffe::10:10:2:0/120                       IA (NET)    D (F)
DIRECT                                     2          1000  0.0.0.0
3ffe::10:10:3:0/120                       IA (NET)    D (F)
DIRECT                                     3          1000  0.0.0.0
3ffe::10:10:4:0/120                       IA (NET)    N (R)
fe80::2052:1ff:fe01:3-"ip-10.10.3.3"      3          2000  0.0.0.0
3ffe::10:10:5:0/120                       IA (NET)    D (F)
DIRECT                                     4          1000  0.0.0.0
3ffe::10:10:6:0/120                       IA (NET)    N (R)
fe80::205e:1ff:fe01:1-"ip-10.10.5.3"      4          2000  0.0.0.0
3ffe::10:10:9:0/120                       IA (NET)    N (R)
10.20.1.4 (SC)                            RSVP:1      3000  0.0.0.0
3ffe::10:10:13:0/120                      IA (STUB)   N (R)
fe80::6628:1ff:fe01:2-"ip-10.10.2.3"      2          2000  0.0.0.0
3ffe::10:10:14:0/120                      IA (STUB)   N (R)
10.20.1.4 (SC)                            RSVP:1      4000  0.0.0.0
3ffe::10:20:1:1/128                       IA (HOST)   N (R)
fe80::6628:1ff:fe01:2-"ip-10.10.2.3"      2          1000  0.0.0.0
3ffe::10:20:1:2/128                       IA (HOST)   N (R)
fe80::2052:1ff:fe01:3-"ip-10.10.3.3"      3          1000  0.0.0.0
3ffe::10:20:1:3/128                       IA (HOST)   D (F)
DIRECT                                     1           0    0.0.0.0
3ffe::10:20:1:4/128                       IA (HOST)   N (R)
10.20.1.4 (SC)                            RSVP:1      2000  0.0.0.0
3ffe::10:20:1:5/128                       IA (HOST)   N (R)
fe80::205e:1ff:fe01:1-"ip-10.10.5.3"      4          1000  0.0.0.0
3ffe::10:20:1:6/128                       IA (HOST)   N (R)

```

```

10.20.1.4 (SC)          RSVP:1      3000      0.0.0.0
3ffe::100:100:100:4/128 IA (HOST)   N (R)
10.20.1.4 (SC)          RSVP:1      2000      0.0.0.0
3ffe::100:100:100:6/128 IA (HOST)   N (R)
10.20.1.4 (SC)          RSVP:1      3000      0.0.0.0
10.20.1.1/0            IA (RTR)    N (N)
fe80::6628:1ff:fe01:2-"ip-10.10.2.3" 2          1000      0.0.0.0
10.20.1.2/0            IA (RTR)    N (N)
fe80::2052:1ff:fe01:3-"ip-10.10.3.3" 3          1000      0.0.0.0
10.20.1.4/0            IA (RTR)    N (N)
10.20.1.4 (SC)          RSVP:1      2000      0.0.0.0
10.20.1.5/0            IA (RTR)    N (N)
fe80::205e:1ff:fe01:1-"ip-10.10.5.3" 4          1000      0.0.0.0
10.20.1.6/0            IA (RTR)    N (N)
10.20.1.4 (SC)          RSVP:1      3000      0.0.0.0
-----
No. of routes found: 21 (21 paths)
Stat: D = direct      N = not direct
(RTM stat):(R) = added      (F) = add failed
          (N) = not added  (D) = policy discarded
=====
*A:Dut-C#
*A:Dut-C# show router ospf3 20 status
=====
Rtr Base OSPFv3 Instance 20 Status
=====
OSPF Cfg Router Id       : 10.20.1.3
OSPF Oper Router Id     : 10.20.1.3
OSPF Version             : 3
OSPF Admin Status       : Enabled
OSPF Oper Status        : Enabled
Graceful Restart        : Disabled
GR Helper Mode          : Disabled
GR Strict LSA Checking   : Enabled (operational down)
Preference               : 10
External Preference     : 150
Backbone Router         : True
Area Border Router      : False
AS Border Router        : False
Traffic Engineering Support : False
Demand Exts Support     : False
In Overload State       : False
In External Overflow State : False
Exit Overflow Interval  : 0
Last Overflow Entered   : Never
Last Overflow Exit      : Never
External LSA Limit      : -1
Reference Bandwidth     : 100,000,000 Kbps
Init SPF Delay          : 1000 msec
Sec SPF Delay           : 1000 msec
Max SPF Delay           : 10000 msec
Min LS Arrival Interval : 1000 msec
Init LSA Gen Delay      : 5000 msec
Sec LSA Gen Delay       : 5000 msec
Max LSA Gen Delay       : 5000 msec
Lsa accumulate          : 1000 msec
Redistribute delay      : 1000 msec
Incremental SPF wait    : 1000 msec
Last Ext SPF Run        : Never
Ext LSA Cksum Sum       : 0x0
OSPF Last Enabled       : 10/10/2018 20:22:05
Unicast Import          : True
Multicast Import        : False
Export Policies         : None
    
```

```
Import Policies      : None
Lfa Policies        : None
OSPF Ldp Sync Admin Status : Enabled
LDP-over-RSVP      : Disabled
IGP-Shortcut       : Enabled
IPv6 IGP SC Tunn-Nhop : Res-Filter(RSVP)
Advertise-Tunnel-Link : Disabled
LFA                : Disabled
Remote-LFA         : Disabled
Max PQ Cost        : 65535
TI-LFA            : Disabled
Max SR FRR Labels  : 2
Export Limit       : 0
Export Limit Log Percent : 0
Total Exp Routes   : 0
RIB-priority-high prefix list: None
Segment Routing    : Disabled
Extended LSA       : sparse
=====
```

## 20.56 routing

### routing

#### Syntax

```
routing [sub-domain sub-domain] [bsl bsl] [neighbor-prefix ip-address] [dest-prefix ip-address]
```

#### Context

[\[Tree\]](#) (show>router>bier routing)

#### Full Context

```
show router bier routing
```

#### Description

This command shows the BIER routing table.

#### Parameters

##### ***sub-domain***

Specifies a sub-domain.

**Values** 0 to 255

##### ***bsl***

Specifies a bit string length.

**Values** 256 to 1024

##### ***ip-address***

Specifies a prefix in IP address format.

## Platforms

All

## Output

The following output is an example of a BIER router table. [Table 437: BIER Routing Fields](#) provides BIER routing field descriptions.

### Output Example

```
*A:Dut-A# show router bier routing sub-domain 0
=====
Destination Prefix                Bfr-ID    Age
Neighbor
Nexthop
Interface
-----
BIER Routing Database Sub-Domain 0 BSL 256
=====
10.20.1.2                        2         0d 23:05:23
  10.20.1.2
  10.180.1.2
  ip-10.180.1.1
10.20.1.3                        3         0d 23:05:20
  10.20.1.2
  10.180.1.2
  ip-10.180.1.1
10.20.1.4                        0         0d 23:05:20
  10.20.1.2
  10.180.1.2
  ip-10.180.1.1
10.20.1.5                        5         0d 23:05:16
  10.20.1.2
  10.180.1.2
  ip-10.180.1.1
10.20.1.6                        6         0d 23:05:16
  10.20.1.2
  10.180.1.2
  ip-10.180.1.1
=====
Total (Sub-Domain 0): 5
=====
Total BIER Routing entries : 5
=====
*A:Dut-A#
```

Table 437: BIER Routing Fields

Label	Description
Destination Prefix	The destination prefix
BFR-ID	The BFR ID

Label	Description
Age	The tunnel age
Neighbor	The neighbor IP address
Nexthop	The next-hop IP address
Interface	The egress interface name for the programmed tunnel

## 20.57 rp

```
rp
```

### Syntax

```
rp [family | ip-address]
```

### Context

[\[Tree\]](#) (show>router>pim rp)

### Full Context

```
show router pim rp
```

### Description

This command displays the rendezvous point (RP) set information built by the router.

### Parameters

#### *family*

Displays information about RP family.

**Values** ipv4, ipv6

#### *ip-address*

Specifies the IP address of the RP.

### Platforms

All

### Output

The following output is an example of a PIM RP configuration.

### Output Example

```
A:ALA-1# show router pim rp
```

```

PIM RP Set
=====
Group Address      RP Address      Type      Priority  Holdtime
-----
224.0.0.0/4       239.200.200.4  Dynamic   192      150
                  10.1.7.1       Static    1         N/A
-----
Group Prefixes : 1
=====
A:ALA-1#

A:ALA-1# show router pim rp 10.1.7.1
=====
PIM RP Set
=====
Group Address      RP Address      Type      Priority  Holdtime
-----
224.0.0.0/4       10.1.7.1       Static    1         N/A
-----
Group Prefixes : 1
=====
A:ALA-1#
    
```

Table 438: PIM RP Fields

Label	Description
Group Address	The multicast group address of the entry.
RP Address	The address of the Rendezvous Point (RP)
Type	Displays whether the entry was learned through the Bootstrap mechanism or if it was statically configured.
Priority	The priority for the specified group address. The higher the value, the higher the priority.
Holdtime	The value of the hold time present in the BSM message

## 20.58 rp-hash

### rp-hash

#### Syntax

`rp-hash ip-address`

#### Context

[\[Tree\]](#) (show>router>pim rp-hash)

#### Full Context

show router pim rp-hash



## Description

This command hashes the RP for the specified group from the RP set.

## Parameters

### *ip-address*

Displays specific multicast group addresses.

## Platforms

All

## Output

The following output is an example of a PIM RP-Hash configuration. [Table 439: RP-Hash Fields](#) provides RP-Hash output field descriptions.

### Output Example

```
A:ALA-1# show router pim rp-hash 239.101.0.0
=====
PIM Group-To-RP mapping
=====
Group Address      RP Address      Type
-----
239.101.0.0       239.200.200.4  Bootstrap
=====
A:ALA-1#

A:ALA-1# show router pim rp-hash 239.101.0.6
=====
PIM Group-To-RP mapping
=====
Group Address      RP Address      Type
-----
239.101.0.6       239.200.200.4  Bootstrap
=====
A:ALA-1#
```

Table 439: RP-Hash Fields

Label	Description
Group Address	The multicast group address of the entry
RP Address	The address of the Rendezvous Point (RP)
Type	Specifies whether the entry was learned through the Bootstrap mechanism or if it was statically configured.

## 20.59 rpk-session

### rpk-session

#### Syntax

**rpk-session** [*ip-address*] [**detail**]

#### Context

[\[Tree\]](#) (show>router>origin-validation rpk-session)

#### Full Context

show router origin-validation rpk-session

#### Description

This command displays RPKI session information.

#### Parameters

##### *ip-address*

Displays RPKI session information for the specified IP address.

##### Values

ipv4-address: a.b.c.d

ipv6-address x:x:x:x:x:x:x

x:x:x:x:x:d.d.d.d

where:

x: [0 to FFFF]H

d: [0 to 255]D

interface: 32 chars max, and mandatory for link local addresses.

##### **detail**

Displays the longer, more detailed version of the output.

#### Platforms

All

#### Output

The following output is an example of RPKI session information.

#### Output Example

```
A:Dut-C# show router origin-validation rpk-session detail
```

```
=====
RPKI Session Information
=====
IP Address       : 10.168.1.1
Description      : RPKI Server #1
-----
Port            : 323                Oper State      : established
Uptime         : 0d 00:57:41         Flaps           : 0
Active IPv4 Records: 17023           Active IPv6 Records: 2515
Admin State    : Up                  Local Address   : n/a
Admin State    : Up                  Local Address   : 10.0.2.2
Hold Time     : 120                  Refresh Time    : 60
Stale Route Time : 3600              Connect Retry   : 120
Serial ID     : 41690               Session ID     : 1452020198
=====
No. of Sessions : 1
=====
```

## 20.60 rs-fec

### rs-fec

#### Syntax

**rs-fec** [clear]

#### Context

[\[Tree\]](#) (tools>dump>port rs-fec)

#### Full Context

tools dump port rs-fec

#### Description

This command dumps the Reed-Solomon Forward Error Correction (RS-FEC) information for port.

#### Platforms

All

## 20.61 rsb

### rsb

#### Syntax

**rsb**

## Context

[\[Tree\]](#) (tools>dump>router>rsvp rsb)

## Full Context

tools dump router rsvp rsb

## Description

This command displays RSVP RSB information.

## Platforms

All

## Output

The following output is an example of MPLS RSVP RSB detail fields.

### Output Example

```
4)*A:Dut-A>config>router>mpls>lsp$ /tools dump router rsvp rsb detail
-----
RSB:
  EndPt 10.20.1.4  Tid 61441  XTid 10.20.1.1  Sndr 10.20.1.1  LspId 2  ifIndex 3  NHop
10.20.1.3
  Style FF, refresh in 0 secs
  RSVP NextHop 10.20.1.3, LIH 3 (TLV: RtrId 10.20.1.3 IntfId 2)
  CT Shared Reservation Info:
  No Reservation:
  FlowSpec :Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps)
             CBS 0, EBS 0, RSpecR 0, RSpecS 0 MTU 1500 MPU 20
  FwdFlowspec :Flags 0x0 QOSC 0, PDR (0.000 bps), PBS 0.000 bps, CDR (0.000 bps)
             CBS 0, EBS 0, RSpecR 0, RSpecS 0 MPU 0
  FilterSpec:
  Timeout in : 26 secs, LocLabel: 0  Sender: 10.20.1.1 lspId: 2 OutIfId: 0
  RR0 :
    (1) * Flags : 0x0 :      U
    (1) * UnInf : 10.20.1.3, 2
    (2) * Flags : 0x1 :      Global
    (2) * Label : 131070
    (3) * Flags : 0x0 :      U
    (3) * UnInf : 10.20.1.4, 5
    (4) * Flags : 0x1 :      Global
    (4) * Label : 131070
-----
RSB:
  EndPt 10.20.1.6  Tid 1  XTid 10.20.1.1  Sndr 0.0.0.0  LspId 0  ifIndex 2  NHop
10.20.1.2
  Style SE, refresh in 0 secs
  RSVP NextHop 10.20.1.2, LIH 2 (TLV: RtrId 10.20.1.2 IntfId 2)
  CT Shared Reservation Info:
  No Reservation:
  FlowSpec :Flags 0x8000 QOSC 1, PDR (infinity), PBS 0.000 bps, CDR (0.000 bps)
             CBS 0, EBS 0, RSpecR 0, RSpecS 0 MTU 1496 MPU 20
  FwdFlowspec :Flags 0x0 QOSC 0, PDR (0.000 bps), PBS 0.000 bps, CDR (0.000 bps)
             CBS 0, EBS 0, RSpecR 0, RSpecS 0 MPU 0
  FilterSpec:
  Timeout in : 21 secs, LocLabel: 0  Sender: 10.20.1.1 lspId: 30208 OutIfId: 0
  RR0 :
    (1) * Flags : 0x9 :      U LP_AVAIL NODE
```

```
(1) * UnInf : 10.20.1.2, 2
(2) * Flags : 0x1 :      Global
(2) * Label : 131071
(3) * Flags : 0x1 :      U LP_AVAIL
(3) * UnInf : 10.20.1.4, 2
(4) * Flags : 0x1 :      Global
(4) * Label : 131071
(5) * Flags : 0x0 :      U
(5) * UnInf : 10.20.1.6, 2
(6) * Flags : 0x1 :      Global
(6) * Label : 131071
```

```
-----
Total RSB Count   : 2
```

## 20.62 rsvp

### rsvp

#### Syntax

rsvp

#### Context

[\[Tree\]](#) (clear>router rsvp)

#### Full Context

clear router rsvp

#### Description

Commands in this context clear and reset RSVP protocol entities.

#### Platforms

All

### rsvp

#### Syntax

rsvp

#### Context

[\[Tree\]](#) (show>router rsvp)

#### Full Context

show router rsvp

## Description

Commands in this context display RSVP related information.

## Platforms

All

```
rsvp
```

## Syntax

```
rsvp
```

## Context

[\[Tree\]](#) (tools>dump>router rsvp)

## Full Context

```
tools dump router rsvp
```

## Description

Commands in this context dump tools for RSVP.

## Platforms

All

```
rsvp
```

## Syntax

```
rsvp
```

## Context

[\[Tree\]](#) (monitor>router rsvp)

## Full Context

```
monitor router rsvp
```

## Description

Commands in this context monitor RSVP instances.

## Platforms

All

## 20.63 rsvp-te

```
rsvp-te
```

### Syntax

```
rsvp-te
```

### Context

[\[Tree\]](#) (clear>router>mpls>lsp>auto-lsp rsvp-te)

### Full Context

```
clear router mpls lsp auto-lsp rsvp-te
```

### Description

This command resets and restarts all auto RSVP-TE LSPs.

### Platforms

All

```
rsvp-te
```

### Syntax

```
rsvp-te
```

### Context

[\[Tree\]](#) (clear>router>mpls>lsp rsvp-te)

### Full Context

```
clear router mpls lsp rsvp-te
```

### Description

This command resets and restarts all RSVP-TE LSPs.

### Platforms

All

## 20.64 rtp-session

### rtp-session

#### Syntax

```
rtp-session [service service-id] [source ip-address] [detail [stats {rt-server | fcc-server}]]  
rtp-session [service service-id] summary
```

#### Context

[\[Tree\]](#) (show>video rtp-session)

#### Full Context

```
show video rtp-session
```

#### Description

This command displays video session information.

#### Parameters

##### **service** *service-id*

Displays video session information pertaining to the specified service ID.

**Values** 1 to 2148278317  
svc-name — a string up to 64 characters.

##### **source** *ip-address*

Displays session information for the specified IP address.

##### **detail**

The output displays detailed video session information.

##### **stats**

Displays video session statistics.

**Values** **rt-server** — Displays video session statistics for the RT server.  
**fcc-server** — Displays video session statistics for the FCC server.

##### **summary**

The output displays summarized video session information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-s

#### Output

The following output is an example of this command.



### Output Example

```
*A:Dut-C# show video rtp-session
=====
Video RTP session
=====
Service Id      Source address  SSRC Id (hex)  RT reqs      FCC reqs
Interface       Source Port     Time to expire RT replies    FCC replies
-----
1               10.0.103.103   1              0            226
vi             1000           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1001           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1002           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1003           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1004           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1005           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1006           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1007           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1008           0d 00:03:24   0            225
1               10.0.103.103   1              0            226
vi             1009           0d 00:03:24   0            225
-----
Number of RTP sessions : 10
=====
*A:Dut-C#

*A:Dut-C# show video rtp-session summary
=====
Video RTP session summary
=====
Num Sessions      : 2000
Rx RT Requests    : 0
Tx RT Replies     : 0
Rx FCC Requests   : 371068
Tx FCC Replies    : 368259
Tx RT Packets     : 0
Tx RT Octets      : 0
Tx FCC Packets    : 243011904
Tx FCC Octets     : 14152149376
-----
Interfaces : 1
=====
*A:Dut-C#

*A:Dut-C# show video rtp-session detail
=====
Video RTP session detail
=====
Service Id       : 1
Interface        : vi
Source Address   : 10.0.103.103      Source Port      : 1000

Destination Addr : 10.3.3.3                SSRC Id (hex)   : 1
CName            : ixiaPort
Up Time          : 0d 00:07:08      Time to Expire  : 0d 00:04:59

Num RT Requests  : 0
RT Packets Sent  : 0
RT Failed Pkts   : 0
Num RT Replies   : 0
RT Octets Sent   : 0
Req RTP Packets  : 0
```

```
Num FCC Requests : 212          Num FCC Replies  : 211
FCC Packets Sent : 138582       FCC Octets Sent  : 8145140
FCC Failed Pkts  : 1
```

-----  
\*A:Dut-C#

## 20.65 rtr-advertisement

### rtr-advertisement

#### Syntax

**rtr-advertisement** [**interface** *interface-name*] [**prefix** *ipv6-prefix[/prefix-length]*]

**rtr-advertisement** [**conflicts**]

#### Context

[\[Tree\]](#) (show>router rtr-advertisement)

#### Full Context

show router rtr-advertisement

#### Description

This command displays router advertisement information.

If no command line arguments are specified, all routes are displayed, sorted by prefix.

#### Parameters

##### *interface-name*

Specifies the interface name, up to 32 characters.

##### *ipv6-prefix[/prefix-length]*

Displays routes only matching the specified *ip-address* and length and only applies to the 7750 SR and 7950 XRS.

##### Values

ipv6	ipv6-prefix[/pref*:	x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 to FFFF]H
		d: [0 to 255]D
	prefix-length:	1 to 128

## Platforms

All

## Output

**Router-Advertisement Table Output** — The following output is an example of a router advertisement information, and [Table 440: Router Advertisement Table Fields](#) describes the fields.

### Output Example

```

show router rtr-advertisement
=====
Router Advertisement
=====
-----
Interface: interfaceNetworkNonDefault
-----
Rtr Advertisement Tx : 8                Last Sent           : 00h01m28s
Nbr Solicitation Tx  : 83               Last Sent           : 00h00m17s
Nbr Advertisement Tx : 74               Last Sent           : 00h00m25s
Rtr Advertisement Rx : 8                Rtr Solicitation Rx : 0
Nbr Advertisement Rx : 83               Nbr Solicitation Rx : 74
-----
Server1              : 2001:db8::1
Server2              : N/A
Server3              : N/A
Server4              : N/A
Rdnss-lifetime       : 1200                Include-dns         : yes
-----
Max Advert Interval  : 601                Min Advert Interval : 201
Managed Config      : TRUE                  Other Config        : TRUE
Reachable Time       : 00h00m00s400ms       Router Lifetime     : 00h30m01s
Retransmit Time      : 00h00m00s400ms       Hop Limit           : 63
Link MTU              : 1500
-----
Prefix: 211::/120
Autonomous Flag      : FALSE                On-link flag        : FALSE
Preferred Lifetime   : 07d00h00m                Valid Lifetime      : 30d00h00m
-----
Prefix: 231::/120
Autonomous Flag      : FALSE                On-link flag        : FALSE
Preferred Lifetime   : 49710d06h                Valid Lifetime      : 49710d06h
-----
Prefix: 241::/120
Autonomous Flag      : TRUE                  On-link flag        : TRUE
Preferred Lifetime   : 00h00m00s                Valid Lifetime      : 00h00m00s
-----
Prefix: 251::/120
Autonomous Flag      : TRUE                  On-link flag        : TRUE
Preferred Lifetime   : 07d00h00m                Valid Lifetime      : 30d00h00m
-----
Advertisement from: fe80::200:ff:fe00:2
Managed Config      : FALSE                Other Config        : FALSE
Reachable Time       : 00h00m00s0ms       Router Lifetime     : 00h30m00s
Retransmit Time      : 00h00m00s0ms       Hop Limit           : 64
Link MTU              : 0
-----
Interface: interfaceServiceNonDefault
-----
Rtr Advertisement Tx : 8                Last Sent           : 00h06m41s
Nbr Solicitation Tx  : 166               Last Sent           : 00h00m04s
Nbr Advertisement Tx : 143               Last Sent           : 00h00m05s
Rtr Advertisement Rx : 8                Rtr Solicitation Rx : 0
  
```

```

Nbr Advertisement Rx : 166           Nbr Solicitation Rx : 143
-----
Max Advert Interval  : 601           Min Advert Interval  : 201
Managed Config      : TRUE           Other Config         : TRUE
Reachable Time       : 00h00m00s400ms Router Lifetime      : 00h30m01s
Retransmit Time      : 00h00m00s400ms Hop Limit            : 63
Link MTU             : 1500

Prefix: 23::/120
Autonomous Flag      : FALSE           On-link flag         : FALSE
Preferred Lifetime   : infinite        Valid Lifetime       : infinite

Prefix: 24::/120
Autonomous Flag      : TRUE           On-link flag         : TRUE
Preferred Lifetime   : 00h00m00s      Valid Lifetime       : 00h00m00s

Prefix: 25::/120
Autonomous Flag      : TRUE           On-link flag         : TRUE
Preferred Lifetime   : 07d00h00m       Valid Lifetime       : 30d00h00m
-----
Advertisement from: fe80::200:ff:fe00:2
Managed Config      : FALSE           Other Config         : FALSE
Reachable Time       : 00h00m00s0ms     Router Lifetime      : 00h30m00s
Retransmit Time      : 00h00m00s0ms     Hop Limit            : 64
Link MTU             : 0

Prefix: 2::/120
Autonomous Flag      : TRUE           On-link flag         : TRUE
Preferred Lifetime   : 07d00h00m       Valid Lifetime       : 30d00h00m

Prefix: 23::/120
Autonomous Flag      : TRUE           On-link flag         : TRUE
Preferred Lifetime   : 07d00h00m       Valid Lifetime       : 30d00h00m

Prefix: 24::/119
Autonomous Flag      : TRUE           On-link flag         : TRUE
Preferred Lifetime   : 07d00h00m       Valid Lifetime       : 30d00h00m

Prefix: 25::/120
Autonomous Flag      : TRUE           On-link flag         : TRUE
Preferred Lifetime   : 07d00h00m       Valid Lifetime       : infinite

Prefix: 231::/120
Autonomous Flag      : TRUE           On-link flag         : TRUE
Preferred Lifetime   : 07d00h00m       Valid Lifetime       : 30d00h00m
-----
...
    
```

Table 440: Router Advertisement Table Fields

Label	Description
Rtr Advertisement Tx/ Last Sent	The number of router advertisements sent and time since they were sent
Nbr Solicitation Tx	The number of neighbor solicitations sent and time since they were sent
Nbr Advertisement Tx	The number of neighbor advertisements sent and time since they were sent

Label	Description
Rtr Advertisement Rx	The number of router advertisements received and time since they were received
Nbr Advertisement Rx	The number of neighbor advertisements received and time since they were received
Max Advert Interval	The maximum interval between sending router advertisement messages
Managed Config	True — indicates that DHCPv6 has been configured
	False — indicates that DHCPv6 is not available for address configuration
Reachable Time	The time, in milliseconds, that a node assumes a neighbor is reachable after receiving a reachability confirmation
Retransmit Time	The time, in milliseconds, between retransmitted neighbor solicitation messages
Link MTU	The MTU number the nodes use for sending packets on the link
Rtr Solicitation Rx	The number of router solicitations received and time since they were received
Nbr Solicitation Rx	The number of neighbor solicitations received and time since they were received
Min Advert Interval	The minimum interval between sending ICMPv6 neighbor discovery router advertisement messages
Other Config	True — indicates there are other stateful configurations
	False — indicates there are no other stateful configurations
Router Lifetime	The router lifetime in seconds
Hop Limit	The current hop limit

**Router-Advertisement Conflicts Output** — The following output is an example of router advertisement conflicts, and [Table 441: Router-Advertisement Conflicts Fields](#) describes the fields.

### Output Example

```
show router rtr-advertisement conflicts
=====
Router Advertisement
=====
Interface: interfaceNetworkNonDefault
-----
Advertisement from: fe80::200:ff:fe00:2
Managed Config   : FALSE [TRUE]
Other Config      : FALSE [TRUE]
Reachable Time    : 00h00m00s0ms [00h00m00s400ms]
Router Lifetime   : 00h30m00s [00h30m01s]
```

```
Retransmit Time : 00h00m00s0ms [00h00m00s400ms]
Hop Limit       : 64 [63]
Link MTU        : 0 [1500]

Prefix not present in neighbor router advertisement
Prefix: 211::/120
Autonomous Flag : FALSE           On-link flag : FALSE
Preferred Lifetime : 07d00h00m    Valid Lifetime : 30d00h00m

Prefix not present in neighbor router advertisement
Prefix: 231::/120
Autonomous Flag : FALSE           On-link flag : FALSE
Preferred Lifetime : 49710d06h    Valid Lifetime : 49710d06h

Prefix not present in neighbor router advertisement
Prefix: 241::/120
Autonomous Flag : TRUE            On-link flag : TRUE
Preferred Lifetime : 00h00m00s    Valid Lifetime : 00h00m00s

Prefix not present in neighbor router advertisement
Prefix: 251::/120
Autonomous Flag : TRUE            On-link flag : TRUE
Preferred Lifetime : 07d00h00m    Valid Lifetime : 30d00h00m
-----
Interface: interfaceServiceNonDefault
-----
Advertisement from: fe80::200:ff:fe00:2
Managed Config : FALSE [TRUE]
Other Config    : FALSE [TRUE]
Reachable Time  : 00h00m00s0ms [00h00m00s400ms]
Router Lifetime : 00h30m00s [00h30m01s]
Retransmit Time : 00h00m00s0ms [00h00m00s400ms]
Hop Limit       : 64 [63]
Link MTU        : 0 [1500]

Prefix not present in own router advertisement
Prefix: 2::/120
Autonomous Flag : TRUE            On-link flag : TRUE
Preferred Lifetime : 07d00h00m    Valid Lifetime : 30d00h00m

Prefix: 23::/120
Autonomous Flag : TRUE [FALSE]
On-link flag    : TRUE [FALSE]
Preferred Lifetime: 07d00h00m [infinite]
Valid Lifetime  : 30d00h00m [infinite]

Prefix not present in own router advertisement
Prefix: 24::/119
Autonomous Flag : TRUE            On-link flag : TRUE
Preferred Lifetime : 07d00h00m    Valid Lifetime : 30d00h00m

Prefix not present in neighbor router advertisement
Prefix: 24::/120
Autonomous Flag : TRUE            On-link flag : TRUE
Preferred Lifetime : 00h00m00s    Valid Lifetime : 00h00m00s

Prefix: 25::/120
Valid Lifetime : infinite [30d00h00m]

Prefix not present in own router advertisement
Prefix: 231::/120
Autonomous Flag : TRUE            On-link flag : TRUE
Preferred Lifetime : 07d00h00m    Valid Lifetime : 30d00h00m
=====
```

Table 441: Router-Advertisement Conflicts Fields

Label	Description
Advertisement from	The address of the advertising router
Reachable Time	The time, in milliseconds, that a node assumes a neighbor is reachable after receiving a reachability confirmation
Router Lifetime	Displays the router lifetime in seconds
Retransmit Time	The time, in milliseconds, between retransmitted neighbor solicitation messages
Hop Limit	Displays the current hop limit
Link MTU	The MTU number the nodes use for sending packets on the link

The following output is an example of a router advertisement interface, and [Table 442: Router Advertisement Interface Table Fields](#) describes the fields.

**Output Example**

```
show router rtr-advertisement interface "MyExampleInterface"

=====
Router Advertisement
=====
Interface: MyExampleInterface
-----
Rtr Advertisement Tx : 0           Last Sent           : 00h00m00s
Nbr Solicitation Tx  : 0           Last Sent           : 00h00m00s
Nbr Advertisement Tx : 0           Last Sent           : 00h00m00s
Rtr Advertisement Rx : 0           Rtr Solicitation Rx : 0
Nbr Advertisement Rx : 0           Nbr Solicitation Rx : 0
-----
Max Advert Interval  : 600           Min Advert Interval : 200
Managed Config      : FALSE           Other Config         : FALSE
Reachable Time       : 00h00m00s0ms    Router Lifetime      : 00h30m00s
Retransmit Time      : 00h00m00s0ms    Hop Limit            : 64
Link MTU              : 0             ND Router-preference: <high|medium|low>
MAC Addr To Use      : Interface
Creation Origin       : manual
No Prefixes
=====
```

Table 442: Router Advertisement Interface Table Fields

Label	Description
Rtr Advertisement Tx/ Last Sent	The number of router advertisements sent and time since they were sent
Nbr Solicitation Tx/ Last Sent	The number of neighbor solicitations sent and time since they were sent

Label	Description
Nbr Advertisement Tx/ Last Sent	The number of neighbor advertisements sent and time since they were sent
Rtr Advertisement Rx	The number of router advertisements received and time since they were received
Rtr Solicitation Rx	The number of router solicitations received and time since they were received
Nbr Advertisement Rx	The number of neighbor advertisements received and time since they were received
Nbr Solicitation Rx	The number of neighbor solicitations received and time since they were received
Max Advert Interval	The maximum interval between sending router advertisement messages
Min Advert Interval	The minimum interval between sending ICMPv6 neighbor discovery router advertisement messages
Managed Config	True — indicates that DHCPv6 has been configured
	False — indicates that DHCPv6 is not available for address configuration
Other Config	True — indicates there are other stateful configurations
	False — indicates there are no other stateful configurations
Reachable Time	The time, in milliseconds, that a node assumes a neighbor is reachable after receiving a reachability confirmation
Router Lifetime	The router lifetime in seconds
Retransmit Time	The time, in milliseconds, between retransmitted neighbor solicitation messages
Hop Limit	The current hop limit
Link MTU	The MTU number the nodes use for sending packets on the link
ND Router-preference	High — indicates the router advertises a high router default gateway preference
	Medium — indicates the router advertises a medium default gateway preference
	Low — indicates the router advertises a low default gateway preference
MAC Addr to Use	The MAC address to use
Creation Origin	The creation origin



## 20.66 run-manual-spf

### run-manual-spf

#### Syntax

**run-manual-spf**

#### Context

[\[Tree\]](#) (tools>perform>router>isis run-manual-spf)

#### Full Context

tools perform router isis run-manual-spf

#### Description

This command runs the Shortest Path First (SPF) algorithm.

#### Platforms

All

### run-manual-spf

#### Syntax

**run-manual-spf [externals-only]**

#### Context

[\[Tree\]](#) (tools>perform>router>ospf run-manual-spf)

[\[Tree\]](#) (tools>perform>router>ospf3 run-manual-spf)

#### Full Context

tools perform router ospf run-manual-spf

tools perform router ospf3 run-manual-spf

#### Description

This command runs the Shorted Path First (SPF) algorithm.

#### Parameters

**externals-only**

Runs external only SPF.

## Platforms

All

## 21 s Commands – Part I

### 21.1 s-pmsi

#### s-pmsi

##### Syntax

**s-pmsi** [[**group-ip** *group-ip*][**source-ip** *source-ip*] **detail**]

**s-pmsi** [*mdSrcAddr* [**mdGrpAddr**]] [[**group-ip** *group-ip*] [**source-ip** *source-ip*] **detail**]

**s-pmsi** **ext-tunnel-id** *ext-tunnel-id* [**tunnel-id** *tunnel-id*] [[**group-ip** *group-ip*] [**source-ip** *source-ip*] **detail**]

**s-pmsi** **root-addr** *root-addr* [**lsp-id** *lsp-id*] [[**group-ip** *group-ip*] [**source-ip** *source-ip*] **detail**]

**s-pmsi** **bier-root-addr** *ip-address* [[**sub-domain** *sub-domain*] [**bfr-id** *bfr-id*] [**mpls-lbl** *mpls-lbl*] **detail**]

##### Context

[\[Tree\]](#) (show>router>pim s-pmsi)

##### Full Context

show router pim s-pmsi

##### Description

This command displays information about selective provider multicast service interfaces that are currently active.

##### Parameters

###### **group-ip**

Displays group IP address information.

###### **source-ip**

Displays source IP address information.

###### **mdSrcAddr**

Displays source address information of the multicast sender.

###### **mdGrpAddr**

Displays group address information of the multicast sender.

###### **ext-tunnel-id**

Displays information about the extended tunnel address.

###### **tunnel-id**

Displays information about the tunnel identifier.

**Values** 0 to 4294967295

**root-addr**

Displays information about the root address.

**isp-id**

Displays information about the specified LSP ID.

**Values** 0 to 4294967295

**sub-domain**

Displays information about the BIER sub-domain ID.

**bfr-id**

Displays information about the BIER-ID of the router.

**Values** 1 to 4096

**mpls-lbl**

Displays information about the specified MPLS service label.

**detail**

Displays detailed output.

**Platforms**

All

**Output**

The following output is an example of a PIM data MDT configuration. [Table 443: PIM Data MDT](#) provides PIM data MDT descriptions.

**Output Example PIM Selective Provider Tunnel**

```
*B:node-6# show router 100 pim s-pmsi
=====
PIM Selective provider tunnels
=====
MD Src Address      MD Grp Address      MT Index      Num VPN SGs
-----
239.200.200.7      239.0.89.72         24603         1
239.200.200.7      239.0.89.73         24604         1
239.200.200.7      239.0.89.74         24605         1
239.200.200.7      239.0.89.75         24606         1
239.200.200.7      239.0.89.76         24607         1
239.200.200.7      239.0.89.77         24608         1
239.200.200.7      239.0.89.78         24609         1
239.200.200.7      239.0.89.79         24610         1
239.200.200.7      239.0.89.80         24611         1
239.200.200.7      239.0.89.81         24612         1
239.200.200.7      239.0.89.82         24613         1
239.200.200.7      239.0.89.83         24614         1
239.200.200.7      239.0.89.84         24615         1
239.200.200.7      239.0.89.85         24616         1
239.200.200.7      239.0.89.86         24617         1
239.200.200.7      239.0.89.87         24618         1
...
=====
```

\*B:node-6#

### Output Example PIM Selective Provider Tunnel Detail

```
*B:node-6# show router 100 pim s-pmsi detail
```

```
=====
PIM Selective provider tunnels
=====
```

```
Md Source Address : 239.200.200.7      Md Group Address : 239.0.89.72
Number of VPN SGs : 1                  Uptime           : 0d 00:00:18
MT IfIndex        : 24603               Egress Fwding Rate : 163.2 kbps
```

```
VPN Group Address : 239.1.0.0          VPN Source Address : 10.2.102.1
State             : RX Joined
Expiry Timer      : 0d 00:02:41
```

```
=====
PIM Selective provider tunnels
=====
```

```
Md Source Address : 239.200.200.7      Md Group Address : 239.0.89.73
Number of VPN SGs : 1                  Uptime           : 0d 00:00:18
MT IfIndex        : 24604               Egress Fwding Rate : 163.2 kbps
```

```
VPN Group Address : 239.1.0.1          VPN Source Address : 10.2.102.1
State             : RX Joined
Expiry Timer      : 0d 00:02:41
```

```
=====
PIM Selective provider tunnels
=====
```

```
Md Source Address : 239.200.200.7      Md Group Address : 239.0.89.74
Number of VPN SGs : 1                  Uptime           : 0d 00:00:20
MT IfIndex        : 24605               Egress Fwding Rate : 165.7 kbps
```

```
VPN Group Address : 239.1.0.2          VPN Source Address : 10.2.102.1
State             : RX Joined
Expiry Timer      : 0d 00:02:39
```

```
=====
PIM Selective provider tunnels
=====
```

```
Md Source Address : 239.200.200.7      Md Group Address : 239.0.89.75
Number of VPN SGs : 1                  Uptime           : 0d 00:00:20
MT IfIndex        : 24606               Egress Fwding Rate : 165.7 kbps
```

```
VPN Group Address : 239.1.0.3          VPN Source Address : 10.2.102.1
State             : RX Joined
Expiry Timer      : 0d 00:02:39
```

```
*B:node-6#
```

### Output Example for Rosen MVPN S-PMSI Tunnel

```
B:Dut-E# show router 100 pim s-pmsi
```

```
=====
PIM Selective provider tunnels
=====
```

MD Src Address MD Grp Address	MT Index Multistream ID	Num VPN SGs	MD RP for ASM	State
10.20.1.5 233.0.0.5	5798467 5	1	N/A	TX Joined
10.20.1.5 233.0.0.6	5798468 6	1	N/A	TX Joined
10.20.1.5	5798469	1	N/A	TX Joined

```

    233.0.0.7          7
    10.20.1.5         5798470          1021          N/A          TX Joined
    233.0.0.8          8
    =====
    PIM Selective provider tunnels Interfaces : 4
    
```

### Output Example RX Tracking for RSVP S-PMSI Tunnel

```

*A:Dut-C# show router 1 pim s-pmsi
=====
PIM RSVP Spmsi tunnels
=====
P2mp ID   Tunnel ID   Ext Tunnel Adrs      SPMSI Index   Num VPN   State
          SGs
-----
0         0          10.20.1.4           1030144       1         RX Tracking
0         0          10.20.1.4           1030144       1         RX Tracking
=====
PIM RSVP Spmsi Interfaces : 2
=====
*A:Dut-C# show router 21 pim s-pmsi
=====
PIM LDP Spmsi tunnels
=====
Lsp ID    Root Addr      SPMSI Index   Num VPN   State
          SGs
-----
0         10.20.1.4     1030144       1         RX Tracking
0         10.20.1.4     1030144       1         RX Tracking
=====
PIM LDP Spmsi Interfaces : 2
=====
*A:Dut-C#
    
```

### Output Example RX Tracking for RSVP S-PMSI Tunnel Detail

```

*A:Dut-C# show router 1 pim s-pmsi detail
=====
PIM RSVP Spmsi tunnels
=====
P2MP ID      : 0          Tunnel ID      : 0
Ext Tunnel Adrs : 10.20.1.4   Spmsi IfIndex  : 1030144
Number of VPN SGs : 1          Uptime         : 0d 00:02:48

VPN Group Address : 239.100.0.0
VPN Source Address : 10.1.101.2
State             : RX Tracking   Mdt Threshold  : 0
=====
PIM RSVP Spmsi tunnels
=====
P2MP ID      : 0          Tunnel ID      : 0
Ext Tunnel Adrs : 10.20.1.4   Spmsi IfIndex  : 1030144
Number of VPN SGs : 1          Uptime         : 0d 00:02:47

VPN Group Address : ff0e:db8:225:100::
VPN Source Address : 2001:db8:1:101::2
State             : RX Tracking   Mdt Threshold  : 0
=====
PIM RSVP Spmsi Interfaces : 2
=====
*A:Dut-C#
    
```

```
*A:Dut-C# show router 21 pim s-pmsi detail
=====
PIM LDP Spmsi tunnels
=====
LSP ID          : 0
Root Addr       : 10.20.1.4          Spmsi IfIndex   : 1030144
Number of VPN SGs : 1              Uptime         : 0d 00:03:35

VPN Group Address : 239.100.0.0
VPN Source Address : 10.1.101.2
State            : RX Tracking      Mdt Threshold   : 0

=====
PIM LDP Spmsi tunnels
=====
LSP ID          : 0
Root Addr       : 10.20.1.4          Spmsi IfIndex   : 1030144
Number of VPN SGs : 1              Uptime         : 0d 00:03:34

VPN Group Address : ff0e:db8:225:100::
VPN Source Address : 2001:db8:1:101::2
State            : RX Tracking      Mdt Threshold   : 0

=====
PIM LDP Spmsi Interfaces : 2
=====
*A:Dut-C#
```

### Output Example TX Tracking for RSVP S-PMSI Tunnel Detail

```
*A:Dut-C# show router 1 pim s-pmsi detail
=====
PIM RSVP Spmsi tunnels
=====
P2MP ID        : 1          Tunnel ID       : 61442
Ext Tunnel Addr : 10.20.1.4   Spmsi IfIndex  : 74230
Number of VPN SGs : 1      Uptime        : 0d 00:05:11

VPN Group Address : 239.100.0.0
VPN Source Address : 10.1.101.2
State            : TX Join Pending  Mdt Threshold   : 1
Join Timer       : N/A           Holddown Timer  : 0d 00:00:47
Receiver Count   : 4

=====
PIM RSVP Spmsi tunnels
=====
P2MP ID        : 1          Tunnel ID       : 61443
Ext Tunnel Addr : 10.20.1.4   Spmsi IfIndex  : 74231
Number of VPN SGs : 1      Uptime        : 0d 00:05:10

VPN Group Address : ff0e:225:100::
VPN Source Address : 2001:db8:1:101::2
State            : TX Join Pending  Mdt Threshold   : 1
Join Timer       : N/A           Holddown Timer  : 0d 00:00:50
Receiver Count   : 4

=====
PIM RSVP Spmsi Interfaces : 2
=====
*A:Dut-C#

*A:Dut-D# show router 21 pim s-pmsi detail
=====
```

```

PIM LDP Spmsi tunnels
=====
LSP ID          : 8194
Root Addr       : 10.20.1.4          Spmsi IfIndex   : 74228
Number of VPN SGs : 1              Uptime         : 0d 00:05:56

VPN Group Address : 239.100.0.0
VPN Source Address : 10.1.101.2
State            : TX Join Pending   Mdt Threshold   : 1
Join Timer       : N/A              Holddown Timer  : 0d 00:00:02
Receiver Count   : 4

=====
PIM LDP Spmsi tunnels
=====
LSP ID          : 8195
Root Addr       : 10.20.1.4          Spmsi IfIndex   : 74229
Number of VPN SGs : 1              Uptime         : 0d 00:05:55

VPN Group Address : ff0e:db8:225:100::
VPN Source Address : 2001:db8:1:101::2
State            : TX Join Pending   Mdt Threshold   : 1
Join Timer       : N/A              Holddown Timer  : 0d 00:00:05
Receiver Count   : 4

=====
PIM LDP Spmsi Interfaces : 2
=====
*A:Dut-D#
    
```

Table 443: PIM Data MDT

Label	Description
MD Grp Address	The IP multicast group address for which this entry contains information
MD Src Address	The source address of the multicast sender. The value is 0 if the type is configured as <b>starg</b> . The address of the Rendezvous Point (RP) displays if the type is configured as <b>starRP</b> .
MT Index	The index number
Num VP SGs	The VPN number

## s-pmsi

### Syntax

**s-pmsi** [**source** *mdSrcAddr*] [**group** *mdGrpAddr*] [**vprn-source** *vprnSrcAddr* **vprn-group** *vprnGrpAddr*]

### Context

**[Tree]** (clear>router>pim s-pmsi)

### Full Context

clear router pim s-pmsi



## Description

This command clears PIM selective provider multicast service interface cache.

## Parameters

### *mdSrcAddr*

Clears the specified source address used for Multicast Distribution Tree (MDT).

### *mdGrpAddr*

Clears the specified group address used for Multicast Distribution Tree (MDT).

### *vprnSrcAddr*

Clears the specified source address of the multicast sender.

### *vprnGrpAddr*

Clears the specified multicast group address.

## Platforms

All

## 21.2 s11

s11

## Syntax

s11

## Context

[\[Tree\]](#) (show>subscr-mgmt>gtp s11)

## Full Context

show subscriber-mgmt gtp s11

## Description

Commands in this context display information related to established S11 connections.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

s11

## Syntax

s11

## Context

[\[Tree\]](#) (show>router>gtp s11)

## Full Context

```
show router gtp s11
```

## Description

Commands in this context display S11 information.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 21.3 saa

### saa

## Syntax

```
saa [test-name] [owner test-owner]
```

## Context

[\[Tree\]](#) (show saa)

## Full Context

```
show saa
```

## Description

This command displays information about the SAA test.

If no specific test is specified a summary of all configured tests is displayed.

If a specific test is specified then detailed test results for that test are displayed for the last three occurrences that this test has been executed, or since the last time the counters have been reset via a system reboot or clear command.

## Parameters

### *test-name*

Specifies the optional parameter is used to enter the name of the SAA test for which the information needs to be displayed. The test name must already be configured in the **config>saa>test** context.

### *test-owner*

Specifies the owner of an SAA operation, up to 32 characters. If a **test-owner** value is not specified, tests created by the CLI have a default owner "TIMOS CLI".

**Default** "TIMOS CLI"

## Platforms

All

## Output

The following output is an example of SAA test information. [Table 444: SAA Field Descriptions](#) describes the SAA test fields.

### Output Example

```
*A:bksim130>config>saa>test>trap-gen# show saa mySaaPingTest1
=====
SAA Test Information
=====
Test name           : mySaaPingTest1
Owner name          : TiMOS CLI
Description         : N/A
Accounting policy   : None
Administrative status : Disabled
Test type           : icmp-ping 11.22.33.44
Trap generation     : probe-fail-enable probe-fail-threshold 3
                   : test-fail-enable test-fail-threshold 2
                   : test-completion-enable
Test runs since last clear : 0
Number of failed test runs : 0
Last test result    : Undetermined
-----
Threshold
Type      Direction Threshold Value      Last Event      Run #
-----
Jitter-in Rising      None      None      Never           None
          Falling    None      None      Never           None
Jitter-out Rising      None      None      Never           None
          Falling    None      None      Never           None
Jitter-rt  Rising      None      None      Never           None
          Falling    None      None      Never           None
Latency-in Rising      None      None      Never           None
          Falling    None      None      Never           None
Latency-out Rising      None      None      Never           None
          Falling    None      None      Never           None
Latency-rt Rising      None      None      Never           None
          Falling    None      None      Never           None
Loss-in    Rising      None      None      Never           None
          Falling    None      None      Never           None
Loss-out   Rising      None      None      Never           None
          Falling    None      None      Never           None
Loss-rt    Rising      None      None      Never           None
          Falling    None      None      Never           None
=====
*A:bksim130>config>saa>test>trap-gen#

*A:bksim130>config>saa>test>trap-gen$ show saa mySaaTraceRouteTest1
=====
SAA Test Information
=====
Test name           : mySaaTraceRouteTest1
Owner name          : TiMOS CLI
```

```

Description                : N/A
Accounting policy          : None
Administrative status      : Disabled
Test type                  : icmp-trace 11.22.33.44
Trap generation            : test-fail-enable test-completion-enable
Test runs since last clear : 0
Number of failed test runs : 0
Last test result           : Undetermined
-----
Threshold
Type      Direction Threshold Value      Last Event      Run #
-----
Jitter-in Rising      None      None      Never          None
           Falling     None      None      Never          None
Jitter-out Rising      None      None      Never          None
           Falling     None      None      Never          None
Jitter-rt  Rising      None      None      Never          None
           Falling     None      None      Never          None
Latency-in Rising      None      None      Never          None
           Falling     None      None      Never          None
Latency-out Rising      None      None      Never          None
           Falling     None      None      Never          None
Latency-rt Rising      None      None      Never          None
           Falling     None      None      Never          None
Loss-in    Rising      None      None      Never          None
           Falling     None      None      Never          None
Loss-out   Rising      None      None      Never          None
           Falling     None      None      Never          None
Loss-rt    Rising      None      None      Never          None
           Falling     None      None      Never          None
=====
*A:bksim130>config>saa>test>trap-gen$

show saa <test-name>
CFM Loopback:
=====
SAA Test Information
=====
Test name : CFMLoopbackTest
Owner name       : TiMOS CLI
Description      : N/A
Accounting policy : 1
Continuous       : Yes
Administrative status : Enabled
Test type        : eth-cfm-
loopback 00:01:01:01:01:01 mep 1 domain 1 association 1 interval 1 count 10
Trap generation  : None
Test runs since last clear : 1
Number of failed test runs : 0
Last test result : Success
-----
Threshold
Type      Direction Threshold Value      Last Event      Run #
-----
Jitter-in Rising      None      None      Never          None
           Falling     None      None      Never          None
Jitter-out Rising      None      None      Never          None
           Falling     None      None      Never          None
Jitter-rt  Rising      None      None      Never          None
           Falling     None      None      Never          None
Latency-in Rising      None      None      Never          None
           Falling     None      None      Never          None
Latency-out Rising      None      None      Never          None
    
```

```

Latency-rt      Falling  None      None      Never      None
                Rising   None      None      Never      None
                Falling  None      None      Never      None
Loss-in         Rising   None      None      Never      None
                Falling  None      None      Never      None
Loss-out        Rising   None      None      Never      None
                Falling  None      None      Never      None
Loss-rt         Rising   None      None      Never      None
                Falling  None      None      Never      None
=====
Test Run: 1
Total number of attempts: 10
Number of requests that failed to be sent out: 0
Number of responses that were received: 10
Number of requests that did not receive any response: 0
Total number of failures: 0, Percentage: 0
(in us)          Min      Max      Average   Jitter
Outbound  :      0.000    0.000    0.000     0
Inbound   :      0.000    0.000    0.000     0
Roundtrip :     10200    10300    10250    100

Per test packet:
Sequence  Result          Delay(us)
1         Response Received  10300
2         Response Received  10300
3         Response Received  10300
4         Response Received  10200
5         Response Received  10300
6         Response Received  10200
7         Response Received  10300
8         Response Received  10200
9         Response Received  10300
10        Response Received  10300
=====
CFM Traceroute:
=====
SAA Test Information
=====
Test name           : CFMLinkTraceTest
Owner name          : TiMOS CLI
Description         : N/A
Accounting policy   : None
Continuous         : Yes
Administrative status : Enabled
Test type           : eth-cfm-
linktrace 8A:DB:01:01:00:02 mep 1 domain 1 association 1 interval 1
Trap generation     : None
Test runs since last clear : 1
Number of failed test runs : 0
Last test result    : Success
-----
Threshold
Type      Direction Threshold Value      Last Event      Run #
-----
Jitter-in Rising     None      None      Never          None
          Falling   None      None      Never          None
Jitter-out Rising     None      None      Never          None
          Falling   None      None      Never          None
Jitter-rt  Rising     None      None      Never          None
          Falling   None      None      Never          None
Latency-in Rising     None      None      Never          None
          Falling   None      None      Never          None
Latency-out Rising     None      None      Never          None
          Falling   None      None      Never          None
    
```

Latency-rt	Rising	None	None	Never	None
	Falling	None	None	Never	None
Loss-in	Rising	None	None	Never	None
	Falling	None	None	Never	None
Loss-out	Rising	None	None	Never	None
	Falling	None	None	Never	None
Loss-rt	Rising	None	None	Never	None
	Falling	None	None	Never	None

```

=====
Test Run: 1
HopIdx: 1
Total number of attempts: 3
Number of requests that failed to be sent out: 0
Number of responses that were received: 3
Number of requests that did not receive any response: 0
Total number of failures: 0, Percentage: 0
    
```

(in ms)	Min	Max	Average	Jitter
Outbound :	0.000	0.000	0.000	0.000
Inbound :	0.000	0.000	0.000	0.000
Roundtrip :	2.86	3.67	3.15	0.047

Per test packet:

Sequence	Outbound	Inbound	RoundTrip	Result
1	0.000	0.000	3.67	Response Received
2	0.000	0.000	2.92	Response Received
3	0.000	0.000	2.86	Response Received

```

HopIdx: 2
Total number of attempts: 3
Number of requests that failed to be sent out: 0
Number of responses that were received: 3
Number of requests that did not receive any response: 0
Total number of failures: 0, Percentage: 0
    
```

(in ms)	Min	Max	Average	Jitter
Outbound :	0.000	0.000	0.000	0.000
Inbound :	0.000	0.000	0.000	0.000
Roundtrip :	4.07	4.13	4.10	0.005

Per test packet:

Sequence	Outbound	Inbound	RoundTrip	Result
1	0.000	0.000	4.10	Response Received
2	0.000	0.000	4.13	Response Received
3	0.000	0.000	4.07	Response Received

CFM Two Way Delay Measurement:

SAA Test Information

```

=====
Test name           : CFMTwoWayDelayTest
Owner name          : TiMOS CLI
Description         : N/A
Accounting policy   : None
Continuous          : Yes
Administrative status : Enabled
Test type           : eth-cfm-two-way-
delay 00:01:01:01:01 mep 1 domain 1 association 1 interval 1
Trap generation     : None
Test runs since last clear : 1
Number of failed test runs : 0
Last test result    : Success
    
```

Threshold Type	Direction	Threshold	Value	Last Event	Run #
Jitter-in	Rising	None	None	Never	None
	Falling	None	None	Never	None

```

Jitter-out  Rising  None    None    Never   None
             Falling None    None    Never   None
Jitter-rt   Rising  None    None    Never   None
             Falling None    None    Never   None
Latency-in  Rising  None    None    Never   None
             Falling None    None    Never   None
Latency-out Rising  None    None    Never   None
             Falling None    None    Never   None
Latency-rt  Rising  None    None    Never   None
             Falling None    None    Never   None
Loss-in     Rising  None    None    Never   None
             Falling None    None    Never   None
Loss-out    Rising  None    None    Never   None
             Falling None    None    Never   None
Loss-rt     Rising  None    None    Never   None
             Falling None    None    Never   None
...
=====
Test Run: 1
HopIdx: 1
Total number of attempts: 3
Number of requests that failed to be sent out: 0
Number of responses that were received: 3
Number of requests that did not receive any response: 0
Total number of failures: 0, Percentage: 0
Total number of failures: 0, Percentage: 0
(in us)      Min      Max      Average   Jitter
Outbound   :    5095    5095    5095      0
Inbound    :    5095    5095    0.000     0
Roundtrip  :   10190   10190   10190     0
Per test packet:
Sequence  (in us) Outbound  Inbound  Delay  Delay variation
1         5195    5195    10190    0
2         5195    5195    10190    0
3         5195    5195    10190    0
...
=====
    
```

Table 444: SAA Field Descriptions

Label	Description
Test Name	Specifies the name of the test.
Owner Name	Specifies the owner of the test.
Description	Specifies the description for the test type.
Accounting policy	Specifies the associated accounting policy ID.
Administrative status	Specifies whether the administrative status is enabled or disabled.
Test type	Specifies the type of test configured.
Trap generation	Specifies the trap generation for the SAA test.
Test runs since last clear	Specifies the total number of tests performed since the last time the tests were cleared.

Label	Description
Number of failed tests run	Specifies the total number of tests that failed.
Last test run	Specifies the last time a test was run.
Threshold type	Indicates the type of threshold event being tested, jitter-event, latency-event, or loss-event, and the direction of the test responses received for a test run:  in — inbound out — outbound rt — roundtrip
Direction	Indicates the direction of the event threshold, rising or falling.
Threshold	Displays the configured threshold value.
Value	Displays the measured crossing value that triggered the threshold crossing event.
Last event	Indicates the time that the threshold crossing event occurred.
Run #	Indicates what test run produced the specified values.

## saa

### Syntax

**saa-test** [*test-name* [**owner** *test-owner*]]

### Context

**[Tree]** (clear saa)

### Full Context

clear saa

### Description

This command clears the SAA results for the latest and the history for this test. If the test name is omitted, all the results for all tests are cleared.

### Parameters

#### **test-name**

Specifies the name of the SAA test. The test name must already be configured in the **config>saa>test** context.

#### **test-owner**

Specifies the owner of an SAA operation up to 32 characters.



**Default** If a **test-owner** value is not specified, tests created by the CLI have a default owner "TiMOS CLI".

## Platforms

All

## 21.4 saii-type2-using

### saii-type2-using

#### Syntax

```
saii-type2-using global-id[:prefix[:ac-id]]
```

#### Context

[\[Tree\]](#) (show>service saii-type2-using)

#### Full Context

```
show service saii-type2-using
```

#### Description

This command displays the SDP used by a spoke SDP FEC with a specified FEC129 Type 2 SAIL.

#### Parameters

***global-id[:prefix[:ac-id]]***

Specifies the switch-point information using SAIL-Type2.

Values	<global-id[:prefix*>	: <global-id>[:<prefix>[:<ac-id>]]
	global-id	1 to 4294967295
	prefix	a.b.c.d   1 to 4294967295
	ac-id	1 to 4294967295

## Platforms

All

## Output

The following output is an example of SAIL information.

### Output Example

```
*A:Dut-E# show service saii-type2-using 3:10.20.1.3:1
=====
```

```
Service Switch-Point Information
=====
SvcId      Oper-SdpBind      SAII-Type2
-----
2147483598 17407:4294967195 3:10.20.1.3:1
-----
Entries found: 1
=====
```

## 21.5 sap

sap

### Syntax

**sap** {all | *sap-id*}

### Context

[\[Tree\]](#) (show>subscr-mgmt>errors sap)

### Full Context

show subscriber-mgmt errors sap

### Description

This command sorts all the subscriber errors by SAP.

### Parameters

**all**

Shows all errors starting with the lowest SAP index.

***sap-id***

Shows only the error of a specific SAP index.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of subscriber management errors listed by SAP.

### Output Example

```
A:BNG-2# show subscriber-mgmt errors sap all
=====
Subscriber management errors
=====
SAP      : 1/1/20:841
-----
```

```

Time      : 2016/06/23 17:35:46.0
Service   : 1000
MAC       : 00:00:10:10:12:13
Error     : No Offer from DHCP server after Discover from DHCP client
Extra     : DHCPv4
Time      : 2016/06/23 17:35:16.0
Service   : 1000
MAC       : 00:00:10:10:12:13
Error     : No Offer from DHCP server after Discover from DHCP client
Extra     : DHCPv4
=====
    
```

[Table 445: Subscriber Management SAP Error Field Descriptions](#) describes subscriber management SAP error output fields.

*Table 445: Subscriber Management SAP Error Field Descriptions*

Field	Description
SAP	The SAP ID associated with the error
Time	The time this error was reported to the subscriber management errors subsystem
Service	The service ID associated with the error
MAC	The MAC address associated with the error
Error	The error that occurred on the SAP
Extra	Extra information about the error that occurred

## sap

### Syntax

**sap** *sap-id* **static-isids** [*range-id range-id*]

**sap** *sap-id* **dist-cpu-protection** [*detail*]

**sap** *sap-id* **detail**

**sap** *sap-id* **encap-group** *group-name* [*member encap-id*] [*encap-detail* | *encap-stats*]

**sap** *sap-id* **encap-group**

**sap** *sap-id* [ *base* | *dhcp* | *mc-ring* | *mcac* | *mrp* | *qos* | *sap-stats* | *stats* | *stp* | *sub-mgmt* | *ipsec-gw*]

**sap** *sap-id* [*circuit-id circuit-id*] [*mac ieee-address*] [*remote-id remote-id*] **host-lockout-policy** [*summary*]

**sap** **queue-depth** [*queue queue-id*] [*ingress* | *egress*]

**sap**

**sap** *sap-id* **static-isids** **mfib**

**sap** *sap-id* **queue-group-redirect** [*ingress* | *egress*]

## Context

**[Tree]** (show>service>id sap)

## Full Context

show service id sap

## Description

Displays information for the SAPs associated with the service.

If no optional parameters are specified, a summary of all associated SAPs is displayed.

## Parameters

### *sap-id*

The ID that displays SAPs for the service.

### *detail*

Displays detailed information for the SAP. For **dist-cpu-protection**, **detail** includes the adapted operational rate parameters in the CLI output. The adapted Oper. parameters are only applicable if the policer is instantiated (for example, if the associated forwarding plane is operational, or for an interface if there is a physical port configured for the interface, or if the dynamic policers are allocated), otherwise values of 0 kb/s, and so on, are displayed.

### *static-isids*

Displays static ISIDs for the SAP.

### *range-id*

Specifies the range ID.

**Values** 1 to 4294967295

### *dist-cpu-protection*

Displays information about the distributed CPU protection policy and parameters associated with the SAP.

### *group-name*

Specifies the group name, up to 32 characters in length.

### *encap-id*

Specifies the encapsulation ID.

**Values** 0 to 16777215

### *encap-detail*

Displays encapsulation details for the specified encapsulation ID.

### *encap-stats*

Displays encapsulation statistics.

### *encap-group*

Displays the encapsulation group.

### *base*

Displays base information.

---

<b>dhcp</b>	Displays DHCP information.
<b>mc-ring</b>	Displays MC ring information.
<b>mcac</b>	Displays MCAC information.
<b>mrp</b>	Displays MRP information.
<b>qos</b>	Displays QoS information.
<b>sap-stats</b>	Displays SAP statistics.
<b>stats</b>	Displays statistics.
<b>stp</b>	Displays STP information.
<b>sub-mgmt</b>	Displays subscriber management information.
<b>ipsec-gw</b>	Displays IPSEC gateway information.
<b><i>circuit-id</i></b>	Specifies the circuit ID, up to 256 characters.
<b><i>ieee-address</i></b>	Specifies the IEEE address, up to 30 characters.
<b><i>remote-id</i></b>	Specifies the remote-ID, up to 256 characters.
<b>host-lockout-policy</b>	Displays the host lockout policy.
<b>summary</b>	Displays summary information.
<b><i>queue-id</i></b>	Specifies the queue ID. <b>Values</b> 1 to 32
<b>ingress</b>	Displays ingress information.
<b>egress</b>	Displays egress information.

**mfib**

Displays MFIB information.

**queue-group-redirection**

The output lists the queue group name and the instances configured in the related queue group redirect list. For each instance, the FP (for ingress) and port (for egress) is displayed. If there is a mismatch between the SAP and redirect list configuration and the queue group instance configuration, this is highlighted.

**ingress**

Displays information for the ingress policy.

**egress**

Displays information for the egress policy.

**Platforms**

All

**Output**

The following output is an example of SAP information, and [Table 446: Show Service-ID SAP Field Descriptions](#) describes the output fields.

**Output Example**

```
show service id "BD20023" sap lag-1:200 detail
```

```
=====
Service Access Points(SAP)
=====
Service Id       : 20023
SAP              : lag-1:200           Encap           : q-tag
Description     : (Not Specified)
Admin State     : Up                  Oper State      : Up
Flags           : None
Multi Svc Site  : None
Last Status Change : 02/09/2023 15:35:22
Last Mgmt Change  : 02/09/2023 15:35:12
Sub Type        : regular
Split Horizon Group: (Not Specified)

Etree Root Leaf Tag: Disabled          Etree Leaf Tag   : 0
Etree Leaf AC      : Disabled
Max Nbr of MAC Addr: No Limit          Total MAC Addr   : 2
Learned MAC Addr   : 2                 Static MAC Addr  : 0
OAM MAC Addr       : 0                 DHCP MAC Addr    : 0
Host MAC Addr      : 0                 Intf MAC Addr    : 0
SPB MAC Addr       : 0                 Cond MAC Addr    : 0
BGP EVPN Addr      : 0                 EVPN Static Addr : 0
Admin MTU          : 1518              Oper MTU         : 1518
Ingr IP Fltr-Id    : n/a              Egr IP Fltr-Id   : n/a
Ingr Mac Fltr-Id   : n/a              Egr Mac Fltr-Id  : n/a
Ingr IPv6 Fltr-Id : n/a              Egr IPv6 Fltr-Id: n/a
qinq-pbit-marking : both
Egr Agg Rate Limit: max

ARP Reply Agent    : Disabled          Limit Unused BW  : Disabled
SHCV pol IPv4      : None              Host Conn Verify : Disabled
Mac Learning       : Enabled           Discard Unkwn Srce: Disabled
```

```

Mac Aging           : Enabled           Mac Pinning        : Disabled
BPDU Translation   : Disabled
L2PT Termination   : Disabled
Vlan-translation   : None
Qinq-vlan-
translation        : None           Qinq-vlan-
translation Ids    : None

Acct. Pol          : None           Collect Stats      : Disabled

Anti Spoofing      : None           Dynamic Hosts     : Enabled
Avl Static Hosts   : 0             Tot Static Hosts  : 0
Calling-Station-Id : n/a

Application Profile: None
Transit Policy     : None

Oper Group         : (none)         Monitor Oper Grp  : (none)
Host Lockout Plcy  : n/a
Lag Link Map Prof  : (none)

Lag Per Link Hash
Class              : 1             Weight             : 1
Oper Class         : 1             Oper Weight        : 1
Override           : false

Cflowd            : Disabled
Bandwidth          : Not-Applicable
Oper DCpu Prot Pol : _default-access-policy
MCAC Policy Name   :                   MCAC Const Adm St : Enable
MCAC Max Unconst BW: no limit         MCAC Max Mand BW  : no limit
MCAC In use Mand BW: 0             MCAC Avail Mand BW: unlimited
MCAC In use Opnl BW: 0            MCAC Avail Opnl BW: unlimited
Use LAG port weight: no
MCAC If-Policy Name:
Restr MacUnpr Dst : Disabled (oper: Disabled)
Auto Learn Mac Prot: Disabled (oper: Disabled)
ALMP Exclude List  : <none>
Oper ALMP Excl List: <none>
RestMacProtSrc Act : none (oper: Discard-frame)
Time to RetryReset : never           Retries Left      : 3
Mac Move           : Blockable         Blockable Level   : Tertiary
Auth Policy        : None
DestMac Rewrite    : Disabled
Proc CPM Tfc Sap Dn: Disabled
SendBvplsEvpnFlush : Enabled
Bgp-Vpls MH VeId  : <none>

-----
ETH-CFM SAP specifics
-----
Tunnel Faults     : n/a           AIS                : Disabled
MC Prop-Hold-Timer : n/a         V-MEP Filtering    : Disabled
Squelch Levels    : None
Squelch Ctag Levels: None
Collect Lmm Stats : Disabled
LMM FC Stats      : None
LMM FC In Prof    : None

-----
Stp Service Access Point specifics
-----
Stp Admin State   : Up             Stp Oper State     : Down
Core Connectivity : Down
Port Role         : N/A           Port State         : Forwarding
    
```

```

Port Number      : N/A
Port Path Cost  : 10
Admin Edge      : Disabled
Link Type       : Pt-pt
Root Guard      : Disabled
Last BPDU from  : N/A
CIST Desig Bridge : N/A
Port Priority    : 128
Auto Edge      : Enabled
Oper Edge      : N/A
BPDU Encap     : Dot1d
Active Protocol : N/A
Designated Port : N/A

Forward transitions: 0
Cfg BPDUs rcvd   : 0
TCN BPDUs rcvd  : 0
TC bit BPDUs rcvd : 0
RST BPDUs rcvd  : 0
MST BPDUs rcvd  : 0
Bad BPDUs rcvd  : 0
Cfg BPDUs tx    : 0
TCN BPDUs tx    : 0
TC bit BPDUs tx : 0
RST BPDUs tx    : 0
MST BPDUs tx    : 0
    
```

-----  
 ARP host  
 -----

```

Admin State      : outOfService
Host Limit      : 1
Min Auth Interval : 15 minutes
    
```

-----  
 QOS  
 -----

```

Ingress qos-policy : 1
Ingress FP QGrp    : (none)
Ing FP QGrp Inst   : (none)
Ing ip-match tag   : none
I. Sched Pol      : (Not Specified)
E. Sched Pol      : (Not Specified)
I. Policer Ctl Pol : (Not Specified)
E. Policer Ctl Pol : (Not Specified)
I. QGrp Redir. List : (Not Specified)
E. QGrp Redir. List : (Not Specified)
Hw Agg Shaper Q Set : No
Hw Agg Shpr QSet Sz : 0
Hw Agg Shpr In-Use : No
Egress qos-policy : 1
Egress Port QGrp  : (none)
Egr Port QGrp Inst : (none)
Ing ipv6-match tag : none
    
```

-----  
 DHCP  
 -----

```

Description      : (Not Specified)
Admin State      : Down
DHCP Snooping    : Down
Lease Populate   : 0
Action           : Keep

Proxy Admin State : Down
Proxy Lease Time  : N/A
Emul. Server Addr : Not Configured
    
```

-----  
 DHCP6  
 -----

```

Description      : (Not Specified)
LDRA             : Enabled
Interface-type   : client-facing
Interface-Id     : ascii-tuple
Remote-Id        : mac
    
```

-----  
 Subscriber Management  
 -----

```

Admin State      : Down
Def Sub-Id       : None
Def Sub-Profile  : None
MAC DA Hashing   : False
    
```



Def SLA-Profile : None  
 Def Inter-Dest-Id : None  
 Def App-Profile : None  
 Sub-Ident-Policy : None

Subscriber Limit : 1  
 Single-Sub-Parameters  
 Prof Traffic Only : False  
 Non-Sub-Traffic : N/A

Static host management  
 MAC learn options : N/A

-----  
 Sap Aggregate Stats  
 -----

	Packets	Octets
Ingress		
Aggregate Offered	: 2	136
Aggregate Forwarded	: 2	136
Aggregate Dropped	: 0	0
Egress		
Aggregate Forwarded	: 674	50140
Aggregate Dropped	: 0	0

-----  
 Sap Statistics  
 -----

Last Cleared Time : N/A

	Packets	Octets
CPM Ingress	: 92	5740
Forwarding Engine Stats		
Dropped	: 0	0
Received Valid	: 2	136
Off. HiPrio	: 0	0
Off. LowPrio	: 0	0
Off. Uncolor	: 2	136
Off. Managed	: 0	0

Queueing Stats(Ingress QoS Policy 1)

Dro. HiPrio	: 0	0
Dro. LowPrio	: 0	0
For. InProf	: 0	0
For. OutProf	: 2	136

Queueing Stats(Egress QoS Policy 1)

Dro. In/InplusProf	: 0	0
Dro. Out/ExcProf	: 0	0
For. In/InplusProf	: 674	50140
For. Out/ExcProf	: 0	0

-----  
 Sap per Queue stats  
 -----

	Packets	Octets
Ingress Queue 1 (Unicast) (Priority)		
Off. HiPrio	: 0	0
Off. LowPrio	: 0	0
Dro. HiPrio	: 0	0
Dro. LowPrio	: 0	0
For. InProf	: 0	0
For. OutProf	: 0	0

```
Ingress Queue 11 (Multipoint) (Priority)
Off. Combined      : 2          136
Off. Managed       : 0          0
Dro. HiPrio        : 0          0
Dro. LowPrio       : 0          0
For. InProf        : 0          0
For. OutProf       : 2          136

Egress Queue 1
For. In/InplusProf : 674        50140
For. Out/ExcProf   : 0          0
Dro. In/InplusProf : 0          0
Dro. Out/ExcProf   : 0          0
=====
```

```
show service id 9 sap 1/1/10:1 queue-depth
```

```
=====
Queue Depth Information (Ingress SAP)
=====
```

```
Name          : 9->1/1/10:1->1
MBS           : Def
```

```
-----
Queue Depths (percentage)
-----
```

```
0%-10% 11%-20% 21%-30% 31%-40% 41%-50% 51%-60% 61%-70% 71%-80% 81%-90% 91%-100%
100.00 0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
```

```
Average Elapsed Time      : 0d 00:00:30
Wghtd Avg Queue Polling Interval: 100 ms
-----
```

```
=====
Queue Depth Information (Egress SAP)
=====
```

```
Name          : 9->1/1/10:1->1
MBS           : Def
Violation Threshold Percnt: xx.xx
Violation Total Count      : xxx
Violation Last Seen        : Thu Mar 26 12:39:33 PDT 2020
```

```
-----
Queue Depths (percentage)
-----
```

```
0%-10% 11%-20% 21%-30% 31%-40% 41%-50% 51%-60% 61%-70% 71%-80% 81%-90% 91%-100%
100.00 0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00    0.00
```

```
Average Elapsed Time      : 0d 00:11:11
Wghtd Avg Queue Polling Interval : 100 ms
Wghtd Avg HiWtrMark Polling Interval: 1000 s
-----
```

```
show service id 1 sap 1/1/1 queue-group-redirect
```

```
=====
Queue Group Redirect List Information (Ingress SAP)
=====
```

```

=====
Queue Group Redirect List   : list1
Type                       : vxlan-vni
Queue Group                 : qg1

-----
Match                       Instance      FP
-----
1                           1         1/1
2                           2         1/1
3                           3         1/1 : mismatch
-----

=====
Queue Group Redirect List Information (Egress SAP)
=====
Queue Group Redirect List   : list1
Type                       : vxlan-vni
Queue Group                 : qg1

-----
Match                       Instance      Port
-----
1                           1         1/1/1
2                           2         1/1/1
3                           3         1/1/1 : mismatch
-----

=====
    
```

Table 446: Show Service-ID SAP Field Descriptions

Label	Description
Service Access Points(SAP)	
Service Id	The service identifier.
SAP	The SAP and qtag.
Encap	The encapsulation type of the SAP.
Ethertype	Specifies an Ethernet type II Ethertype value.
Admin State	The administrative state of the SAP.
Oper State	The operating state of the SAP.
Flags	Specifies the conditions that affect the operating status of this SAP. Display output includes: ServiceAdminDown, SapAdminDown, Interface AdminDown, PortOperDown, PortMTUTooSmall, L2OperDown, SapIngress QoSMismatch, SapEgressQoSMismatch, RelearnLimitExceeded, RxProtSrc Mac, ParentIfAdminDown, NoSapPipeCelpAddr, SapParamMismatch, CemSap NoEcidOrMacAddr, StandByForMcRing, ServiceMTUTooSmall, NoSapEpipeRing Node.
Last Status Change	Specifies the time of the most recent operating status change to this SAP.

Label	Description
Last Mgmt Change	Specifies the time of the most recent management-initiated change to this SAP.
Admin MTU	The desired largest service frame size (in octets) that can be transmitted through the SAP to the far-end router, without requiring the packet to be fragmented.
Oper MTU	The actual largest service frame size (in octets) that can be transmitted through the SAP to the far-end router, without requiring the packet to be fragmented.
Restr MacUnpr Dst	The administrative and operational state of the restrict unprotected destination MAC (restrict-unprotected-dst) functionality.
Auto Learn Mac Prot	The administrative and operational state of the protected MAC auto learning (auto-learn-mac-protect) functionality.
RestMacProtSrc Act	The administrative and operational state of the restrict protected source MAC (restrict-protected-src) functionality.
QOS	
Ingress qos-policy	The ingress QoS policy ID assigned to the SAP.
Egress qos-policy	The egress QoS policy ID assigned to the SAP.
Ingress Filter-Id	The ingress filter policy ID assigned to the SAP.
Egress Filter-Id	The egress filter policy ID assigned to the SAP.
Acct. Pol	The accounting policy ID assigned to the SAP.
Collect Stats	Specifies whether collect stats is enabled.
Dropped	The number of packets and octets dropped due to SAP state, ingress MAC or IP filter, same segment discard, bad checksum, etc.
Received Valid	The number of valid packets and octets received on the SAP.
Off. HiPrio	The number of high priority packets and octets, as determined by the SAP ingress QoS policy, offered by the Pchip to the Qchip.
Off. LowPrio	The number of low priority packets and octets, as determined by the SAP ingress QoS policy, offered by the Pchip to the Qchip.
Off. Uncolor	The number of uncolored packets and octets, as determined by the SAP ingress QoS policy, offered by the Pchip to the Qchip.
Dro. HiPrio	The number of high priority packets and octets, as determined by the SAP ingress QoS policy, dropped by the Qchip due to: MBS exceeded, buffer pool limit exceeded, etc.
Dro. LowPrio	The number of low priority packets and octets, as determined by the SAP ingress QoS policy, dropped by the Qchip due to: MBS exceeded, buffer pool limit exceeded, etc.

Label	Description
For. InProf	The number of in-profile packets and octets (rate below CIR) forwarded by the ingress Qchip.
For. OutProf	The number of out-of-profile packets and octets discarded by the egress Qchip due to MBS exceeded, buffer pool limit exceeded, etc.
Dro. InProf	The number of in-profile packets and octets discarded by the egress Qchip due to MBS exceeded, buffer pool limit exceeded, etc.
Dro. OutProf	The number of out-of-profile packets and octets discarded by the egress Qchip due to MBS exceeded, buffer pool limit exceeded, etc.
For. InProf	The number of in-profile packets and octets (rate below CIR) forwarded by the egress Qchip.
For. OutProf	The number of out-of-profile packets and octets (rate above CIR) forwarded by the egress Qchip.
Ingress TD Profile	The profile ID applied to the ingress SAP.
Egress TD Profile	The profile ID applied to the egress SAP.
Alarm Cell Handling	The indication that OAM cells are being processed.
AAL-5 Encap	The AAL-5 encapsulation type.
Mult Svc Site	Specifies the customer's multiservice site name.
I. Sched Pol	The ingress scheduler policy applied to the customer's multiservice site.
E. Sched Pol	The egress scheduler policy applied to the customer's multiservice site.
HW Agg Shaper Q Set	Whether the hardware aggregate shaper queue sets are in use.
HW Add Shpr QSet Sz	The size of the hardware aggregate shaper queue set.
HW Agg Shpr In-Use	Whether hardware aggregate shapers are in use.
LLF Admin State	Displays the Link Loss Forwarding administrative state.
LLF Oper State	Displays the Link Loss Forwarding operational state.
pw-port	<b>pw-id[:qtag1[.qtag2]] pw-id[:qtag1[.qtag2]] pw-2:1.1</b>
DHCP6	
LDRA	The state of the Lightweight DHCPv6 Relay Agent: <ul style="list-style-type: none"> <li>• Enabled</li> <li>• Disabled</li> </ul>
Interface Type	The LDRA interface type:

Label	Description
	<ul style="list-style-type: none"> <li>client-facing</li> <li>network-facing</li> <li>N/A</li> </ul>
Interface-Id	The format for the Interface ID option: <ul style="list-style-type: none"> <li><b>ascii-tuple</b> system name   service ID   sap ID For example: pe1 3000 1/x1/1/c1/1:2000.10</li> <li><b>vlan-ascii-tuple</b> system name   service ID   sap ID   dot1p inner vlan   inner vlan ID For example: pe1 3000 1/x1/1/c1/1:2000.10 0 10</li> <li>N/A</li> </ul>
Remote-Id	The format for the Remote ID option: <ul style="list-style-type: none"> <li><b>mac</b> The DHCPv6 client source MAC address encoded as six hexadecimal numbers</li> <li><b>ASCII string in remote-id field</b> The configured ascii encoded string</li> <li>N/A</li> </ul>

The following output is an example of distributed CPU Protection Policer Output information.

[Table 447: Show Distributed CPU Protection Policer Output Fields](#) describes distributed CPU Protection Policer output fields.

### Output Example

```
*A:nodeA# show service id 33 sap 1/1/3:33 dist-cpu-protection detail
=====
Service Access Points(SAP) 1/1/3:33
=====
Distributed CPU Protection Policy : test1
-----
Statistics/Policer-State Information
=====
-----
Static Policer
-----
Policer-Name      : arp
Card/FP           : 1/1                Policer-State    : Conform
Protocols Mapped  : arp
Exceed-Count      : 0
Detec. Time Remain : 0 seconds          Hold-Down Remain. : none
Operational (adapted) rate parameters:
Oper. Packets     : 5 ppi                Oper. Within      : 8 seconds
Oper. Initial Delay: 6 packets
Oper. Depth       : 0 packets

Policer-Name      : dhcp
Card/FP           : 1/1                Policer-State    : Conform
```

```

Protocols Mapped      : dhcp
Exceed-Count         : 0
Detec. Time Remain   : 0 seconds          Hold-Down Remain.   : none
Operational (adapted) rate parameters:
  Oper. Kbps         : 2343 kbps          Oper. MBS           : 240 kilobytes
  Oper. Depth        : 0 bytes

... (snip)

*A:nodaA# show service id 33 sap 1/1/3:34 dist-cpu-protection detail
=====
Service Access Points(SAP) 1/1/3:34
=====
Distributed CPU Protection Policy : test2
-----
Statistics/Policer-State Information
=====
Static Policer
-----
No entries found
-----
Local-Monitoring Policer
-----
Policer-Name          : my-local-mon1
Card/FP               : 1/1              Policer-State       : conform
Protocols Mapped      : arp, pppoe-pppoa
Exceed-Count          : 0
All Dyn-Plcr Alloc.  : False
Operational (adapted) rate parameters:
  Oper. Packets       : 10 ppi           Oper. Within        : 8 seconds
  Oper. Initial Delay: 8 packets
  Oper. Depth         : 0 packets
-----
Dynamic-Policer (Protocol)
-----
Protocol(Dyn-Plcr)   : arp
Card/FP              : 1/1              Protocol-State      : not-applicable
Exceed-Count         : 0
Detec. Time Remain   : 0 seconds          Hold-Down Remain.   : none
Dyn-Policer Alloc.   : False
Operational (adapted) rate parameters: unknown
-----
Protocol(Dyn-Plcr)   : pppoe-pppoa
Card/FP              : 1/1              Protocol-State      : not-applicable
Exceed-Count         : 0
Detec. Time Remain   : 0 seconds          Hold-Down Remain.   : none
Dyn-Policer Alloc.   : False
Operational (adapted) rate parameters: unknown
-----
    
```

Table 447: Show Distributed CPU Protection Policer Output Fields

Label	Description
Distributed CPU Protection Policy	The DCP policy assigned to the object.
Policer-Name	The configured name of the static policer

Label	Description
Card/FP	The card and FP identifier. FP identifies the instance of the FP (FastPath) chipset. Some cards have a single FP and some cards can contain multiple FPs (for example, an XCM can house multiple FPs via its two XMA's).
Policer-State	The state of the policer with the following potential values:
	Exceed — The policer has been detected as not conforming to the associated DCP policy parameters (for example, packets exceeded the configured rate and the DCP polling process identified this occurrence)
	Conform — The policer has been detected as conforming to the associated DCP policy parameters (rate)
	not-applicable — Newly-created policers or policers that are not currently instantiated. This includes policers configured on line cards that are not in service.
Protocols Mapped	A list of protocols that are configured to map to the particular policer.
Oper. xyz fields	The actual hardware may not be able to perfectly rate limit to the exact configured rate parameters in a DCP policy. In this case the configured rate parameters will be adapted to the closest supported rate. These adapted operational values are displayed in CLI when the <b>detail</b> keyword is included in the show command. The adapted Oper. parameters are only applicable if the policer is instantiated (for example, if the associated forwarding plane is operational, or for an interface if there is a physical port configured for the interface, or if the dynamic policers are allocated), otherwise values of 0 kb/s, and so on, are displayed.
	Oper. Kbps - The adapted "kilobits-per-second" value for DCP "kbps" rates
	Oper. MBS - The adapted "mbs size" value for DCP "kbps" rates
	Oper. Depth - The calculated policer bucket depth in packets (for DCP "packets" rates) or in bytes (for DCP "kbps" rates)
	Oper. Packets - The adapted "ppi" value for DCP "packets" rates
	Oper. Within - The adapted "within seconds" value for DCP "packets" rates
	Oper. Init. Delay - The adapted "initial-delay packets" value for DCP "packets" rates



Label	Description
Exceed-Count	The count of packets exceeding the policing parameters since the given policer was previously declared as conforming or newly-instantiated. This counter has the same behavior as the exceed counter in the DCP the log events, they are baselined (reset) when the policer transitions to conforming.
Detec. Time Remain	The remaining time in the detection-time countdown during which a policer in the exceed state is being monitored to see if it conforms again.
Hold-Down Remain	The remaining time in the hold-down countdown during which a policer is treating all packets as exceeding.
All Dyn-Plcr Alloc.	Indicates that all the dynamic enforcement policers have been allocated and instantiated for a given local-monitor.
Dyn-Policer Alloc.	Indicates that a dynamic policer has been instantiated.

## sap

### Syntax

**sap** *sap-id*

### Context

[\[Tree\]](#) (clear>service>id sap)

### Full Context

clear service id sap

### Description

This command clears information for the specified SAP.

### Parameters

**sap-id**

Specifies the physical port identifier portion of the SAP definition

### Platforms

All

## sap

### Syntax

**sap** *sap-id* {all | cem | counters | stp | l2pt | mrp}

```
sap sap-id encap-group group-name [member encap-id]
```

## Context

[\[Tree\]](#) (clear>service>statistics sap)

## Full Context

```
clear service statistics sap
```

## Description

This command clears SAP statistics for a SAP.

## Parameters

### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

### **all**

Clears all SAP queue statistics and STP statistics.

### **counters**

Clears all queue statistics associated with the SAP.

### **stp**

Clears all STP statistics associated with the SAP.

### **l2pt**

Clears all L2PT statistics associated with the SAP.

### **mrp**

Clears all MRP statistics associated with the SAP.

### *group-name*

Specifies the group name, up to 32 characters.

### *encap-id*

Specifies the encapsulation ID.

**Values** 0 to 16777215

## Platforms

All

```
sap
```

## Syntax

```
sap [sap-id] [level level] [primary-vlan-enabled vlan-id]
```

```
sap port port-id [level level] [primary-vlan-enabled vlan-id]
```

## Context

[\[Tree\]](#) (show>eth-cfm>mip-instantiation sap)

## Full Context

```
show eth-cfm mip-instantiation sap
```

## Description

This command displays MIP creation information for SAPs.

## Parameters

### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

### *level*

Specifies the MIP instantiation level.

**Values** 0 to 7

### *vlan-id*

Specifies the VLAN ID to display.

**Values** 1 to 4094, or all

### *port-id*

Specifies the port ID.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

```
sap
```

## Syntax

```
sap sap-id [{ingress | egress}] [{detail | root-detail | thresholds | priority-info | depth}] [port port-id] [arbiter {name | root }]
```

## Context

[\[Tree\]](#) (show>qos>policer-hierarchy sap)

## Full Context

```
show qos policer-hierarchy sap
```

## Description

This command displays information about the policer hierarchy per SAP.

## Parameters

### *sap-id*

Displays information about the specified SAP.

### **ingress**

Displays ingress SAP information.

### **egress**

Displays egress SAP information.

### **detail**

Displays detailed information.

### **root-detail**

Displays detailed information about the arbiter root.

### **thresholds**

Displays the threshold, parenting, rate, and traffic information related to a policer.

### **priority-info**

Displays the threshold information related to the root arbiter.

### **depth**

Displays the bucket depth, parenting, rate, and traffic information related to a policer.

### **port-id**

Displays information about the specified port.

**Values** *slot/mda/port[.channel]*

### **name**

Displays information about the name of the QoS arbiter.

### **root**

Displays information about the arbiter root.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## Output

The following output is an example of SAP policer hierarchy information.

### Output Example

```
*A:PE-1# show qos policer-hierarchy sap 1/1/3:1
=====
Policer Hierarchy - Sap 1/1/3:1
=====
Ingress Policer Control Policy : cfhp-1
Egress Policer Control Policy :
-----
root (Ing)
|
| slot(1)
|   Profile-preferred:Disabled
|
```

```
--(A) : a3 (Sap 1/1/3:1)
|
|   --(P) : Policer 1->1/1/3:1->4
|       |
|       |   [Level 2 Weight 25]
|       |   Assigned PIR:60000      Offered:0
|       |   Consumed:0
|       |
|       |   Assigned FIR:15000
|
|   --(P) : Policer 1->1/1/3:1->3
|       |
|       |   [Level 2 Weight 25]
|       |   Assigned PIR:60000      Offered:0
|       |   Consumed:0
|       |
|       |   Assigned FIR:15000
|
|   --(P) : Policer 1->1/1/3:1->2
|       |
|       |   [Level 2 Weight 50]
|       |   Assigned PIR:60000      Offered:0
|       |   Consumed:0
|       |
|       |   Assigned FIR:30000
|
|   --(P) : Policer 1->1/1/3:1->5
|       |
|       |   [Level 5 Weight 1]
|       |   Assigned PIR:10000      Offered:0
|       |   Consumed:0
|       |
|       |   Assigned FIR:10000
|
|   --(P) : Policer 1->1/1/3:1->1
|       |
|       |   [Level 1 Weight 1]
|       |   Assigned PIR:100000     Offered:0
|       |   Consumed:0
|       |
|       |   Assigned FIR:100000
|
root (Egr)
No Active Members Found on slot 1
=====
*A:PE-1#

*A:PE-1# show qos policer-hierarchy sap 1/1/3:1 detail
=====
Policer Hierarchy - Sap 1/1/3:1
=====
Ingress Policer Control Policy : cfhp-1
Egress Policer Control Policy :
-----
Legend :
(*) real-time dynamic value
(w) Wire rates
-----
root (Ing)
| slot(1)
|   Profile-preferred:Disabled
|   MaxPIR:100000
```

```
ConsumedByChildren:0
OperPIR:100000      OperFIR:100000

DepthPIR:0 bytes
Priority 8
Oper Thresh Unfair:17408      Oper Thresh Fair:25600
Association count:0
Priority 7
Oper Thresh Unfair:17408      Oper Thresh Fair:25600
Association count:0
Priority 6
Oper Thresh Unfair:17408      Oper Thresh Fair:25600
Association count:0
Priority 5
Oper Thresh Unfair:17408      Oper Thresh Fair:25600
Association count:1
Priority 4
Oper Thresh Unfair:9728       Oper Thresh Fair:17408
Association count:0
Priority 3
Oper Thresh Unfair:9728       Oper Thresh Fair:17408
Association count:3
Priority 2
Oper Thresh Unfair:0          Oper Thresh Fair:8192
Association count:0
Priority 1
Oper Thresh Unfair:0          Oper Thresh Fair:8192
Association count:1

--(A) : a3 (Sap 1/1/3:1)
MaxPIR:60000
ConsumedByChildren:0
OperPIR:60000      OperFIR:60000

[Level 3 Weight 1]
Assigned PIR:60000      Offered:0
Consumed:0

Assigned FIR:60000

--(P) : Policer 1->1/1/3:1->4
MaxPIR:60000      MaxCIR:20000
CBS:25600         MBS:77824
HiPrio:0
Depth:0

OperPIR:60000      OperCIR:20000
OperFIR:15000
PacketByteOffset:0
StatMode: offered-total-cir

[Level 2 Weight 25]
Assigned PIR:60000      Offered:0
Consumed:0

Assigned FIR:15000

--(P) : Policer 1->1/1/3:1->3
MaxPIR:60000      MaxCIR:20000
CBS:25600         MBS:77824
HiPrio:0
Depth:0

OperPIR:60000      OperCIR:20000
```

```
OperFIR:15000
PacketByteOffset:0
StatMode: offered-total-cir

[Level 2 Weight 25]
Assigned PIR:60000      Offered:0
Consumed:0

Assigned FIR:15000

--(P) : Policer 1->1/1/3:1->2
MaxPIR:60000      MaxCIR:20000
CBS:25600      MBS:77824
HiPrio:0
Depth:0

OperPIR:60000      OperCIR:20000
OperFIR:30000
PacketByteOffset:0
StatMode: offered-total-cir

[Level 2 Weight 50]
Assigned PIR:60000      Offered:0
Consumed:0

Assigned FIR:30000

--(P) : Policer 1->1/1/3:1->5
MaxPIR:10000      MaxCIR:10000
CBS:12800      MBS:12800
HiPrio:0
Depth:0

OperPIR:10000      OperCIR:10000
OperFIR:10000
PacketByteOffset:0
StatMode: offered-total-cir

[Level 5 Weight 1]
Assigned PIR:10000      Offered:0
Consumed:0

Assigned FIR:10000

--(P) : Policer 1->1/1/3:1->1
MaxPIR:100000      MaxCIR:0
CBS:0      MBS:126976
HiPrio:0
Depth:0

OperPIR:100000      OperCIR:0
OperFIR:100000
PacketByteOffset:0
StatMode: offered-total-cir

[Level 1 Weight 1]
Assigned PIR:100000      Offered:0
Consumed:0

Assigned FIR:100000
root (Egr)
No Active Members Found on slot 1
=====
```

\*A:PE-1#

Table 448: Show QoS Policer Hierarchy SAP Output Fields

Label	Description
Policer Hierarchy - SAP	Displays the SAP ID
slot	Displays the slot number
(A)	An arbiter, an object that is configured in the policy
a3	Displays the name of the arbiter
(P)	Displays the policer name
[Level X Weight XX]	Displays the CIR level and weight configured in the policy
Assigned PIR	Displays the assigned PIR value
Offered	Displays the Offered PIR value
Consumed	Displays the amount of bandwidth consumed by the policer
Assigned FIR	Displays the assigned FIR based on weights of individual policers and the offered traffic

sap

### Syntax

**sap** *sap-id* [**scheduler** *scheduler-name*] [{**ingress** | **egress**}] [**detail**]

**sap** *sap-id* **encap-group** *group-name* [**scheduler** *scheduler-name*] [**member** *encap-id*] [**detail**]

### Context

[\[Tree\]](#) (show>qos>scheduler-hierarchy sap)

### Full Context

show qos scheduler-hierarchy sap

### Description

This command displays the scheduler hierarchy per SAP.

### Parameters

**sap-id**

Specifies the SAP assigned to the service.

**Values** The following values apply to the 7750 SR and 7950 XRS:



<i>sap-id</i>	null	[ <i>port-id</i>   <i>lag-id</i> ]
	dot1q	[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1</i>
	qinq	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i> ]: <i>qtag1.qtag2</i>
	<i>port-id</i>	<i>slot/mda/port</i> [. <i>channel</i> ]
		<i>esat-id/slot/</i> <i>port</i>
		<i>esat</i> keyword
		<i>id</i> 1 to 20
		<i>pxc-id.sub-port</i>
		<i>pxc</i> keyword
		<i>id</i> 1 to 64
		<i>sub-port</i> a, b
	<i>lag-id</i>	<i>lag-id</i>
		<i>lag</i> keyword
		<i>id</i> 1 to 800
	<i>qtag1</i>	0 to 4094
	<i>qtag2</i>	*, 0 to 4094

**Values** The following values apply to the 7750 SR only:

<i>sap-id</i>	null	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i> ]
	dot1q	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i> ]: <i>qtag1</i>
	qinq	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i> ]: <i>qtag1.qtag2</i>
	<i>cem</i>	<i>slot/mda/port.channel</i>
	<i>ima-grp</i>	[ <i>bundle-id</i> [: <i>vpi/vci</i>   <i>vpi</i>   <i>vpi1.vpi2</i> ]
	<i>port-id</i>	<i>slot/mda/port</i> [. <i>channel</i> ]
	<i>aps-id</i>	<i>aps-group-id</i> [. <i>channel</i> ]
		<i>aps</i> keyword
		<i>group-id</i> 1 to 64
	<i>ccag-id</i>	<i>ccag-id.path-id</i> [ <i>cc-type</i> ]: <i>cc-id</i>

	ccag	keyword
	id	1 to 8
	path-id	a, b
	cc-type	.sap-net, .net-sap
	cc-id	0 to 4094
lag-id	lag-id	
	lag	keyword
	id	1 to 800
qtag1	0 to 4094	
qtag2	*, 0 to 4094	
ipsec-id	ipsec- <i>id</i> .[private   public]:tag	
	ipsec	keyword
	id	1 to 4
	tag	0 to 4094

**Values** The following values apply to the 7450 ESS only:

<i>sap-id</i>	null	[ <i>port-id</i>   <i>lag-id</i> ]
dot1q		[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1</i>
qinq		[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1</i> . <i>qtag2</i>
port-id		slot/mda/port[.channel]
aps-id		aps- <i>group-id</i> [.channel]
	aps	keyword
	<i>group-id</i>	1 to 64
ccag-id		ccag- <i>id</i> . <i>path-id</i> [ <i>cc-type</i> ]: <i>cc-id</i>
	ccag	keyword
	<i>id</i>	1 to 8
	<i>path-id</i>	a, b
	<i>cc-type</i>	.sap-net, .net-sap
	<i>cc-id</i>	0 to 4094
lag-id		<i>lag-id</i>
	lag	keyword

	<i>id</i>	1 to 800
qtag1		0. to 4094
qtag2	*	0 to 4094

***scheduler-name***

The unique scheduler name created in the context of the scheduler policy

**ingress**

The keyword to display ingress SAP scheduler stats.

**egress**

The keyword to display egress SAP scheduler stats.

***group-name***

Specifies the name of the encap-group and can be up to 32 ASCII characters.

***encap-id***

Specifies the value of the single encap-id.

**Values** 1 to 16777215

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of SAP scheduler hierarchy information, and [Table 449: Show QoS Scheduler-Hierarchy SAP Output Fields](#) describes the SAP scheduler hierarchy fields.

**Output Example**

```

=====
*A:Dut-A>config>service# show qos scheduler-hierarchy sap lag-1:1 ingress detail
=====
Scheduler Hierarchy - Sap lag-1:1
=====
Ingress Scheduler Policy: sched1
-----
Legend :
(*)    real-time dynamic value
(otw)  on-the-wire rates
(lmotw) last-mile-on-the-wire rates
B      Bytes
-----
Root (Ing)
|
| slot(1)
|
|--(S) : sch1
|   |   AdminPIR:max                               AdminCIR:0 kbps(sum)
|   |   Limit Unused Bandwidth: disabled

```

```
[Within CIR Level 0 Weight 0]
Assigned:0 kbps    Offered:0 kbps
Consumed:0 kbps

[Above CIR Level 0 Weight 0]
Assigned:0 kbps    Offered:0 kbps
Consumed:0 kbps

TotalConsumed:0 kbps
OperPIR:max

[As Parent]
Rate:max
ConsumedByChildren:0 kbps

--(P) : 1->lag-1:1(1/1/c1/1)->2
  AdminPIR:max      AdminCIR:0 kbps
  Parent Limit Unused Bandwidth: not-found
  CBS:0 B          MBS:8589934592 B
  Depth:0 B
  Low Drop Tail:0 B

  [Within CIR Level 0 Weight 1]
  Assigned:0 kbps    Offered:0 kbps
  Consumed:0 kbps

  [Above CIR Level 1 Weight 1]
  Assigned:max      Offered:0 kbps
  Consumed:0 kbps
  TotalConsumed:0 kbps
  OperPIR:max      OperCIR:0 kbps

  PktByteOffset:add 0*
  OnTheWireRates:false
  ATMOnTheWireRates:false
  LastMileOnTheWireRates:false

--(S) : Tier0Ingress:1->lag-1:1->1
  AdminPIR:10000000 kbps      AdminCIR:0 kbps
  AdminFIR:0 kbps
  Parent Limit Unused Bandwidth: not-found

  [Within CIR Level 0 Weight 1]
  Assigned:0 kbps    Offered:0 kbps
  Consumed:0 kbps

  [Above CIR Level 1 Weight 1]
  Assigned:10000000 kbps Offered:0 kbps
  Consumed:0 kbps

  TotalConsumed:0 kbps
  OperPIR:10000000 kbps

  [As Parent]
  OperPIR:10000000 kbps OperCIR:0 kbps
  OperFIR:0 kbps
  ConsumedByChildren:0 kbps

--(Q) : 1->lag-1:1(1/1/c1/1)->1 1:1/1
  AdminPIR:10000000 kbps AdminCIR:0 kbps
  Parent Limit Unused Bandwidth: not-found
  CBS:0 B
  MBS:12582912 B
```

```
Depth:0 B
HighPlus Drop Tail:12582912 B
High Drop Tail:12582912 B
Low Drop Tail:11272192 B
Exceed Drop Tail:9961472 B

[CIR Weight 1]
Assigned:0 kbps      Offered:0 kbps
Consumed:0 kbps

[PIR Weight 1]
Assigned:10000000 kbps Offered:0 kbps
Consumed:0 kbps
OperPIR:max          OperCIR:0 kbps

OperFIR:0 kbps

PktByteOffset:add 0*
OnTheWireRates:false
ATMOnTheWireRates:false
LastMileOnTheWireRates:false

=====

*A:PE# show qos scheduler-hierarchy sap 1/1/1:1 egress detail

=====
Scheduler Hierarchy - Sap 1/1/1:1
=====
Egress Scheduler Policy : sp1
-----
Legend :
(*) real-time dynamic value
(w) Wire rates
B Bytes

-----
Root (Egr)
| slot(1)
|--(S) : s1
|      AdminPIR:200000          AdminCIR:10000(sum)
|      Limit Unused Bandwidth: disabled
|
|      [Within CIR Level 0 Weight 0]
|      Assigned:0              Offered:0
|      Consumed:0
|
|      [Above CIR Level 0 Weight 0]
|      Assigned:0              Offered:0
|      Consumed:0
|
|      TotalConsumed:0
|      OperPIR:200000
|
|      [As Parent]
|      Rate:200000
|      ConsumedByChildren:0
|
|--(Q) : 1->1/1/1:1->1
|      AdminPIR:10000          AdminCIR:10000
```

```

Parent Limit Unused Bandwidth: not-found
CBS:15360 B
MBS:66048 B
Depth:0 B
HighPlus Drop Tail:66048 B
High Drop Tail:66048 B
Low Drop Tail:58368 B
Exceed Drop Tail:52224 B

[Within CIR Level 6 Weight 1]
Assigned:10000      Offered:0
Consumed:0

[Above CIR Level 6 Weight 1]
Assigned:10000      Offered:0
Consumed:0

TotalConsumed:0
OperPIR:10000      OperCIR:10000

PktByteOffset:add 0*
OnTheWireRates:false
ATMOnTheWireRates:false
LastMileOnTheWireRates:false
    
```

Table 449: Show QoS Scheduler-Hierarchy SAP Output Fields

Label	Description
Admin CIR/PIR	Specifies the configured value of CIR/PIR.
Assigned CIR/PIR	Specifies the PIR/CIR rate given to a member by that parent level.
Offered CIR/PIR	Specifies the offered load on that member.
Consumed CIR/PIR	Specifies the amount of scheduler bandwidth used by this member.
S	Displays the scheduler name and information.
Q	Displays the queue ID and information.
P	Displays the policer ID and information.

**sap**

**Syntax**

**sap sap-id [scheduler scheduler-name] [{ingress | egress}]**

**sap** *sap-id* **encap-group** *group-name* [**scheduler** *scheduler-name*] [**member** *encap-id*]

## Context

[\[Tree\]](#) (show>qos>scheduler-stats sap)

## Full Context

show qos scheduler-stats sap

## Description

This command displays information about the scheduler stats per SAP.

## Parameters

### *sap-id*

Displays information about the SAP and encapsulation value used to identify the SAP.

**Values** The following values apply to the 7750 SR and 7950 XRS:

<i>sap-id</i>	null	[ <i>port-id</i>   <i>lag-id</i> ]
	dot1q	[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1</i>
	qinq	[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1.qtag2</i>
	lag-id	lag-id
		lag keyword
		id 1 to 800
	qtag1	0 to 4094
	qtag2	*, 0 to 4094
	ipsec-id	ipsec- <i>id</i> . [ <i>private</i>   <i>public</i> ]: <i>tag</i>
		ipsec keyword
		id 1 to 4
		tag 0 to 4094

**Values** The following values apply to the 7750 SR only:

<i>sap-id</i>	null	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i> ]
	dot1q	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i> ]: <i>qtag1</i>
	qinq	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i> ]: <i>qtag1.qtag2</i>
	cem	<i>slot/mda/port.channel</i>
	ima-grp	[ <i>bundle-id</i> [: <i>vpi/vci</i>   <i>vpi</i>   <i>vpi1.vpi2</i> ]
	port-id	<i>slot/mda/port</i> [. <i>channel</i> ]

aps-id	aps-group-id[.channel]
	aps keyword
	group-id 1 to 64
ccag-id	ccag-id.path-id[cc-type]:cc-id
	ccag keyword
	id 1 to 8
	path-id a, b
	cc-type .sap-net, .net-sap
	cc-id 0 to 4094
eth-tunnel	eth-tunnel-id[:eth-tun-sap-id]
	id: 1 to 1024
	eth-tun-sap-id 0 to 4094
lag-id	lag-id
	lag keyword
	id 1 to 800
qtag1	0 to 4094
qtag2	*, 0 to 4094
ipsec-id	ipsec-id.[private   public]:tag

**Values** The following values apply to the 7450 ESS:

<i>sap-id</i>	null	[port-id   lag-id]
dot1q		[port-id   lag-id]:qtag1
qinq		[port-id   lag-id]:qtag1.qtag2
port-id		slot/mda/port[.channel]
aps-id		aps-group-id[.channel]
	aps	keyword
	group-id	1 to 64
ccag-id		ccag-id.path-id[cc-type]:cc-id
	ccag	keyword
	id	1 to 8



	<i>path-id</i>	a, b]
	<i>cc-type</i>	.sap-net, .net-sap]
	<i>cc-id</i>	0 to 4094
eth-tunnel	eth-tunnel-id[:eth-tun-sap-id]	
	id:	1 to 1024
	eth-tun-sap-id	0 to 4094
lag-id	lag-id	
	lag	keyword
	id	1 to 800
qtag1	0. to 4094	
qtag2	*, 0 to 4094	

***scheduler-name***

Displays information about the specified schedule.

**ingress**

Display only the policy displayed on the ingress SAP.

**egress**

Display only the policy displayed on the egress SAP.

***group-name***

Specifies the name of the encap-group and can be up to 32 ASCII characters.

***encap-id***

Specifies the value of the single encap-id.

**Values** 1 to 16777215

**Platforms**

All

**Output**

The following output is an example of scheduler-stats SAP information, and [Table 450: Show QoS Scheduler-Stats SAP Output Fields](#) describes the scheduler-stats SAP fields.

**Output Example**

```
A:ALA-12# show qos scheduler-stats sap 1/1/4.1:0
=====
Scheduler Stats
=====
Scheduler                Forwarded Packets      Forwarded Octets
-----
Ingress Schedulers
```

```

All_traffic          0          0
NetworkControl      0          0
Egress Schedulers
All_traffic          0          0
Internet_be         0          0
Internet_priority   0          0
Internet_voice      0          0
NetworkControl      0          0
NonVoice            0          0
VPN_be              0          0
VPN_nc              0          0
VPN_priority        0          0
VPN_reserved        0          0
VPN_video           0          0
VPN_voice           0          0
Voice               0          0
=====
A:ALA-12#

A:ALA-12# show qos scheduler-stats sap 1/1/5:0 scheduler 1
=====
Scheduler Stats
=====
Scheduler              Forwarded Packets      Forwarded Octets
-----
Ingress Schedulers
No Matching Entries.
Egress Schedulers
No Matching Entries.
=====
A:ALA-12#

A:ALA-12# show qos scheduler-stats sap 1/1/4.1:0 scheduler All_traffic
=====
Scheduler Stats
=====
Scheduler              Forwarded Packets      Forwarded Octets
-----
Ingress Schedulers
All_traffic            0          0
Egress Schedulers
All_traffic            0          0
=====
A:ALA-12#
    
```

Table 450: Show QoS Scheduler-Stats SAP Output Fields

Label	Description
Scheduler	Displays the scheduler policy name.
Forwarded Packets	Displays the number of packets forwarded.
Forwarded Octet	Displays the number of octets forwarded.
Ingress Schedulers	Displays the egress scheduler name(s).
Egress Schedulers	Displays the ingress scheduler name(s).

## sap

### Syntax

**sap** *sap-id* [**egress**] [ **detail**]

**sap** *sap-id* **encap-group** *group-name* [**member** *encap-id*] [**detail**]

### Context

[\[Tree\]](#) (show>qos>agg-rate sap)

### Full Context

show qos agg-rate sap

### Description

This command displays the H-QoS aggregate rate limit per SAP or encap group.

### Parameters

**sap** *sap-id*

The port number and encapsulation value used to identify the SAP.

Values		
null		<i>[port-id   bundle-id   bpgrp-id   lag-id   aps-id]</i>
dot1q		<i>[port-id   bundle-id   bpgrp-id   lag-id   aps-id]:qtag1</i>
qinq		<i>[port-id   bundle-id   bpgrp-id   lag-id]:qtag1.qtag2</i>
cem		<i>slot/mda/port.channel</i>
ima-grp		<i>[bundle-id]:vpi/vci   vpi   vpi1.vpi2   cp.conn-prof-id]</i>
	cp	keyword
	conn-prof-id	[1to8000]
port-id		<i>slot/mda/port[.channel]</i>
aps-id		<i>aps-group-id[.channel]</i>
	aps	keyword
	group-id	1 to 64
ccag-id		<i>ccag-id.path-id[cc-type]:cc-id</i>
	ccag	keyword
	id	1 to 8
	path-id	a, b
	cc-type	.sap-net, .net-sap

	cc-id	0 to 4094
eth-tunnel	eth-tunnel- <i>id</i> [: <i>eth-tun-sap-id</i> ]	
	id:	1 to 128
	eth-tun-sap-id	0 to 4094
lag-id	lag-id	
	lag	keyword
	id	1 to 800
pw-id	pw- <i>id</i>	
	pw	keyword
	id	1 to 10239
qtag1	0 to 4094	
qtag2	*, null, 0 to 4094	
tunnel-id	tunnel- <i>id</i> .[private   public]: <i>tag</i>	
	tunnel	keyword
	id	1 to 16
	tag	0 to 4094

**egress**

Displays egress SAP customer scheduler stats.

**group-name**

Specifies the name of the encap-group and can be up to 32 ASCII characters.

**encap-id**

Specifies the value of the single encap-id.

**Values** 1 to 16777215

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of H-QoS aggregate rate limit per SAP output, and [Table 451: Show H-QoS Aggregate Rate Limit per SAP Output Fields](#) describes the H-QoS aggregate rate limit per SAP fields.

**Output Example**

```
*A:PE# show qos agg-rate sap 1/1/1:1 egress
```

```

=====
Aggregate Rate Information - Sap 1/1/1:1
=====
-----
Root (Egr)
| slot(1)
|   AdminRate           : 10000
|   OperRate            : 0
|   Limit Unused Bandwidth : disabled
|   OnTheWireRates      : false
|   LastMileOnTheWireRates : false
|
=====
*A:PE#
    
```

Table 451: Show H-QoS Aggregate Rate Limit per SAP Output Fields

Label	Description
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.
Limit Unused Bandwidth	Indicates whether the <b>limit-unused-bandwidth</b> command is enabled to protect against exceeding the aggregated bandwidth
OnTheWireRates	Indicates whether the displayed rates are on-the-wire rates.
LastMileOnTheWireRates	Indicates whether the displayed rates are on-the-wire rates for the last mile only.

## sap

### Syntax

**sap** *sap-id* [**scheduler** *scheduler-name*] [{**ingress** | **egress**}]

### Context

**[Tree]** (clear>qos>scheduler-stats sap)

### Full Context

clear qos scheduler-stats sap

### Description

This command clears scheduler statistics.

### Parameters

**sap-id**

Specifies the SAP assigned to the service.

**Values** The following values apply to the 7750 SR and 7950 XRS:

null	<i>[port-id   lag-id]</i>
dot1q	<i>[port-id   lag-id]:qtag1</i>
qinq	<i>[port-id   lag-id]:qtag1.qtag2</i>
cem	<i>slot/mda/port.channel</i>
ima-grp	<i>[bundle-id]:vpi/vci   vpi   vpi1.vpi2]</i>
port-id	<i>slot/mda/port[.channel]</i>
lag-id	lag-id
	lag keyword
	id 1 to 800
qtag1	0 to 4094
qtag2	*, 0 to 4094

**Values** The following values apply to the 7750 SR:

null	<i>[port-id   bundle-id   bpgrp-id   lag-id   aps-id]</i>
dot1q	<i>[port-id   bundle-id   bpgrp-id   lag-id   aps-id]:qtag1</i>
qinq	<i>[port-id   bundle-id   bpgrp-id   lag-id]:qtag1.qtag2</i>
cem	<i>slot/mda/port.channel</i>
ima-grp	<i>[bundle-id]:vpi/vci   vpi   vpi1.vpi2]</i>
port-id	<i>slot/mda/port[.channel]</i>
aps-id	<i>aps-group-id[.channel]</i>
	aps keyword
	group-id 1 to 64
ccag-id	<i>ccag-id.path-id[cc-type]:cc-id</i>
	ccag keyword
	id 1 to 8
	path-id a, b
	cc-type .sap-net, .net-sap
	cc-id 0 to 4094
lag-id	lag-id
	lag keyword

	id	1 to 800
qtag1		0 to 4094
qtag2	*	0 to 4094
ipsec-id	ipsec- <i>id</i> . <i>[private   public]:tag</i>	
	ipsec	keyword
	id	1 to 4
	tag	0 to 4094

**Values** The following values apply to the 7450 ESS:

null	<i>[port-id   lag-id]</i>	
dot1q	<i>[port-id   lag-id]:qtag1</i>	
qinq	<i>[port-id   lag-id]:qtag1.qtag2</i>	
port-id	slot/mda/port. <i>[channel]</i>	
aps-id	<i>aps-group-id</i> . <i>[channel]</i>	
	aps	keyword
	<i>group-id</i>	1 to 64
ccag-id	<i>ccag-id.path-id</i> <i>[cc-type]:cc-id</i>	
	ccag	keyword
	<i>id</i>	1 to 8
	<i>path-id</i>	a, b
	<i>cc-type</i>	.sap-net, .net-sap
	<i>cc-id</i>	0 to 4094
lag-id	<i>lag-id</i>	
	lag	keyword
	<i>id</i>	1 to 800
qtag1	0. to 4094	
qtag2	*, 0 to 4094	

***scheduler-name***

Displays the scheduler name.

**Values** Valid names consist of any string up to 32 characters, composed of printable, 7-bit ASCII characters. If the string contains special

characters (#, \$, spaces, etc.), the entire string must be enclosed within double quotes.

**ingress**

Display only the policy displayed on the ingress SAP.

**egress**

Display only the policy displayed on the egress SAP.

**Platforms**

All

**sap**

**Syntax**

**sap** *sap-id* **start** *mode* [**mac-swap**] [**mac** *ieee-address*] [**all**]

**sap** *sap-id* **stop**

**Context**

[\[Tree\]](#) (tools>perform>service>id>loopback>eth sap)

**Full Context**

tools perform service id loopback eth sap

**Description**

This command places and removes the specific SAP in loopback mode for reflecting Ethernet traffic back in the direction of the received stream. This is only applicable to Ethernet-based SAPs.

**Parameters**

**sap-id**

Specifies the SAP ID.

**Values**

null	<i>port-id</i>   <i>lag-id</i>	
dot1q	{ <i>port-id</i>   <i>lag-id</i> }:{ <i>qtag1</i>   <i>cp-conn-prof-id</i> }	
qinq	{ <i>port-id</i>   <i>lag-id</i> }:{ <i>qtag1</i>   <i>cp-conn-prof-id</i> }.{ <i>qtag2</i>   <i>cp-conn-prof-id</i> }	
	cp: keyword	
	<i>conn-prof-id</i> : 1..8000	
port-id	slot/mda/port [.channel]	
	eth-sat-id	esat-id/slot/port



		esat: keyword
		id: 1 to 20
	pxc-id	pxc-id.sub-port
		pxc pxc-id.sub-port
		pxc: keyword
		id: 1 to 64
		sub-port: a, b
lag-id	lag- <i>id</i>	
	lag: keyword	
	<i>id</i> : 1..800	
qtag1	0..4094	
qtag2	*   null   0..4094	

### start

Keyword that places the sap in loopback mode.

### mode

Keywords that specify the location on the loopback in relation to the SAP.

**Values** **ingress** — Traffic arriving at the sap-ingress will be reflected back out the same SAP.

**egress** — Traffic arriving at the sap-egress will be reflected back into the service in the direction of the original source.

### stop

Removes the SAP from loopback mode.

### mac-swap

Enable source address and destination address swapping for the reflected packets when the arriving packet is unicast. Any broadcast and multicast packets arriving on a looped point will be dropped.

### mac *ieee-address*

Optionally configures the source MAC address used in the reflected packet when the arriving packet is a broadcast or multicast. This does not apply to arriving unicast packets.

6-byte unicast mac-address in the form xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx.

### all

Configured *ieee-address* is used as the source address for all reflected packets regardless of the arriving destination.

## Platforms

All

## sap

### Syntax

**sap** *sap-id* [**arbiter** {**root** | *name*}] [**ingress** | **egress**] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>qos>arbiter-stats sap)

### Full Context

monitor qos arbiter-stats sap

### Description

This command monitors arbiter statistics for a SAP.

### Parameters

#### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

#### *name*

Specifies the name of the policer control policy arbiter, up to 32 characters. This parameter is mandatory if the SAP resides on a LAG in adapt-qoslink or port-fair mode.

#### **root**

Specifies the arbiter to which this queue would be feeding.

#### **ingress**

Displays *scheduler-name* statistics applied on the ingress SAP.

#### **egress**

Displays *scheduler-name* statistics applied on the egress SAP.

#### *seconds*

Configures the interval for each display in seconds.

**Values** 11 to 60

**Default** 11 seconds

#### *repeat*

Configures the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

#### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### rate

Displays rate-per-second for each statistic instead of the delta.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## sap

### Syntax

```
sap sap-id [scheduler scheduler-name] [ingress | egress] [interval seconds] [repeat repeat] [absolute | rate]
```

### Context

[\[Tree\]](#) (monitor>qos>scheduler-stats sap)

### Full Context

```
monitor qos scheduler-stats sap
```

### Description

Use this command to monitor scheduler statistics for a SAP at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified SAP. The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### **sap-id**

Specifies the physical port identifier portion of the SAP definition.

#### **scheduler-name**

Specifies an existing *scheduler-name*, up to 32 characters. Scheduler names are configured in the **config>qos>scheduler-policy>tier level** context. This parameter is mandatory if the SAP resides on a LAG in adapt-qoslink or port-fair mode.

#### **ingress**

Displays *scheduler-name* statistics applied on the ingress SAP.

#### **egress**

Displays *scheduler-name* statistics applied on the egress SAP.

#### **seconds**

Configures the interval for each display in seconds.

**Values** 11 to 60

**Default** 11 seconds

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic instead of the delta.

## **Platforms**

All

## **sap**

## **Syntax**

**sap** *sap-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**sap** *sap-id* **encap-group** *group-name* [**member** *encap-id*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

## **Context**

[\[Tree\]](#) (monitor>service>id sap)

## **Full Context**

monitor service id sap

## **Description**

This command monitors statistics for a SAP associated with this service.

This command displays statistics for a specific SAP, identified by the *port-id* and encapsulation value, at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the SAP. The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

<b>Values</b>		
null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>	
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i> :[qtag1   cp-conn-prof-id]	
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i> :[qtag1   <b>cp-conn-prof-id</b> ].[qtag2   <b>cp-conn-prof-id</b> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>	
ima-grp	<i>bundle-id</i> [:vpi/vci   vpi   vpi1.vpi2   <b>cp.conn-prof-id</b> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port</i> [.channel] <i>esat-id/slot/port</i> <i>pxc-id.sub-port</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
ccag-id	<b>ccag-id.path-id</b> [ <i>cc-type</i> ]: <i>cc-id</i>	
	<b>ccag</b>	keyword
	<i>id</i>	1 to 8
	<i>path-id</i>	a   b
	<i>cc-type</i>	.sap-net   .net-sap
	<i>cc-id</i>	1 to 4094
eth-tunnel	<i>eth-tunnel-id</i> [: <i>eth-tun-sap-id</i> ]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800

pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 10239
qtag1	*   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private   public:tag</b>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094

### **port-id**

Specifies the physical port ID in the *slot/mda/port*, **esat-id/slot/ port** or **pxc-id.sub-port** format.

If the card in the slot has XMA/MDAs installed, the *port-id* must be in the *slot\_number/MDA\_number/port\_number* format. For example, 6/2/3 specifies port 3 on XMA/MDA 2 in slot 6.

The *port-id* must reference a valid port type. When the *port-id* parameter represents SONET/SDH and TDM channels, the port ID must include the channel ID. A period "." separates the physical port from the *channel-id*. The port must be configured as an access port. Channels are supported on the 7750 SR.

If the SONET/SDH port is configured as clear-channel then only the port is specified.

### **bundle-id**

Specifies the multilink bundle to be associated with this IP interface. The **bundle** keyword must be entered at the beginning of the parameter. This parameter applies to the 7750 SR.

The command syntax must be configured as follows:

bundle-id: **bundle-type-slot-id/mda-slot.bundle-num**

bundle-id value range: 1 to 128

For example:

```
*A:ALA-12>config# port bundle-ppp-5/1.1
*A:ALA-12>config>port# multilink-bundle
```

### **bggrp-id**

Specifies the bundle protection group ID to be associated with this IP interface. The **bggrp** keyword must be entered at the beginning of the parameter. This parameter applies to the 7750 SR.

The command syntax must be configured as follows:

*bggrp-id*: **bggrp-type-bggrp-num**

type: ima

*bpgrp-num* value range: 1 to 1280

Example:

```
*A:ALA-12>config# port bpgrp-ima-1
*A:ALA-12>config>service>vpls$ sap bpgrp-ima-1
```

**qtag1, qtag2**

Specifies the encapsulation value used to identify the SAP on the port or sub-port. If this parameter is not specifically defined, the default value is 0.

**Values**

qtag1: 0 to 4094  
 qtag2 : \* | 0 to 4094

The values depends on the encapsulation type configured for the interface. [Table 452: qtag values by port and encapsulation type](#) describes the allowed values for the port and encapsulation types.

Table 452: qtag values by port and encapsulation type

Port Type	Encap-Type	Allowed Values	Comments
Ethernet	Null	0	The SAP is identified by the port.
Ethernet	Dot1q	0 to 4094	The SAP is identified by the 802.1Q tag on the port. Note that a 0 qtag1 value also accepts untagged packets on the dot1q port.
Ethernet	QinQ	qtag1: 0 to 4094 qtag2: 0 to 4094	The SAP is identified by two 802.1Q tags on the port. Note that a 0 qtag1 value also accepts untagged packets on the dot1q port.
SONET/SDH	IPCP	—	The SAP is identified by the channel. No BCP is deployed and all traffic is IP.
SONET/SDH TDM	BCP-Null	0	The SAP is identified with a single service on the channel. Tags are assumed to be part of the customer packet and not a service delimiter.
SONET/SDH TDM	BCP-Dot1q	0 to 4094	The SAP is identified by the 802.1Q tag on the channel.

Port Type	Encap-Type	Allowed Values	Comments
SONET/SDH TDM	Frame Relay	16 to 991	The SAP is identified by the data link connection identifier (DLCI).
SONET/SDH ATM	ATM	vpi (NNI) 0 to 4095 vpi (UNI) 0 to 255 vci 1, 2, 5 to 65535	The SAP is identified by port or by PVPC or PVCC identifier (vpi, vpi/vci, or vpi range).

**group-name**

Specifies the name of the encap group, up to 32 characters.

**encap-id**

Specifies the value of the encapsulation ID to be displayed.

**Values** 0 to 16777215

**seconds**

Configures the interval for each display, in seconds.

**Values** 11 to 60

**Default** 11

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Displays absolute rate-per-second value for each statistic.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

**Output**

The following output is an example of SAP information.

**Output Example**

```
*A:cses-A13# monitor service id 88 sap 1/1/2:0
=====
Monitor statistics for Service 88 SAP 1/1/2:0
=====
At time t = 0 sec (Base Statistics)
-----
```



```

-----
Sap Statistics
-----
Last Cleared Time      : N/A
                        Packets          Octets
Forwarding Engine Stats
Dropped                : 0              0
Off. HiPrio            : 0              0
Off. LowPrio           : 0              0
Off. Uncolor           : 0              0

Queueing Stats(Ingress QoS Policy 1)
Dro. HiPrio            : 0              0
Dro. LowPrio           : 0              0
For. InProf            : 0              0
For. OutProf           : 0              0

Queueing Stats(Egress QoS Policy 1)
Dro. InProf            : 0              0
Dro. OutProf           : 0              0
For. InProf            : 0              0
For. OutProf           : 0              0
-----
Sap per Queue Stats
-----
                        Packets          Octets

Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio            : 0              0
Off. LoPrio            : 0              0
Dro. HiPrio            : 0              0
Dro. LoPrio            : 0              0
For. InProf            : 0              0
For. OutProf           : 0              0
    
```

## sap

### Syntax

**sap** *sap-id* [**arbiter** {*name* | *root*}] [**ingress** | **egress**]

### Context

**[Tree]** (clear>qos>arbiter-stats sap)

### Full Context

clear qos arbiter-stats sap

### Description

This command clears the arbiter statistics per SAP.

### Parameters

**sap-id**

Specifies the port ID portion of the SAP definition.

<b>Values</b>		
null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>eth-sat-id</i>	
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : <i>[qtag1]</i>   <i>cp-conn-prof-id</i>	
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : <i>[qtag1]</i>   <i>cp-conn-prof-id</i> : <i>[qtag2]</i>   <b>cp-conn-prof-id</b>	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>	
ima-grp	<i>bundle-id</i> [: <i>vpi/vci</i>   <i>vpi</i>   <i>vpi1.vpi2</i>   <b>cp.conn-prof-id</b> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port</i> [ <i>.channel</i> ]	
aps-id	<b>aps-group-id</b> [ <i>.channel</i> ]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-tunnel	<i>eth-tunnel-id</i> : <i>[eth-tun-sap-id]</i>	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>   <i>lag-string</i>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max.
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	null   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private</b>   <i>public.tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094

eth-sat-id	<b>esat-id/slot/port</b>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b

**name**

Specifies the arbiter name, up to 32 characters.

**root**

Specifies the arbiter root, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

**sap**

**Syntax**

**sap** *sap-id* [**arbiter** *name* | *root*] [**ingress** | **egress**]

**Context**

[\[Tree\]](#) (show>qos>arbiter-stats sap)

**Full Context**

show qos arbiter-stats sap

**Description**

This command displays the arbiter statistics per SAP.

**Parameters**

**sap-id**

Specifies the SAP ID.

**Values**

null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   eth-sat-id
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i>   eth-sat-id: <i>[qtag1]</i>   cp-conn-prof-id
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i>   <i>eth-sat-id:[qtag1]</i>   <i>cp-conn-prof-id.[qtag2]</i>   <b>cp-conn-prof-id</b>

	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>	
ima-grp	bundle-id [:vpi/vci   vpi   vpi1.vpi2   <b>cp.conn-prof-id</b> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port[.channel]</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-tunnel	eth-tunnel-id[: <i>eth-tun-sap-id</i> ]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>   lag-string	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max.
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	null   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private</b>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
eth-sat-id	<b>esat-id/slot/port</b>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword

<i>id</i>	1 to 64
<i>sub-port</i>	a, b

**name**

Specifies the arbiter name, up to 32 characters.

**root**

Specifies the arbiter root, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

**sap**

**Syntax**

**sap** *sap-id* [**ingress** | **egress**] [**detail**] [**port** *port-id*]

**Context**

[\[Tree\]](#) (show>qos>policer sap)

**Full Context**

show qos policer sap

**Description**

This command displays the policer per SAP.

**Parameters**

**sap-id**

Specifies the SAP ID.

**Values**

null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   eth-sat-id
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i>   eth-sat-id:[qtag1]   cp-conn-prof-id]
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> :[qtag1   cp-conn-prof-id].[qtag2   <b>cp-conn-prof-id</b> ]
<b>cp</b>	keyword
<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>
ima-grp	<i>bundle-id</i> [:vpi/vci   vpi   vpi1.vpi2   <b>cp.conn-prof-id</b> ]
<b>cp</b>	keyword

	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port[.channel]</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-tunnel	<b>eth-tunnel-id</b> [: <i>eth-tun-sap-id</i> ]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>   lag-string	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max.
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	null   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private</b>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
eth-sat-id	<b>esat-id/slot/port</b>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b

***port-id***

Specifies the port ID.

**Values** *slot/mda/port*

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## 21.6 sap-egress

### sap-egress

#### Syntax

**sap-egress** [*policy-id*] [**association** | **match-criteria** | **detail**]

**sap-egress summary**

#### Context

[\[Tree\]](#) (show>qos sap-egress)

#### Full Context

show qos sap-egress

#### Description

This command displays SAP egress QoS policy information.

#### Parameters

##### *policy-id*

Displays information about the specific policy ID.

**Values** 1 to 65535

##### **detail**

Displays detailed policy information including policy associations.

##### **summary**

Displays SAP egress policy summary.

#### Platforms

All

#### Output

The following output is an example of QoS SAP egress information, and [Table 453: Show QoS SAP Egress Output Fields](#) describes the output fields.

#### Output Example

```
*A:PE# show qos sap-egress
```

```

=====
Sap Egress Policies
=====
Policy-Id  Scope      Name          Description
-----
1          Template  default      Default SAP egress QoS policy.
-----
Number of Policies : 1
-----
*A:PE# show qos sap-egress 1 detail
=====
QoS Sap Egress
=====
-----
Sap Egress Policy (1)
-----
Policy-id          : 1          Scope          : Template
Ethernet-ctag     : False       Parent-loc     : default
Name               : default
Description        : Default SAP egress QoS policy.
Policy Active     : True        Plcrs HQoS Managed : False
Post Plcr Mapping Policy: (Not Specified)
HS Attachment Policy : default
-----
Dynamic Configuration Information
-----
PccRule Insert Point : n/a          DynPlcr Insert Point : n/a
CBS                  : Def          MBS                  : Def
Parent               : (Not Specified)
Level                : 1          Weight               : 1
Packet Byte Offset  : 0
Stat Mode            : minimal
-----
Queue Information
-----
Queue-Id           : 1          Queue-Type         : auto-expedite
Admin PIR           : max        Admin CIR          : 0
PIR Percent         : def        CIR Percent        : def
PIR Rule            : closest   CIR Rule           : closest
CBS                 : Def        MBS                : Def
Avg Frame Overhead  : 0.00      Packet Byte Offset : add 0
Adv Config Policy   : (Not Specified)
Parent              : (Not Specified)
PIR Level/Weight    : 1/1       CIR Level/Weight   : 0/1
Burst Limit         : default
Wred Queue Mode     : none      Wred Queue SlopeUsage: not-applicable
Slope Policy        : default
High-Plus Drop Tail : def       High Drop Tail     : def
Low Drop Tail       : def       Exceed Drop Tail   : def
-----
HS Queue Information
-----
Queue-Id           : 1
Admin PIR           : max
    
```



```
PIR Percent      : def
PIR Rule        : closest
MBS             : Def
Packet Byte Offset : add 0
Burst Limit     : default
HS Class Weight  : 1           HS Wrr Weight      : 1
HS Wred-Q Slope Plcy : _tmnx_hs_default
HS Alt Class Pool : False
```

-----  
-----  
HS Wrr Group Information  
-----

```
HS Wrr Group Id   : 1           Class Weight      : 1
Rate              : max         Percent Rate      : 100.00
PIR Adaptation Rule: closest
HS Wrr Group Id   : 2           Class Weight      : 1
Rate              : max         Percent Rate      : 100.00
PIR Adaptation Rule: closest
```

-----  
-----  
Forwarding Class (FC) Classification and Remarking Information  
-----

No Matching Entries  
-----

```
-----  
-----  
FC Queue Queue-Group           InstanceId SapBReDir Plcr  
-----
```

No Matching Entries  
-----

-----  
-----  
Associations  
-----

```
Service-Name   : 1
Service-Id     : 1 (VPLS)           Customer-Id      : 1
- SAP : 2/1/1
- SAP : 5/1/1
```

-----  
-----  
Mirror SAPs  
-----

No Mirror SAPs Found.  
-----

```
-----  
-----  
DSCP          Cntr Id Profile fc  
-----
```

No DSCP-Map Entries Found.  
-----

```
-----  
-----  
Prec Value    Cntr Id Profile fc  
-----
```

No Prec-Map Entries Found.  
-----

```
-----  
-----  
Dot1p         fc Profile  
-----
```

```
No Dot1p-Map Entries Found.
-----
Match Criteria
-----
No Matching Criteria.

*A:PE#
```

Table 453: Show QoS SAP Egress Output Fields

Label	Description
Policy-Id	The ID that uniquely identifies the policy.
Scope	Exclusive — Specifies that this policy can only be applied to a single SAP. Template — Specifies that this policy can be applied to multiple SAPs on the router.
Description	A text string that helps identify the policy context in the configuration file.
Queue	
CIR Admin	Specifies the administrative Committed Information Rate (CIR) parameters for the queue. The CIR defines the rate at which the system prioritizes the queue over other queues competing for the same bandwidth.
CIR Oper	The operational value derived by computing the CIR value from the administrative CIR and PIR values and their corresponding adaptation rules.
CIR Rule	min — The operational CIR for the queue will be equal to or greater than the administrative rate specified using the rate command except where the derived operational CIR is greater than the operational PIR. If the derived operational CIR is greater than the derived operational PIR, the operational CIR will be made equal to the operational PIR. max — The operational CIR for the queue will be equal to or less than the administrative rate specified using the rate command. closest — The operational CIR for the queue will be the rate closest to the rate specified using the rate command without exceeding the operational CIR.
PIR Admin	Specifies the administrative Peak Information Rate (PIR) parameters for the queue. The PIR defines the maximum rate that the queue can transmit packets through the switch fabric (for SAP ingress queues) or out an egress interface (for SAP egress queues).

Label	Description
PIR Oper	The administrative PIR specified by the user.
PIR Rule	<p>min — The operational PIR for the queue will be equal to or greater than the administrative rate specified using the rate command.</p> <p>max — The operational PIR for the queue will be equal to or less than the administrative rate specified using the rate command.</p> <p>closest — The operational PIR for the queue will be the rate closest to the rate specified using the rate command.</p>
CBS	<p>def — Specifies that the CBS value reserved for the queue.</p> <p>value — Specifies the value to override the default reserved buffers for the queue.</p>
MBS	<p>def — Specifies that the MBS value is set by the def-mbs function.</p> <p>value — Specifies the value to override the default maximum size for the queue.</p>
HiPrio	Specifies the percentage of buffer space for the queue, used exclusively by high-priority packets.
PIR Lvl/Wt	<p>Specifies the priority level of the scheduler when compared to other child schedulers and queues vying for bandwidth on the parent schedulers during the above-CIR distribution phase of bandwidth allocation.</p> <p>Weight defines the relative weight of this scheduler in comparison to other child schedulers and queues at the same level.</p>
CIR Lvl/Wt	Specifies the level of hierarchy when compared to other schedulers and queues when vying for bandwidth on the parent scheduler. Weight defines the relative weight of this queue in comparison to other child schedulers and queues while vying for bandwidth on the parent scheduler.
Parent	Specifies the parent scheduler that governs the available bandwidth given the queue aside from the queue's PIR setting.
FC Name	Specifies the forwarding class queue mapping or dot1p marking is to be edited.
Queue-id	Specifies the <i>queue-id</i> that uniquely identifies the queue within the policy.
Explicit/Default	<p>Explicit — Specifies the egress IEEE 802.1p (dot1p) bits marking for <i>fc-name</i>.</p> <p>Default — Specifies that the default dot1p value (0) is used.</p>

Label	Description
Service Association	
Service-Id	The unique service ID number that identifies the service in the service domain.
Customer-Id	Specifies the customer ID that identifies the customer to the service.
SAP	Specifies the Service Access Point (SAP) within the service where the policy is applied.
Mirror SAPs	
Mirror Dest	Specifies the mirror service ID that identifies the service in the service domain.
SAP	Specifies the Service Access Point (SAP) within the service where the SAP egress policy is applied.

## 21.7 sap-ingress

### sap-ingress

#### Syntax

**sap-ingress** [*policy-id*] [**association** | **match-criteria** | **detail**]

**sap-ingress summary**

#### Context

[\[Tree\]](#) (show>qos sap-ingress)

#### Full Context

show qos sap-ingress

#### Description

This command displays SAP ingress QoS policy information.

#### Parameters

##### *policy-id*

Displays information about the specific policy ID.

**Values** 1 to 65535

**Default** all SAP ingress policies

**detail**

Displays detailed policy information including policy associations.

**summary**

Displays SAP ingress policy summary.

**Platforms**

All

**Output**

The following output is an example of QoS SAP ingress information, and [Table 454: Show QoS SAP Ingress Output Fields](#) describes the output fields.

**Output Example**

```
*A:PE# show qos sap-ingress

=====
Sap Ingress Policies
=====
Policy-Id  Scope      Name          Description
-----
1          Template  default       Default SAP ingress QoS policy.
-----
Number of Policies : 1
-----

*A:PE#
*A:PE# show qos sap-ingress 1 detail

=====
QoS Sap Ingress
=====

Sap Ingress Policy (1)
-----
Policy-id      : 1                Scope      : Template
Default FC     : be                Priority   : Low
Criteria-type  : None
Name           : default
Description    : Default SAP ingress QoS policy.
Policy Active  : True

-----
Dynamic Configuration Information
-----
PccRule Insert Point : n/a          DynPlcr Insert Point : n/a
CBS               : Def           MBS               : Def
Parent            : (Not Specified)
Level             : 1                Weight            : 1
Packet Byte Offset : 0
Stat Mode         : minimal

-----
Q  Mode  CIR Admin  PIR Admin  CBS          PIR Lvl/Wt Parent
      CIR Rule  PIR Rule  MBS          CIR Lvl/Wt BurstLimit(B)
      CIR Prcnt  PIR Prcnt  Low Drop Tail
      Pkt Bt Ofst  Adv Config Policy Name
      FIR Admin  FIR Rule  Cir-non-profiling
      FIR Prcnt
```

```

-----
1 Prio 0 max def 1/1 None
closest closest def 0/1 default
def def def
(not-assigned) add 0 (not-assigned)
0 closest disabled
def

11 Prio 0 max def 1/1 None
closest closest def 0/1 default
def def def
(not-assigned) add 0 (not-assigned)
0 closest disabled
def
    
```

```

=====
Sap-Ingress FC (Detail)
=====
    
```

```

No FC-Map Entries Found.
=====
    
```

```

-----
FC DE-1-out-profile Profile In-Remark Out-Remark Egr-Override-FC
-----
    
```

```

No SubFC Map Entries Found.
    
```

```

-----
Dot1p FC Priority
-----
    
```

```

No Dot1p-Map Entries Found.
    
```

```

-----
DSCP FC Priority
-----
    
```

```

No DSCP-Map Entries Found.
    
```

```

-----
Prec Value FC Priority
-----
    
```

```

No Prec-Map Entries Found.
    
```

```

-----
Match Criteria
-----
    
```

```

No Matching Criteria.
    
```

```

-----
Associations
-----
    
```

```

Service-Name : 1
Service-Id : 1 (VPLS) Customer-Id : 1
- SAP : 2/1/1
- SAP : 5/1/1
    
```

```

-----
LSP EXP FC Priority
-----
    
```

```

No LspExp-Map Entries Found.
    
```

```

=====
*A:PE#
    
```

Table 454: Show QoS SAP Ingress Output Fields

Label	Description
Policy-Id	The ID that uniquely identifies the policy.
Scope	Exclusive — Specifies that this policy can only be applied to a single SAP. Template - Specifies that this policy can be applied to multiple SAPs on the router.
Description	A text string that helps identify the policy context in the configuration file.
Default FC	Specifies the default forwarding class for the policy.
Priority	Specifies the enqueueing priority when a packet is marked with a <i>dot1p-value</i> specified.
Criteria-type	IP — Specifies that an IP criteria-based SAP ingress policy is used to select the appropriate ingress queue and corresponding forwarding class for matched traffic. MAC — Specifies that a MAC criteria-based SAP is used to select the appropriate ingress queue and corresponding forwarding class for matched traffic.
Mode	Specifies the configured mode of the meter (trTcm or srTcm).
CIR Admin	Specifies the administrative Committed Information Rate (CIR) parameters for the queue. The CIR defines the rate at which the system prioritizes the queue over other queues competing for the same bandwidth.
CIR Oper	The operational value derived by computing the CIR value from the administrative CIR and PIR values and their corresponding adaptation rules.
CIR Rule	min — The operational CIR for the queue will be equal to or greater than the administrative rate specified using the rate command. max — The operational CIR for the queue will be equal to or less than the administrative rate specified using the rate command. closest — The operational CIR for the queue will be the rate closest to the rate specified using the rate command without exceeding the operational CIR.
PIR Admin	Specifies the administrative Peak Information Rate (PIR) parameters for the queue. The PIR defines the maximum rate that the queue can transmit packets through the switch fabric (for

Label	Description
	SAP ingress queues) or out an egress interface (for SAP egress queues).
PIR Oper	The administrative PIR specified by the user.
PIR Rule	<p>min — The operational PIR for the queue will be equal to or greater than the administrative rate specified using the rate command.</p> <p>max — The operational PIR for the queue will be equal to or less than the administrative rate specified using the rate command.</p> <p>closest — The operational PIR for the queue will be the rate closest to the rate specified using the rate command.</p>
CBS	<p>def — Specifies the default CBS value for the queue.</p> <p>value — Specifies the value to override the default reserved buffers for the queue.</p>
MBS	<p>def — Specifies the default MBS value.</p> <p>value — Specifies the value to override the default MBS for the queue.</p>
HiPrio	Specifies the percentage of buffer space for the queue, used exclusively by high-priority packets.
PIR Lvl/Wt	<p>Specifies the priority level of the scheduler when compared to other child schedulers and queue vying for bandwidth on the parent schedulers during the above-CIR distribution phase of bandwidth allocation.</p> <p>Weight defines the relative weight of this scheduler in comparison to other child schedulers and queue at the same level.</p>
CIR Lvl/Wt	Specifies the level of hierarchy when compared to other schedulers and queue when vying for bandwidth on the parent scheduler. Weight defines the relative weight of this queue in comparison to other child schedulers and queue while vying for bandwidth on the parent scheduler.
Parent	Specifies the parent scheduler that governs the available bandwidth given the queue, aside from the queue's PIR setting.
Dot1p	Specifies the forwarding class or enqueueing priority when a packet is marked with a <i>dot1p-value</i> specified.
FC	Specifies the forwarding class overrides.
Priority	The optional priority setting overrides the default enqueueing priority for the packets received on an ingress SAP that uses the policy that matches this rule.



Label	Description
	<p>High — Specifies that the high enqueueing parameter for a packet increases the likelihood of enqueueing the packet when the ingress queue is congested.</p> <p>Low — Specifies that the low enqueueing parameter for a packet decreases the likelihood of enqueueing the packet when the ingress queue is congested.</p>
DSCP	Specifies the forwarding class or enqueueing priority when a packet is marked with the DiffServ Code Point (DSCP) value.
FC	Specifies one of the predefined forwarding classes in the system. When a packet matches the rule, the forwarding class is only overridden when the <b>fc</b> <i>fc-name</i> parameter is defined on the rule.
Priority	<p>This parameter specifies the default enqueueing priority overrides for all packets received on an ingress SAP using this policy that matches this rule.</p> <p>High — Specifies that the high enqueueing parameter for a packet increases the likelihood of enqueueing the packet when the ingress queue is congested.</p> <p>Low — Specifies that the low enqueueing parameter for a packet decreases the likelihood of enqueueing the packet when the ingress queue is congested.</p>
Prec	Specifies the forwarding class or enqueueing priority when a packet is marked with an IP precedence value ( <i>ip-prec-value</i> ).
UCastQ	Specifies the default unicast forwarding type queue mapping.
MCastQ	Specifies the overrides for the default multicast forwarding type queue mapping.
BCastQ	Specifies the default broadcast forwarding type queue mapping.
UnknownQ	Specifies the default unknown unicast forwarding type queue mapping.
Match Criteria	Specifies an IP or MAC criteria entry for the policy.
Entry	
Source IP	Specifies a source IP address range used for an ingress SAP QoS policy match.
Source Port	Specifies a source TCP or UDP port number or port range used for an ingress SAP QoS policy match.
Protocol	Specifies the IP protocol number to be used for an ingress SAP QoS policy match.

Label	Description
DSCP	Specifies a DiffServ Code Point (DSCP) name used for an ingress SAP QoS policy match.
Fragment	True — Configures a match on all fragmented IP packets. False — Configures a match on all non-fragmented IP packets.
FC	Specifies the entry's forwarding class.
Priority	Specifies the default enqueueing priority overrides for all packets received on an ingress SAP using this policy.
Src MAC	Specifies a source MAC address or range to be used as a Service Ingress QoS policy match.
Dst MAC	Specifies a destination MAC address or range to be used as a Service Ingress QoS policy match.
Dot1p	Specifies a IEEE 802.1p value to be used as the match.
Snap-pid	Specifies an IEEE 802.3 LLC SNAP Ethernet Frame PID value to be used as a Service Ingress QoS policy match.
Ethernet-type	Specifies an Ethernet type II Ethertype value to be used as a Service Ingress QoS policy match.
ESnap-oui-zero	Specifies an IEEE 802.3 LLC SNAP Ethernet Frame OUI zero or non-zero value to be used as a Service Ingress QoS policy match.
DSAP	Specifies an Ethernet 802.2 LLC DSAP value or range for an ingress SAP QoS policy match.
SSAP	Specifies an Ethernet 802.2 LLC DSAP value or range for an ingress SAP QoS policy match.
FC	Specifies the entry's forwarding class.
Priority	Specifies the default enqueueing priority overrides for all packets received on an ingress SAP using this policy.
Service Association	
Service-Id	The unique service ID number that identifies the service in the service domain.
Customer-Id	Specifies the customer ID that identifies the customer to the service.
SAP	Specifies the Service Access Point (SAP) within the service where the SAP ingress policy is applied.

## 21.8 sap-template

### sap-template

#### Syntax

**sap-template** *template-name* **idle-saps**

#### Context

[\[Tree\]](#) (clear>subscr-mgmt sap-template)

#### Full Context

clear subscriber-mgmt sap-template

#### Description

This command deletes any SAPs created with the specified SAP template that are no longer in use by any subscriber sessions.

#### Parameters

##### *template-name*

Specifies the name of a template, up to 256 characters, configured under **configure subscriber-mgmt sap-template**.

##### **idle-saps**

Keyword that specifies to delete any idle SAPs associated with this template.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 21.9 sap-using

### sap-using

#### Syntax

**sap-using** [ingress | egress]

#### Context

[\[Tree\]](#) (show>service sap-using)

#### Full Context

show service sap-using

## Description

Displays SAP information.

If no optional parameters are specified, the command displays a summary of all defined SAPs.

The optional parameters restrict output to only SAPs matching the specified properties.

## Parameters

### ingress

Specifies matching an ingress policy.

### egress

Specifies matching an egress policy.

### qos-policy *qos-policy-id*

The ingress or egress QoS Policy ID for which to display matching SAPs.

**Values** 1 to 65535

### filter *filter-id*

The ingress or egress Filter Policy ID for which to display matching SAPs.

**Values** 1 to 65535

### sap-id

Specifies the physical port identifier portion of the SAP definition.

**Values** The following values apply to the 7750 SR and 7950 XRS:

null	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i> ]
dot1q	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i> ]: <i>qtag1</i>
qinq	[ <i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i> ]: <i>qtag1.qtag2</i>
cem	<i>slot/mda/port.channel</i>
ima-grp	<i>bundle-id</i> [: <i>vpi/vci</i>   <i>vpi</i>   <i>vpi1.vpi2</i> ]
port-id	<i>slot/mda/port</i> [. <i>channel</i> ]
aps-id	<b>aps-group-id</b> [. <i>channel</i> ]
	<b>aps</b> keyword
	<i>group-id</i> 1 to 128
ccag-id	<i>ccag-id.path-id</i> [ <i>cc-type</i> ]: <i>cc-id</i>
	<i>ccag</i> keyword
	<i>id</i> 1 to 8
	<i>path-id</i> a, b

	<i>cc-type</i>	.sap-net, .net-sap
	<i>cc-id</i>	0 to 4094
<i>lag-id</i>	<i>lag-id</i>	
	lag	keyword
	id	1 to 800
qtag1	0 to 4094	
qtag2	*, 0 to 4094	

The following values apply to the 7450 ESS:

<b>Values</b>	null	[ <i>port-id</i>   <i>lag-id</i> ]
	dot1q	[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1</i>
	qinq	[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1.qtag2</i>
	port-id	slot/mda/port[.channel]
	ccag-id	ccag-id. <i>path-id</i> [ <i>cc-type</i> ]: <i>cc-id</i>
	ccag	keyword
	<i>id</i>	1 to 8
	<i>path-id</i>	a, b
	<i>cc-type</i>	.sap-net, .net-sap
	<i>cc-id</i>	0 to 4094
	<i>lag-id</i>	<i>lag-id</i>
	lag	keyword
	<i>id</i>	1 to 800
	qtag1	0. to 4094
	qtag2	*, 0 to 4094

**interface**

Specifies matching SAPs with the specified IP interface.

**ip-addr**

The IP address of the interface for which to display matching SAPs.

**Values** 1.0.0.0 to 223.255.255.255

**ip-int-name**

The IP interface name for which to display matching SAPs.

## Platforms

All

## Output

The following output is an example of service SAP information, and [Table 455: SAP Output Fields](#) describes show service SAP output fields.

### Output Example

```
A:ALA-48>config>service>ies# show service sap-using sap 1/3/2:244/1
=====
Service Access Points Using Port 1/3/2:15990785
=====
PortId          SvcId      I.QoS I.Fltr E.QoS E.Fltr A.Pol  Adm  Opr
-----
1/3/2:244/1     89         1     none  1     none  none  Up   Down
-----
Number of SAPs : 1
-----
A:ALA-48>config>service>ies#
```

Table 455: SAP Output Fields

Label	Description
Port ID	The ID of the access port where the SAP is defined
Svc ID	The service identifier
SapMTU	The SAP MTU value
I.QoS	The SAP ingress QoS policy number specified on the ingress SAP
I.MAC/IP	The MAC or IP filter policy ID applied to the ingress SAP
E.QoS	The SAP egress QoS policy number specified on the egress SAP
E.Mac/IP	The MAC or IP filter policy ID applied to the egress SAP
A.Pol	The accounting policy ID assigned to the SAP
Adm	The desired state of the SAP
Opr	The actual state of the SAP

## sap-using

### Syntax

**sap-using** [msap] [dyn-script] [description]

**sap-using** [sap *sap-id*] [vlan-translation | anti-spoof] [description]

```
sap-using {ingress | egress} atm-td-profile td-profile-id  
sap-using {ingress | egress} filter any-filter-id  
sap-using {ingress | egress} qos-policy qos-policy-id [msap]  
sap-using etree  
sap-using eth-cfm squalch-ingress-levels [all | ctag-space] [sap sap-id]
```

## Context

[\[Tree\]](#) (show>service sap-using)

## Full Context

```
show service sap-using
```

## Description

This command displays SAP information.

If no optional parameters are specified, the command displays a summary of all defined SAPs.

The optional parameters restrict output to only SAPs matching the specified properties.

## Parameters

### ingress

Specifies matching an ingress policy.

### egress

Specifies matching an egress policy.

### *qos-policy-id*

The ingress or egress QoS Policy ID for which to display matching SAPs.

**Values** 1 to 65535

### *td-profile-id*

Displays SAPs using this traffic description for the 7750 SR only.

### *filter-id*

The ingress or egress filter policy ID for which to display matching SAPs.

**Values** 1 to 65535

### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

### dyn-script

Displays dynamic service SAPs information.

### msap

Displays MSAPs.

### vlan-translation

Displays VLAN translation information.

**anti-spoof**

Displays anti-spoof information.

**squelch-ingress-level**

Displays ETH-CFM squelching information of the type matching the service delimited configuration.

**all**

Displays all squelch ingress levels information regardless of type.

**ctag-space**

Displays all squelch-ingress-levels information that is skipping additional VLAN space.

**Platforms**

All

**Output**

The following output is an example of sap-using using information, and [Table 456: Show Service SAP Output Fields](#) describes the output fields.

**Output Example**

```
*A:Dut-A# show service sap-using
=====
Service Access Points
=====
PortId                SvcId      Ing.  Ing.  Egr.  Egr.  Adm  Opr
                    QoS       QoS   Fltr  QoS   Fltr
-----
1/1/1:1                1          1    none  1     none  Up   Up
2/1/2:10/11            1          1    none  1     none  Up   Up
2/1/2:10/12            1          1    none  1     none  Up   Up
2/1/2:20/11            1          1    none  1     none  Up   Up
2/1/2:20/12            1          1    none  1     none  Up   Up
2/1/4:cp.10            10         1    none  1     none  Up   Up
2/1/4:cp.20            20         1    none  1     none  Up   Up
-----
Number of SAPs : 7
=====
```

The following output is an example of SAP information for a specific SAP for the 7450 ESS or 7750 SR.

```
A:ALA-42#
*A:ALA-48# show service sap-using sap 1/1/21:0
=====
Service Access Points Using Port 1/1/21:0
=====
PortId                SvcId      Ing.  Ing.  Egr.  Egr.  Anti  Adm  Opr
                    QoS       QoS   Fltr  QoS   Fltr  Spoof
-----
1/1/21:0                1          1    none  1     none  none  Up   Down
-----
Number of SAPs : 1
=====
*A:ALA-48#
```



The following output is an example of SAP information for the egress traffic policy for the 7750 SR.

```
*A:ALA-12# show service sap-using egress atm-td-profile 2
=====
Service Access Point Using ATM Traffic Profile 2
=====
PortId SvcId I.QoS I.Fltr E.QoS E.Fltr A.Pol Adm Opr
-----
5/1/1:0/11 511111 2 none 2 none none Up Up
5/1/1:0/12 511112 2 none 2 none none Up Up
5/1/1:0/13 511113 2 none 2 none none Up Up
5/1/1:0/14 511114 2none 2 none none Up Up
5/1/1:0/15 511115 2 none 2 none none Up Up
5/1/1:0/16 511116 2 none 2 none none Up Up
5/1/1:0/17 511117 2 none 2 none none Up Up
5/1/1:0/18 511118 2 none 2 none none Up Up
5/1/1:0/19 511119 2 none 2 none none Up Up
5/1/1:0/20 511120 2 none 2 none none Up Up
5/1/1:0/21 511121 2 none 2 none none Up Up
5/1/1:0/22 511122 2 none 2 none none Up Up
5/1/1:0/23 511123 2 none 2 none none Up Up
5/1/1:0/24 511124 2 none 2 none none Up Up
5/1/1:0/25 511125 2 none 2 none none Up Up
...
=====
*A:ALA-12#
```

The following output is an example of squelch ingress levels information.

```
show service sap-using eth-cfm squelch-ingress-levels
=====
ETH-CFM Squelching
=====
SapId          SvcId          Squelch Level
-----
1/1/9:2.*      2              0 1 2
1/1/9:3.*      3              0 1 2 3 4
-----
Number of SAPs: 2
=====

show service sap-using eth-cfm squelch-ingress-levels ctag-space
=====
ETH-CFM Squelching CTAG Space
=====
SapId          SvcId          Squelch Level
-----
1/1/9:3.*      3              0 1 2 3
-----
Number of SAPs: 1
=====

show service sap-using eth-cfm squelch-ingress-levels all
=====
ETH-CFM Squelching
=====
SapId          SvcId          Squelch Level
-----
1/1/9:2.*      2              0 1 2
1/1/9:3.*      3              0 1 2 3 4
-----
Number of SAPs: 2
```

```

=====
ETH-CFM Squelching CTAG Space
=====
SapId                SvcId                Squelch Level
-----
1/1/9:3.*            3                    0 1 2 3
-----
Number of SAPs: 1
=====

show service sap-using eth-cfm squelch-ingress-levels sap 1/1/9:3.*
=====
ETH-CFM Squelching
=====
SapId                SvcId                Squelch Level
-----
1/1/9:3.*            3                    0 1 2 3 4
-----
Number of SAPs: 1
=====
    
```

Table 456: Show Service SAP Output Fields

Label	Description
Port ID	The ID of the access port where the SAP is defined
Svc ID	The service identifier
Sap MTU	The SAP MTU value
Ing. QoS	The SAP ingress QoS policy number specified on the ingress SAP
Ing Fltr	The MAC or IP filter policy ID applied to the ingress SAP
Egr. QoS	The SAP egress QoS policy number specified on the egress SAP for the 7450 ESS and 7750 SR only
Egr. Fltr	The MAC or IP filter policy ID applied to the egress SAP
Adm	The administrative state of the SAP
Opr	The operational state of the SAP
SapId	The ID that displays SAPs for the service
Squelch Level	The CFM levels configured for silent discard

## sap-using

### Syntax

**sap-using** [ingress | egress] atm-td-profile *td-profile-id*

## Context

[\[Tree\]](#) (show>service sap-using)

## Full Context

show service sap-using

## Description

Displays **atm-td-profile** SAP information.

If no optional parameters are specified, the command displays a summary of all defined SAPs.

The optional parameters restrict output to only SAPs matching the specified properties.

## Parameters

### ingress

Specifies matching an ingress policy.

### egress

Specifies matching an egress policy.

### qos-policy *qos-policy-id*

The ingress or egress QoS Policy ID for which to display matching SAPs.

**Values** 1 to 65535

### filter *filter-id*

The ingress or egress Filter Policy ID for which to display matching SAPs.

**Values** 1 to 65535

### sap-id

Specifies the physical port identifier portion of the SAP definition.

**Values** The following values apply to the 7750 SR and 7950 XRS:

null	<i>[port-id   bundle-id   bpgrp-id   lag-id   aps-id]</i>
dot1q	<i>[port-id   bundle-id   bpgrp-id   lag-id   aps-id]:qtag1</i>
qinq	<i>[port-id   bundle-id   bpgrp-id   lag-id]:qtag1.qtag2</i>
cem	<i>slot/mda/port.channel</i>
ima-grp	<i>bundle-id[:vpi/vci   vpi   vpi1.vpi2]</i>
port-id	<i>slot/mda/port[.channel]</i>
aps-id	<i>aps-group-id[.channel]</i>
aps	keyword
group-id	1 to 64
ccag-id	<i>ccag-id.path-id[cc-type]:cc-id</i>

	<i>ccag</i>	keyword
	<i>id</i>	1 to 8
	<i>path-id</i>	a, b
	<i>cc-type</i>	.sap-net, .net-sap
	<i>cc-id</i>	0 to 4094
<i>lag-id</i>	<i>lag-id</i>	
	<i>lag</i>	keyword
	<i>id</i>	1 to 800
<i>qtag1</i>		0 to 4094
<i>qtag2</i>		*, 0 to 4094

The following values apply to the 7450 ESS:

Values		
	null	[ <i>port-id</i>   <i>lag-id</i> ]
	dot1q	[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1</i>
	qinq	[ <i>port-id</i>   <i>lag-id</i> ]: <i>qtag1</i> . <i>qtag2</i>
	frame	[ <i>port-id</i> ]: <i>dlci</i>
	port-id	slot/mda/port[.channel]
	<i>ccag-id</i>	<i>ccag-id</i> . <i>path-id</i> [ <i>cc-type</i> ]: <i>cc-id</i>
		<i>ccag</i> keyword
		<i>id</i> 1 to 8
		<i>path-id</i> a, b
		<i>cc-type</i> .sap-net, .net-sap
		<i>cc-id</i> 0 to 4094
	<i>lag-id</i>	<i>lag-id</i>
		<i>lag</i> keyword
		<i>id</i> 1 to 800
	<i>qtag1</i>	0. to 4094
	<i>qtag2</i>	*, 0 to 4094
	<i>dlci</i>	16 to 1022

**interface**

Specifies matching SAPs with the specified IP interface.

**ip-addr**

The IP address of the interface for which to display matching SAPs.

**Values** 1.0.0.0 to 223.255.255.255

**ip-int-name**

The IP interface name for which to display matching SAPs.

**td-profile-id**

Profile ID that identifies a specific profile to display.

**Platforms**

All

**Output**

The following output is an example of service SAP information, and [Table 457: SAP Output Fields](#) describes show service SAP output fields.

**Output Example**

```
A:ALA-48>config>service>ies# show service sap-using sap 1/3/2:244/1
=====
Service Access Points Using Port 1/3/2:15990785
=====
PortId          SvcId    I.QoS I.Fltr E.QoS E.Fltr A.Pol  Adm  Opr
-----
1/3/2:244/1    89       1     none  1     none  none   Up   Down
-----
Number of SAPs : 1
-----
A:ALA-48>config>service>ies#
```

Table 457: SAP Output Fields

Label	Description
Port ID	The ID of the access port where the SAP is defined.
Svc ID	The service identifier.
SapMTU	The SAP MTU value.
I.QoS	The SAP ingress QoS policy number specified on the ingress SAP.
I.MAC/IP	The MAC or IP filter policy ID applied to the ingress SAP.
E.QoS	The SAP egress QoS policy number specified on the egress SAP.
E.Mac/IP	The MAC or IP filter policy ID applied to the egress SAP.
A.Pol	The accounting policy ID assigned to the SAP.

Label	Description
Adm	The desired state of the SAP.
Opr	The actual state of the SAP.

## 21.10 sap-using aarp

### sap-using aarp

#### Syntax

**sap-using aarp** *aarp-id*

#### Context

[\[Tree\]](#) (show>service sap-using aarp)

#### Full Context

show service sap-using aarp

#### Description

This command displays SAP information for a specific AARP ID.

#### Parameters

***aarp-id***

Specifies the AARP ID.

**Values** 1 to 65535

#### Platforms

All

## 21.11 sap-using app-profile

### sap-using app-profile

#### Syntax

**sap-using app-profile** *app-profile-name*

## Context

[\[Tree\]](#) (show>service sap-using app-profile)

## Full Context

show service sap-using app-profile

## Description

This command displays information about SAPs using the specified application profile.

## Parameters

### *app-profile-name*

Specifies an existing application profile name created in the **config>app-assure>group>policy** context.

## Platforms

All

## Output

The following output is an example of the **sap-using app profile** command information.

### Output Example

```
*A:ALA-48# show service sap-using app-profile test
=====
Service Access Point Using Application Profile 'test'
=====
PortId                SvcId      Ing.   Ing.   Egr.   Egr.   Adm  Opr
                    QoS       QoS   Fltr   QoS   Fltr
-----
1/1/18:0              89         1     none  1     none  Up   Down
-----
Number of SAPs : 1
-----
*A:ALA-48#
```

## 21.12 sap-using transit-policy

### sap-using transit-policy

## Syntax

**sap-using transit-policy ip** *transit-ip-policy*

**sap-using transit-policy prefix** *transit-prefix-policy*

## Context

[\[Tree\]](#) (show>service sap-using transit-policy)

## Full Context

show service sap-using transit-policy

## Description

This command displays SAP information for a specific transit IP policy or transit prefix policy.

## Parameters

### *transit-ip-policy*

Specifies the transit IP policy ID.

**Values** 1 to 65535

### *transit-prefix-policy*

Specifies a transit prefix policy ID.

**Values** 1 to 65535

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 21.13 saps

### saps

## Syntax

**saps** [**control-session** *acct-session-id*] [**port** *port-id*] [**dynsvc-policy** *policy-name*] [**summary**] [**sap** *sap-id*] [**svc-id** *service-id*]

## Context

[\[Tree\]](#) (show>service>dynsvc saps)

## Full Context

show service dynamic-services saps

## Description

This command displays Dynamic Services SAPs (instances) details.



### Note:

This command is not available in the MD-CLI.

## Parameters

### **summary**

Displays a summary view only.



**acct-session-id**

Specifies control session accounting session id.

**port-id**

Specifies Ethernet port.

**policy-name**

Specifies dynamic services policy.

**sap sap-id**

Specifies dynamic services SAP id.

**service-id**

The service ID of the dynamic service.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of dynamic service SAP information.

**Output Example**

```
# show service dynamic-services saps
=====
Dynamic Services SAP's
=====
SAP                               : 1/1/1:1.901
-----
Acct session-ID                   : 242FFF000001AE512CE4B6
Acct session-ID control           : 242FFF000001AB512CE4B6
Service                           : [100000]
Dynamic Services policy           : dynsvc-policy-1
Number of scripts executed         : 1
Number of scripts w success       : 1
Last script action                 : setup
Time of last script action         : 2013/02/26 16:37:10
Parameters of last action          : vprn_1={'t':('VRF-1',65000,1000,'cpe-int-1','192.
                                     : 168.20.1/24','2001:db8:cafe::1/64',901,901,910,92
                                     : 0,'192.168.20.0/24','192.168.20.2')}

Accounting instance 1
Status                             : enabled
Stats type                         : volume-time
Update interval (minutes)          : 30

Accounting instance 2
Status                             : enabled
Stats type                         : time
Update interval (minutes)          : 0

-----
No. of SAP's: 1
=====

# show service dynamic-services saps summary
=====
Dynamic Services SAP's summary
```

```

=====
SAP                               Acct-Session-ID       Acct-Session-ID-Ctrl
-----
1/1/1:1.901                       242FFF000001AE512CE4B6 242FFF000001AB512CE4B6
-----
No. of SAP's: 1
=====
    
```

Table 458: Dynamic Services SAP Field Descriptions describes Dynamic Services SAP fields.

Table 458: Dynamic Services SAP Field Descriptions

Output field	Description
SAP	The dynamic service SAP ID.
Acct session-ID	The dynamic service accounting session ID.
Acct session-ID control	The control channel accounting session ID.
Service	The dynamic service ID.
Dynamic Services policy	The policy referenced to setup the dynamic service.
Number of scripts executed	The number of times the script was executed for this dynamic service (setup, modify, revert or teardown).
Number of scripts w success	The number of times the script was executed successfully for this dynamic service.
Last script action	The setup, modify, revert, teardown.
Time of last script action	The timestamp of the last script action.
Parameters of last action	The content of the Dynamic Services Script Parameters attribute corresponding with the last action.
Status	RADIUS accounting is enabled or disabled.
Stats type	The type of statistics reported in accounting.
Update interval (minutes)	The time, in minutes, between Accounting Interim Update messages.

## 21.14 satellite

### satellite

#### Syntax

satellite

## Context

[\[Tree\]](#) (clear>system satellite)

## Full Context

clear system satellite

## Description

Commands in this context clear satellite information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## satellite

## Syntax

satellite

## Context

[\[Tree\]](#) (show>system satellite)

## Full Context

show system satellite

## Description

This command displays a list of configured satellites including information about the satellite's esat-ID or tsat-ID, satellite type, and state.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of satellite information.

### Output Example

```
A:Dut-A# show system satellite
=====
Satellite Information
=====
SatID      Provisioned Type          Admin   Oper
           Equipped Type (if different) State   State
-----
esat-1     es48-1gb-sfp             up      provisioned
           (not equipped)
esat-20    es48-1gb-sfp             up      up
tsat-2     ts4-choc3-sfp            up      up
tsat-3     ts4-choc3-sfp            up      up
```

```
-----  
No. of Satellites: 4  
=====
```

## satellite

### Syntax

**satellite**

### Context

[\[Tree\]](#) (tools>perform satellite)

### Full Context

tools perform satellite

### Description

Commands in this context perform satellite operations.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 21.15 schedule

## schedule

### Syntax

**schedule** [*schedule-name*] [**owner** *owner-name*]

### Context

[\[Tree\]](#) (show>system>cron schedule)

### Full Context

show system cron schedule

### Description

This command displays cron schedule parameters.

### Parameters

***schedule-name***

Specifies the scheduler name, up to 32 characters.

**owner-name**

Specifies the scheduler owner name, up to 32 characters.

**Platforms**

All

**Output**

The following output is an example of cron schedule information. The following table describes the output fields.

**Output Example**

```
A:sim1>show>cron schedule test
=====
CRON Schedule Information
=====
Schedule                : test
Schedule owner          : TiMOS CLI
Description              : none
Administrative status   : enabled
Operational status      : enabled
Action                  : test
Action owner            : TiMOS CLI
Script                  : test
Script Owner            : TiMOS CLI
Script source location  : ftp://*****:*****@192.168.15.1/home/testlab_bgp
                        /cron/test1.cfg
Script results location : ftp://*****:*****@192.168.15.1/home/testlab_bgp
                        /cron/res
Schedule type           : periodic
Interval                : 0d 00:01:00 (60 seconds)
Next scheduled run      : 0d 00:00:42
Weekday                 : tuesday
Month                   : none
Day of month            : none
Hour                    : none
Minute                  : none
Number of schedule runs : 10
Last schedule run       : 2008/01/01 17:20:52
Number of schedule failures : 0
Last schedule failure   : no error
Last failure time       : never
=====
A:sim1>show>cron
```

*Table 459: Cron Schedule Field Descriptions*

Label	Description
Schedule	Displays the schedule name.
Schedule owner	Displays the owner name of the action.
Description	Displays the schedule's description.
Administrative status	Enabled — The administrative status is enabled.

Label	Description
	Disabled — Administratively disabled.
Operational status	Enabled — The operational status is enabled. Disabled — Operationally disabled.
Action	Displays the action name.
Action owner	Displays the name of action owner.
Script	Displays the name of the script.
Script owner	Displays the name of the script.
Script owner	Displays the name of the of script owner.
Script source location	Displays the location of scheduled script.
Script results location	Displays the location where the script results have been sent.
Schedule type	Periodic — Displays a schedule which ran at a given interval. Calendar — Displays a schedule which ran based on a calendar. Oneshot — Displays a schedule which ran one time only.
Interval	Displays the interval between runs of an event.
Next scheduled run	Displays the time for the next scheduled run.
Weekday	Displays the configured weekday.
Month	Displays the configured month.
Day of Month	Displays the configured day of month.
Hour	Displays the configured hour.
Minute	Displays the configured minute.
Number of scheduled runs	Displays the number of scheduled sessions.
Last scheduled run	Displays the last scheduled session.
Number of scheduled failures	Displays the number of scheduled sessions that failed to execute.
Last scheduled failure	Displays the last scheduled session that failed to execute.
Last failure time	Displays the system time of the last failure.

## 21.16 scheduler-hierarchy

### scheduler-hierarchy

#### Syntax

**scheduler-hierarchy**

#### Context

[\[Tree\]](#) (show>qos scheduler-hierarchy)

#### Full Context

show qos scheduler-hierarchy

#### Description

This command displays scheduler-hierarchy information.

#### Platforms

All

## 21.17 scheduler-name

### scheduler-name

#### Syntax

**scheduler-name** *scheduler-name*

#### Context

[\[Tree\]](#) (show>qos scheduler-name)

#### Full Context

show qos scheduler-name

#### Description

This command displays the scheduler policies using the specified scheduler.

#### Parameters

***scheduler-name***

The name of a scheduler configured in the **config>qos>scheduler-policy>tier** context.

## Platforms

All

## Output

The following output is an example of scheduler name information.

### Output Example

```
A:ALA-12# show qos scheduler-name NetworkControl
=====
Scheduler : NetworkControl
=====
Scheduler Policy   : SLA1
Scheduler Policy   : alpha
Scheduler Policy   : beta
=====
A:ALA-12#
```

## 21.18 scheduler-policy

### scheduler-policy

#### Syntax

```
scheduler-policy [scheduler-policy-name] [ association | sap-ingress policy-id | sap-egress policy-id ]
scheduler-policy scheduler-policy-name { ingress | egress } queue-group queue-grp-name
```

#### Context

[\[Tree\]](#) (show>qos scheduler-policy)

#### Full Context

```
show qos scheduler-policy
```

#### Description

Use this command to display scheduler policy information.

#### Parameters

##### ***scheduler-policy-name***

The name of a scheduler policy configured in the **config>qos>scheduler-policy** context.

##### **association**

Displays the associations related to the specified scheduler name.

##### **sap-ingress** *policy-id*

Specifies the SAP ingress QoS policy information.



**sap-egress *policy-id***

Specifies the SAP egress QoS policy information.

**{*ingress* | *egress*}**

Specifies the direction to display and are mutually exclusive.

***queue-grp-name***

Displays information for the specified queue group.

**Platforms**

All

**Output**

The following output is an example of scheduler policy information, and [Table 460: Show QoS Scheduler-Policy Output Fields](#) describes the customer scheduler hierarchy fields.

**Output Example**

```
A:ALA-12# show qos scheduler-policy SLA1
=====
QoS Scheduler Policy
=====
Policy-Name      : SLA1
Description      : NetworkControl(3), Voice(2) and NonVoice(1) have strict priorities
-----
Tier/Scheduler          Lvl/Wt   PIR      Parent
                        CIR Lvl/Wt CIR
-----
1 All_traffic           1/1      11000    None
                        -/-      max
2 NetworkControl       3/1      100      All_traffic
                        3/-      max
2 NonVoice              1/1      11000    All_traffic
                        1/-      max
2 Voice                 2/1      5500     All_traffic
                        2/-      max
3 Internet_be           1/1      max      NonVoice
                        1/-      max
3 Internet_priority    2/1      max      NonVoice
                        2/-      max
3 Internet_voice       1/1      max      Voice
                        -/-      max
3 VPN_be                1/1      max      NonVoice
                        1/-      max
3 VPN_nc                1/1      100      NetworkControl
                        -/-      36
3 VPN_priority         2/1      max      NonVoice
                        2/-      max
3 VPN_reserved         3/1      max      NonVoice
                        3/-      max
3 VPN_video            5/1      1500     NonVoice
                        5/-      1500
3 VPN_voice            1/1      2500     Voice
                        -/-      2500
=====

A:ALA-12# show qos scheduler-policy SLA1 association
=====
QoS Scheduler Policy
=====
```

```
Policy-Name      : SLA1
Description      : NetworkControl(3), Voice(2) and NonVoice(1) have strict priorities
-----
Associations
-----
Service-Id      : 6000 (Epipe)                Customer-Id : 274
- SAP : 1/1/3.1:0 (Egress)
Service-Id      : 7000 (VPLS)                Customer-Id : 7
- SAP : 1/1/5:0 (Egress)
- Multi Service Site : west (Ingress)
=====
```

```
A:ALA-12# show qos scheduler-policy SLA1 sap-egress 101
```

```
=====
Compatibility : Scheduler Policy SLA1 & Sap Egress 101
=====
```

```
Orphan Queues :
```

```
None Found
```

```
Hierarchy      :
```

```
Root
|
|---(S) : All_traffic
|
|   |---(S) : NetworkControl
|   |
|   |   |---(S) : VPN_nc
|   |
|   |   |---(S) : NonVoice
|   |   |
|   |   |---(S) : Internet_be
|   |   |---(S) : Internet_priority
|   |   |---(S) : VPN_be
|   |   |---(S) : VPN_priority
|   |   |---(S) : VPN_reserved
|   |   |---(S) : VPN_video
|   |
|   |---(S) : Voice
|   |
|   |   |---(S) : Internet_voice
|   |   |---(S) : VPN_voice
|
=====
```

```
show qos scheduler-policy "sched1" sap-ingress 100
```

```
=====
Compatibility : Scheduler Policy sched1 & Sap Ingress 100
=====
```

```
Orphan Queues :
```

```
None Found
```

```
Orphan Policers :
```

```
None Found
```

```
Hierarchy      :
```

```
Root
|
|---(S) : sch1
```

```

  |    |    | --- (S) : sch21
  |    |    |    | --- (Q) : 2
  |    |    |    | --- (P) : 16
  |    |    | --- (S) : sch22
  |    |    |    | --- (Q) : 3
  |    |    |    | --- (Q) : 17
  |    | --- (S) : sch2
  |    |    | --- (S) : sch23
  |    |    |    | --- (Q) : 4
  |    |    |    | --- (Q) : 18
  |    |    | --- (S) : sch24
  |    |    |    | --- (Q) : 5
  |    |    |    | --- (P) : 19
  |    | --- (Q) : 1
  |    | --- (Q) : 6
  |    | --- (Q) : 7
  |    | --- (Q) : 11
  |    | --- (Q) : 16
  |    | --- (Q) : 19
  |    | --- (P) : 17
  |    | --- (P) : 18
  |    |-----

```

Table 460: Show QoS Scheduler-Policy Output Fields

Label	Description
Policy-Name	Specifies the scheduler policy name.
Description	Specifies a text string that helps identify the policy context in the configuration file.
Tier	Specifies the level of hierarchy that a group of schedulers are associated with.
Scheduler	Specifies the scheduler name.
Lvl/Wt	Specifies the priority level of the scheduler when compared to other child schedulers and queues vying for bandwidth on the

Label	Description
	parent schedulers during the above-CIR distribution phase of bandwidth allocation.  Weight defines the relative weight of this scheduler in comparison to other child schedulers and queues at the same level.
Cir Lvl/Wt	Specifies the level of hierarchy when compared to other schedulers and queues when vying for bandwidth on the parent scheduler. Weight defines the relative weight of this queue in comparison to other child schedulers and queues while vying for bandwidth on the parent scheduler.
PIR	Specifies the PIR rate.
CIR	Specifies the CIR rate.
Parent	Specifies the parent scheduler that governs the available bandwidth given the queue aside from the PIR setting of the queue.
Service-Id	Specifies the ID that uniquely identifies the policy.
Customer-Id	Specifies the ID that uniquely identifies the customer.
SAP	Specifies the Service Access Point (SAP) within the service where the policy is applied.
Multi Service Site	Specifies the multiservice site name.
Orphan Queues	Specifies the number of queues in an orphaned state.
Hierarchy	Displays the scheduler policy tree structure.

## 21.19 scheduler-stats

### scheduler-stats

#### Syntax

**scheduler-stats**

#### Context

**[Tree]** (clear>qos scheduler-stats)

#### Full Context

clear qos scheduler-stats

## Description

This command clears scheduler statistics.

## Platforms

All

## scheduler-stats

## Syntax

**scheduler-stats**

## Context

[\[Tree\]](#) (show>qos scheduler-stats)

## Full Context

show qos scheduler-stats

## Description

This command displays scheduler statistics information.

## Platforms

All

## scheduler-stats

## Syntax

**scheduler-stats**

## Context

[\[Tree\]](#) (monitor>qos scheduler-stats)

## Full Context

monitor qos scheduler-stats

## Description

Commands in this context configure monitor commands for scheduler statistics.

## Platforms

All

## 21.20 screen

screen

### Syntax

screen

### Context

[\[Tree\]](#) (clear screen)

### Full Context

clear screen

### Description

This command allows an operator to clear the Telnet or console screen.

### Platforms

All

## 21.21 script

script

### Syntax

script

### Context

[\[Tree\]](#) (show>service>dynsvc script)

### Full Context

show service dynamic-services script

### Description

Commands in this context show dynamic services script information.



#### Note:

These commands are not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## script

## Syntax

```
script [script-name] [owner script-owner]
```

## Context

[\[Tree\]](#) (show>system>script-control script)

## Full Context

```
show system script-control script
```

## Description

This command displays script parameters.

## Parameters

### *script-name*

Displays information for the specified script. 32 characters maximum.

### *script-owner*

Displays information for the specified script owner. 32 characters maximum.

## Platforms

All

## Output

The following output is an example of show script command information, and [Table 461: Show Script Output](#) describes the output fields.

## Output Example

```
A:sim1>show>system>script-control# script
=====
Script Information
=====
Script                : test
Owner name            : TiMOS CLI
Description           : asd
Administrative status : enabled
Operational status   : enabled
Script source location : ftp://****:*****@192.168.100.1/home/testlab_bgp
                       /test1.cfg
Last script error     : none
Last change           : 2015/01/07 17:10:03
=====
A:sim1>show>cron#
```

Table 461: Show Script Output

Label	Description
Script	Displays the name of the script.
Script owner	Displays the owner name of script.
Administrative status	Enabled — Administrative status is enabled. Disabled — Administratively disabled.
Operational status	Enabled — Operational status is enabled. Disabled — Operationally disabled.
Script source location	Displays the location of scheduled script.
Last script error	Displays the system time of the last error.
Last change	Displays the system time of the last change.

## 21.22 script-control

### script-control

#### Syntax

**script-control**

#### Context

[\[Tree\]](#) (show>system script-control)

#### Full Context

show system script-control

#### Description

Commands in this context display script information.

#### Platforms

All



## script-control

### Syntax

**script-control**

### Context

[\[Tree\]](#) (tools>perform>system script-control)

### Full Context

tools perform system script-control

### Description

This command performs script-control operations.

### Platforms

All

## script-control

### Syntax

**script-control**

### Context

[\[Tree\]](#) (clear>system script-control)

### Full Context

clear system script-control

### Description

Commands in this context clear script information.

### Platforms

All

## 21.23 script-policy

### script-policy

#### Syntax

```
script-policy script-policy-name [owner owner-name]  
script-policy run-history [run-state]
```

#### Context

[\[Tree\]](#) (show>system>script-control script-policy)

#### Full Context

```
show system script-control script-policy
```

#### Description

This command displays script policy information.

#### Parameters

##### *script-policy-name*

Displays policy information for the specified script. 32 characters maximum.

##### *owner-name*

Displays information for the specified script owner. 32 characters maximum.

**Default** TiMOS CLI

##### *run-state*

Displays information for script policies in the specified state.

**Values** executing, initializing, terminated

#### Platforms

All

#### Output

The following output is an example of script policy information, and [Table 462: Script Policy Output](#) describes the output fields.

#### Output Example

```
*A:Redundancy# show system script-control script-policy run-history terminated  
=====
```

Script-policy Run History
Script policy "test"
Owner "TiMOS CLI"

```
=====
```

```
-----
Script Run #17
-----
Start time : 2006/11/06 20:30:09 End time : 2006/11/06 20:35:24
Elapsed time : 0d 00:05:15 Lifetime : 0d 00:00:00
State : terminated Run exit code : noError
Result time : 2006/11/06 20:35:24 Keep history : 0d 00:49:57
Error time : never
Results file : ftp://*:*@192.168.15.18/home/testlab_bgp/cron/_20061106-203008.
out
Run exit : Success
-----
Script Run #18
-----
Start time : 2006/11/06 20:35:24 End time : 2006/11/06 20:40:40
Elapsed time : 0d 00:05:16 Lifetime : 0d 00:00:00
State : terminated Run exit code : noError
Result time : 2006/11/06 20:40:40 Keep history : 0d 00:55:13
Error time : never
Results file : ftp://*:*@192.168.15.18/home/testlab_bgp/cron/_20061106-203523.
out
Run exit : Success
-----
*A:Redundancy#

*A:Redundancy# show system script-control script-policy run-history executing
=====
Script-policy Run History
=====
Script policy "test"
Owner "TiMOS CLI"
-----
Script Run #20
-----
Start time : 2006/11/06 20:46:00 End time : never
Elapsed time : 0d 00:00:56 Lifetime : 0d 00:59:04
State : executing Run exit code : noError
Result time : never Keep history : 0d 01:00:00
Error time : never
Results file : ftp://*:*@192.168.15.18/home/testlab_bgp/cron/_20061106-204559.
out
=====
*A:Redundancy#

*A:Redundancy# show system script-control script-policy run-history initializing
=====
Script-policy Run History
=====
Script policy "test"
Owner "TiMOS CLI"
-----
Script Run #21
-----
Start time : never End time : never
Elapsed time : 0d 00:00:00 Lifetime : 0d 01:00:00
State : initializing Run exit code : noError
Result time : never Keep history : 0d 01:00:00
Error time : never
Results file : none
-----
Script Run #22
-----
Start time : never End time : never
Elapsed time : 0d 00:00:00 Lifetime : 0d 01:00:00
```

```

State : initializing Run exit code : noError
Result time : never Keep history : 0d 01:00:00
Error time : never
Results file : none
-----
Script Run #23
-----
Start time : never End time : never
Elapsed time : 0d 00:00:00 Lifetime : 0d 01:00:00
State : initializing Run exit code : noError
Result time : never Keep history : 0d 01:00:00
Error time : never
Results file : none
=====
*A:Redundancy#
    
```

Table 462: Script Policy Output

Label	Description
Script policy	Displays the name of the script policy.
Script policy owner	Displays the name of the script policy owner.
Administrative status	Enabled — Administrative status is enabled. Disabled — Administrative status is disabled.
Script	Displays the name of the script.
Script owner	Displays the name of the script owner.
Script source location	Displays the location of scheduled script.
Max running allowed	Displays the maximum number of allowed sessions.
Max completed run histories	Displays the maximum number of sessions previously run.
Max lifetime allowed	Displays the maximum amount of time the script may run.
Completed run histories	Displays the number of completed sessions.
Executing run histories	Displays the number of sessions in the process of executing.
Initializing run histories	Displays the number of sessions ready to run/queued but not executed.
Max time tun history saved	Displays the maximum amount of time to keep the results from a script run.
Last change	Displays the system time a change was made to the configuration.
Script start error	Displays the error found while executing the script.

Label	Description
Max row empire time	Reserved for SNMP.
Last application	Displays the last application used to execute the script.
Last auth. user account	Displays the last user used to execute the script. If no user is specified in "configure system cli-script authorization event-handler/cron" then the user is not specified.

## script-policy

### Syntax

**script-policy**

### Context

[\[Tree\]](#) (tools>perform>system>script-control script-policy)

### Full Context

tools perform system script-control script-policy

### Description

This command performs script-policy operations.

### Platforms

All

## script-policy

### Syntax

**script-policy**

### Context

[\[Tree\]](#) (clear>system>script-control script-policy)

### Full Context

clear system script-control script-policy

### Description

Commands in this context clear script policy information.

### Platforms

All

## 21.24 scripts

### scripts

#### Syntax

scripts

#### Context

[\[Tree\]](#) (show>log>event-handling scripts)

#### Full Context

show log event-handling scripts

#### Description

This command displays handler configuration and script run queue information.

#### Platforms

All

#### Output

The following output is an example of log event handling script information.

#### Output Example

```
=====
Event Handling System - Script Policy Association
=====
-----
No Matching Entries Found
=====
Event Handling System - Script Association
=====
-----
No Matching Entries Found
=====
Event Handling System - Script Launched List
=====
Run #      Script owner          Script name           Script state
-----
No Matching Entries
=====
```

## 21.25 sctp-filter

```
sctp-filter
```

### Syntax

```
sctp-filter sctp-filter-name
```

### Context

[\[Tree\]](#) (show>app-assure>group sctp-filter)

### Full Context

```
show application-assurance group sctp-filter
```

### Description

This command displays Stream Control Transmission Protocol (SCTP) filter information

### Parameters

***sctp-filter-name***

Specifies an SCTP filter, up to 256 characters. When a filter is specified, all traffic is examined as described in the tmnxBsxSctpFltrTable.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 21.26 sdp

```
sdp
```

### Syntax

```
sdp all | sdp-id:vc-id
```

### Context

[\[Tree\]](#) (show>subscr-mgmt>errors sdp)

### Full Context

```
show subscriber-mgmt errors sdp
```

### Description

This command sorts all the subscriber errors by SDP.

## Parameters

### all

Shows all errors beginning with the lowest SDP index.

### **sdp-id:vc-id**

Shows only the error of a specific SDP index.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

[Table 463: Subscriber Management SDP Error Field Descriptions](#) describes subscriber management SDP error output fields.

*Table 463: Subscriber Management SDP Error Field Descriptions*

Field	Description
SDP	The SDP ID associated with the error
Time	The time this error was reported to the subscriber management errors subsystem
Service	The service ID associated with the error
MAC	The MAC address associated with the error
Error	The error that occurred on the SDP
Extra	Extra information about the error that occurred

## sdp

## Syntax

**sdp** [*sdp-id* [:*vc-id*]] [**detail**]

**sdp far-end** {*ip-address* | *ipv6-address*} [**detail**]

**sdp** *sdp-id* [*vc-id*] **l2tpv3**

**sdp** *sdp-id* [:*vc-id*] **static-isids** [**range-id** *range-id*]

**sdp** *sdp-id* [:*vc-id*] **static-isids** **mfib**

**sdp** *sdp-id* [:*vc-id*] [**detail**] **vccv-bfd** [**session**]

**sdp** *sdp-id* [:*vc-id*] **mrp**

## Context

[\[Tree\]](#) (show>service>id sdp)



## Full Context

```
show service id sdp
```

## Description

Displays information for the SDPs associated with the service. If no optional parameters are specified, a summary of all associated SDPs is displayed.

## Parameters

### ***sdp-id*** [:vc-id]

Displays only information for the specified SDP ID.

**Values** sdp-id: 1 to 17407  
vc-id: 1 to 4294967295

**Default** all SDPs

### **detail**

Displays detailed SDP information.

### ***ip-address*** | ***ipv6-address***

Displays only SDPs matching with the specified far-end IP address. 64 characters maximum.

**Default** SDPs with any far-end IP address

### **l2tpv3**

Indicates that the user wants to display l2tpv3 specific information for SDPs that are of type l2tpv3.

### **static-isids**

Specifies the I-Component service IDs created on the SDP.

### ***range-id***

Displays the service using the specified I-component Service ID (ISID).

**Values** 1 to 4294967295

### **mfib**

Display MFIB related information. This parameter applies to the 7450 ESS or 7750 SR only.

### **vccv-bfd**

Displays detailed information about the VCCV BFD session for a spoke SDP.

### **session**

displays a summary of all VCCV sessions.

### **mrp**

Displays detailed MRP information.

## Platforms

All

## Output

The following command displays SDP information and [Table 464: Show Service-ID SDP Field Descriptions](#) describes the output fields.

```
show service id sdp
```

### Output Example

```
=====
Services: Service Destination Points
=====
SdpId          Type      Far End addr  Adm   Opr    I.Lbl  E.Lbl
-----
32767:4294967294 VplsPmsi not applicable Up    Up     None   3
32767:4294967295 VplsPmsi not applicable Up    Up     None   3
32767:4294967296 VplsPmsi not applicable Up    Up     None   3
-----
Number of SDPs : 3
=====
```

The following command displays SDP details information and [Table 464: Show Service-ID SDP Field Descriptions](#) describes the output fields.

```
show service id sdp detail
```

### Output Example

```
=====
Services: Service Destination Points Details
=====
Sdp Id 1:1  -(10.20.1.2)
-----
Description      : Default sdp description
SDP Id          : 1:1
VC Type         : Ether
Admin Path MTU  : 0
Far End         : 10.20.1.2
Type            : Spoke
VC Tag          : n/a
Oper Path MTU   : 9186
Delivery        : MPLS

Admin State     : Up
Acct. Pol      : None
Ingress Label   : 2048
Ing mac Fltr   : n/a
Ing ip Fltr     : n/a
Ing ipv6 Fltr   : n/a
Admin ControlWord : Not Preferred
Last Status Change : 05/31/2007 00:45:43
Last Mgmt Change  : 05/31/2007 00:45:43
Class Fwding State : Up
Flags           : None
Peer Pw Bits    : None
Peer Fault Ip   : None
Peer Vccv CV Bits : None
Peer Vccv CC Bits : None
Max Nbr of MAC Addr: No Limit
Learned MAC Addr : 0
Total MAC Addr  : 0
Static MAC Addr : 0

MAC Learning    : Enabled
MAC Aging       : Enabled
L2PT Termination : Disabled
Oper State      : Up
Collect Stats   : Disabled
Egress Label    : 2048
Egr mac Fltr   : n/a
Egr ip Fltr     : n/a
Egr ipv6 Fltr   : n/a
Oper ControlWord : False
Signaling       : None
Discard Unkwn Srce: Disabled
BPDU Translation : Disabled
```

```
MAC Pinning      : Disabled

KeepAlive Information :
Admin State      : Disabled          Oper State       : Disabled
Hello Time       : 10                Hello Msg Len    : 0
Max Drop Count   : 3                 Hold Down Time   : 10

Statistics       :
I. Fwd. Pkts.    : 0                 I. Dro. Pkts.   : 0
I. Fwd. Octs.    : 0                 I. Dro. Octs.   : 0
E. Fwd. Pkts.    : 0                 E. Fwd. Octets  : 0
MCAC Policy Name :
MCAC Max Unconst BW: no limit        MCAC Max Mand BW : no limit
MCAC In use Mand BW: 0              MCAC Avail Mand BW: unlimited
MCAC In use Opnl BW: 0              MCAC Avail Opnl BW: unlimited

Associated LSP LIST :
Lsp Name         : A_B_1
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m35s

Lsp Name         : A_B_2
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m35s

Lsp Name         : A_B_3
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m34s

Lsp Name         : A_B_4
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m34s

Lsp Name         : A_B_5
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m34s

Lsp Name         : A_B_6
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m34s

Lsp Name         : A_B_7
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m34s

Lsp Name         : A_B_8
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m35s

Lsp Name         : A_B_9
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m34s

Lsp Name         : A_B_10
Admin State      : Up                Oper State       : Up
Time Since Last Tr*: 00h26m34s
-----
Class-based forwarding :
-----
Class forwarding      : enabled
Default LSP          : A_B_10          Multicast LSP       : A_B_9
=====
FC Mapping Table
=====
```

```

FC Name          LSP Name
-----
af               A_B_3
be               A_B_1
ef               A_B_6
h1               A_B_7
h2               A_B_5
l1               A_B_4
l2               A_B_2
nc               A_B_8
=====
Stp Service Destination Point specifics
-----
Mac Move          : Blockable
Stp Admin State   : Up                Stp Oper State    : Down
Core Connectivity : Down
Port Role         : N/A                Port State        : Forwarding
Port Number       : 2049                Port Priority      : 128
Port Path Cost    : 10                 Auto Edge         : Enabled
Admin Edge        : Disabled            Oper Edge         : N/A
Link Type         : Pt-pt              BPDU Encap        : Dot1d
Root Guard        : Disabled            Active Protocol   : N/A
Last BPDU from    : N/A
Designated Bridge : N/A                Designated Port Id: 0

Fwd Transitions   : 0                 Bad BPDUs rcvd   : 0
Cfg BPDUs rcvd    : 0                 Cfg BPDUs tx     : 0
TCN BPDUs rcvd    : 0                 TCN BPDUs tx     : 0
RST BPDUs rcvd    : 0                 RST BPDUs tx     : 0
-----
Number of SDPs : 1
-----
* indicates that the corresponding row element may have been truncated.
-----
    
```

The following command displays SDP details information and [Table 464: Show Service-ID SDP Field Descriptions](#) describes the output fields.

```
show service id sdp detail
```

**Output Example**

```

=====
Service Destination Point (Sdp Id : 130:1) Details
=====
-----
Sdp Id 130:1 -(10.20.1.1)
-----
Description       : (Not Specified)
SDP Id            : 130:1                Type              : Spoke
Spoke Descr       : (Not Specified)
VC Type           : n/a                 VC Tag            : n/a
Admin Path MTU    : 1600                 Oper Path MTU     : 1600
Delivery          : MPLS
Far End           : 10.20.1.1            Tunnel Far End    :
Oper Tunnel Far End: 10.20.1.1
LSP Types         : LDP
Hash Label        : Disabled            Hash Lbl Sig Cap  : Disabled
Oper Hash Label   : Disabled
Entropy Label     : Disabled
Admin State       : Up                  Oper State        : Up
    
```

```
MinReqd SdpOperMTU : n/a
Adv Service MTU : 1500
Acct. Pol : None
Ingress Label : 524236
Ingr Mac Fltr-Id : n/a
Ingr IP Fltr-Id : n/a
Ingr IPv6 Fltr-Id : n/a
Admin ControlWord : Not Preferred
BFD Template : BFD_VCCV
BFD-Enabled : yes
BFD Fail Action : down
BFD WaitForUpTimer : 0 secs
Last Status Change : 11/09/2020 17:04:44
Last Mgmt Change : 11/09/2020 17:04:43
Class Fwding State : Down
Flags : None
Local Pw Bits : None
Peer Pw Bits : None
Peer Fault Ip : None
Peer Vccv CV Bits : lspPing bfdFaultDet
Peer Vccv CC Bits : mplsRouterAlertLabel
Application Profile: None
Transit Policy : None
AARP Id : None

Collect Stats : Disabled
Egress Label : 524257
Egr Mac Fltr-Id : n/a
Egr IP Fltr-Id : n/a
Egr IPv6 Fltr-Id : n/a
Oper ControlWord : False
BFD-Encap : ipv4
BFD Oper State : connected
Signaling : n/a

Ingress Qos Policy : (none)
Ingress FP QGrp : (none)
Ing FP QGrp Inst : (none)
Egress Qos Policy : (none)
Egress Port QGrp : (none)
Egr Port QGrp Inst: (none)

KeepAlive Information :
Admin State : Disabled
Hello Time : 10
Max Drop Count : 3
Statistics :
I. Fwd. Pkts. : 0
I. Fwd. Octs. : 0
E. Fwd. Pkts. : 804
Oper State : Disabled
Hello Msg Len : 0
Hold Down Time : 10
I. Dro. Pkts. : 0
I. Dro. Octets : 0
E. Fwd. Octets : 41892
```

-----  
Control Channel Status  
-----

```
PW Status : disabled
Peer Status Expire : false
Request Timer : <none>
Acknowledgement : false
Refresh Timer : <none>
```

-----  
ETH-CFM SDP-Bind specifics  
-----

```
Squelch Levels : None
Collect Lmm Stats : Disabled
LMM FC Stats : None
LMM FC In Prof : None
```

-----  
LDP Information :  
-----

```
LDP LSP Id : 65537
```

-----  
RSVP/Static LSPs  
-----

```
Associated LSP List :
No LSPs Associated  
-----
```

```

Class-based forwarding :
-----
Class forwarding      : Disabled          EnforceDSTELspFc : Disabled
Default LSP          : Uknwn
Multicast LSP         : None

=====
FC Mapping Table
=====
FC Name              LSP Name
-----
No FC Mappings
-----
Segment Routing
-----
ISIS                 : disabled
OSPF                  : disabled
TE-LSP                : disabled
-----
Number of SDPs : 1
=====
    
```

Table 464: Show Service-ID SDP Field Descriptions

Label	Description
Sdp Id	The SDP identifier.
Type	Indicates whether the SDP is a spoke or a mesh.
Split Horizon Group	Name of the split horizon group that the SDP belongs to.
VC Type	Displays the VC type: ether or vlan.
VC Tag	Displays the explicit dot1Q value used when encapsulating to the SDP far end.
I. Lbl	The VC label used by the far-end device to send packets to this device in this service by the SDP.
Admin Path MTU	The operating path MTU of the SDP is equal to the admin path MTU (when one is set) or the dynamically computed tunnel MTU, when no admin path MTU is set (the default case).
Oper Path MTU	The actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Far End addr/Far End	Specifies the IP address of the remote end of the GRE or MPLS tunnel defined by this SDP.
Delivery	Specifies the type of delivery used by the SDP: GRE or MPLS.
Adm/Admin State	The administrative state of this SDP.
Adv Service MTU	Displays the configured advertise service MTU value (for Epipe services only).
Opr/Oper State	The operational state of this SDP.

Label	Description
I.Lbl/Ingress Label	The label used by the far-end device to send packets to this device in this service by this SDP.
E.Lbl/Egress Label	The label used by this device to send packets to the far-end device in this service by the SDP.
BFD Template	The BFD template name.
BFD-Enabled	The BFD enabled status.
BFD-Encap	The BFD encapsulation type.
BFD Fail Action	The BFD fail action.
BFD Oper State	The BFD operational state.
BFD WaitFor UpTimer	The BFD wait for up timer value.
Last Changed	The date and time of the most recent change to the SDP.
Signaling	Specifies the signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on this SDP.
Admin State	The administrative state of the keepalive process.
Oper State	The operational state of the keepalive process.
Hello Time	Specifies how often the SDP echo request messages are transmitted on this SDP.
Max Drop Count	Specifies the maximum number of consecutive SDP echo request messages that can be unacknowledged before the keepalive protocol reports a fault.
Hello Msg Len	Specifies the length of the SDP echo request messages transmitted on this SDP.
Hold Down Time	Specifies the amount of time to wait before the keepalive operating status is eligible to enter the alive state.
I. Fwd. Pkts.	Specifies the number of forwarded ingress packets.
I. Dro. Pkts.	Specifies the number of dropped ingress packets.
E. Fwd. Pkts.	Specifies the number of forwarded egress packets.
Associated LSP List	When the SDP type is MPLS, a list of LSPs used to reach the far-end router displays. All the LSPs in the list must terminate at the IP address specified in the far end field.  If the SDP type is GRE, then the following message displays: SDP delivery mechanism is not MPLS.

## sdp

### Syntax

```
sdp sdp-id pw-port [pw-port-id]  
sdp sdp-id pw-port  
sdp sdp-id pw-port [pw-port-id] [ statistics ]  
sdp [consistent | inconsistent | na] egressifs  
sdp sdp-id keep-alive-history  
sdp far-end ip-address | ipv6-address keep-alive-history  
sdp [sdp-id] detail  
sdp far-end ip-address | ipv6-address detail
```

### Context

[\[Tree\]](#) (show>service sdp)

### Full Context

```
show service sdp
```

### Description

This command displays SDP information.

If no optional parameters are specified, a summary SDP output for all SDPs is displayed.

### Parameters

#### *sdp-id*

The SDP ID for which to display information.

**Values** 1 to 17407

**Default** All SDPs

#### *pw-port-id*

Displays the SAP identifier for PW-SAPs.

**Values** 1 to 10239

#### *ip-address*

Displays only SDPs matching with the specified far-end IP address.

**Default** SDPs with any far-end IP address

#### **detail**

Displays detailed SDP information.

**Default** SDP summary output



### keep-alive-history

Displays the last fifty SDP keepalive events for the SDP.

**Default** SDP summary output

### Platforms

All

### Output

The following output is an example of service SDP information.

### Output Example

```

=====
*A:ALA-12>config>service# show service sdp 1 pw-port
=====
Service Destination Point (sdp Id 1 Pw-Port)
=====
Pw-port   VC-Id   Adm    Encap    Opr    VC Type   Egr Shaper   Monitor
          VPort   Group
-----
1         1       up     dot1q    up     ether
2         2       up     qinq     up     ether
3         3       up     dot1q    up     ether
4         4       up     qinq     up     ether
-----
Entries found : 4
=====

*A:ALA-12>config>service# show service sdp 1 pw-port 3
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port   : lag-1
VC-Id              : 3           Admin Status      : up
Encap              : dot1q        Oper Status       : up
VC Type            : ether
Oper Flags         : (Not Specified)
Monitor Oper-Group : (Not Specified)
=====

*A:ALA-12>config>service# show service sdp 1 pw-port 3 statistics
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port   : lag-1
VC-Id              : 3           Admin Status      : up
Encap              : dot1q        Oper Status       : up
VC Type            : ether
Oper Flags         : (Not Specified)
Monitor Oper-Group : (Not Specified)

Statistics         :
I. Fwd. Pkts.     : 0           I. Dro. Pkts.    : 0
I. Fwd. Octs.     : 0           I. Dro. Octets   : 0
E. Fwd. Pkts.     : 0           E. Fwd. Octets   : 0
=====
    
```

## sdp

### Syntax

```
sdp sdp-id pw-port [pw-port-id]  
sdp sdp-id pw-port  
sdp sdp-id pw-port pw-port-id [ statistics ]  
sdp [consistent | inconsistent | na] egressifs  
sdp sdp-id keep-alive-history  
sdp far-end {ip-address | ipv6-address} keep-alive-history  
sdp [sdp-id] detail  
sdp far-end {ip-address | ipv6-address} [detail]
```

### Context

[\[Tree\]](#) (show>service sdp)

### Full Context

```
show service sdp
```

### Description

This command displays information for the SDPs associated with the service.  
If no optional parameters are specified, a summary of all associated SDPs is displayed.

### Parameters

#### *sdp-id*

Specifies the SDP ID for which to display information.

**Values** 1 to 17407

#### *pw-port-id*

Specifies the pseudowire port identifier.

**Values** 1 to 10239

#### *ip-address*

Displays only SDPs with the specified far-end IPv4 address. 64 characters maximum.

#### *ipv6-address*

Displays only SDPs with the specified far-end IPv6 address. 64 characters maximum.

#### **detail**

Displays detailed SDP information.

**Default** SDP summary output

### keep-alive-history

Displays the last fifty SDP keepalive events for the SDP.

**Default** SDP summary output

### Platforms

All

### Output

The following outputs are examples of SDP information.

#### Output Example

```
*A:ALA-12>config>service# show service sdp 1 pw-port
=====
Service Destination Point (sdp Id 1 Pw-Port)
=====
Pw-port   VC-Id   Adm    Encap   Opr    VC Type   Egr Shaper   Monitor
          VC-Id   Status Encap   Oper   Type      VPort      Oper
          VC-Id   Status Encap   Oper   Type      VPort      Group
-----
1         1       up     dot1q   up     ether
2         2       up     qinq    up     ether
3         3       up     dot1q   up     ether
4         4       up     qinq    up     ether
-----
Entries found : 4
=====

*A:ALA-12>config>service# show service sdp 1 pw-port 3
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port   : lag-1
VC-Id              : 3
Encap              : dot1q
VC Type            : ether
Oper Flags         : (Not Specified)
Monitor Oper-Group : (Not Specified)
Admin Status       : up
Oper Status        : up
=====

*A:ALA-12>config>service# show service sdp 1 pw-port 3 statistics
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port   : lag-1
VC-Id              : 3
Encap              : dot1q
VC Type            : ether
Oper Flags         : (Not Specified)
Monitor Oper-Group : (Not Specified)
Admin Status       : up
Oper Status        : up

Statistics
I. Fwd. Pkts.     : 0
I. Fwd. Octs.     : 0
E. Fwd. Pkts.     : 0
I. Dro. Pkts.     : 0
I. Dro. Octs.     : 0
E. Fwd. Octets    : 0
```

```

=====
*A:Dut-B# show service sdp detail
=====
Services: Service Destination Points Details
=====
-----
Sdp Id 1 -10.20.1.3
-----
Description          : Default sdp description
SDP Id               : 1                      SDP Source          : manual
Admin Path MTU       : 1514                   Oper Path MTU       : 1514
Delivery              : MPLS
Far End               : 10.20.1.3
Tunnel Far End       : 10.20.1.3             LSP Types           : LDP
Admin State          : Up                     Oper State           : Up
Signaling             : TLDP                  Metric               : 0
Acct. Pol             : None                   Collect Stats        : Disabled
Last Status Change   : 06/13/2017 17:14:05   Adv. MTU Over.      : No
Last Mgmt Change     : 06/13/2017 17:17:19   VLAN VC Etype       : 0x8100
Bw BookingFactor     : 100                     PBB Etype            : 0x88e7
Oper Max BW(Kbps)    : 0                       Avail BW(Kbps)      : 0
Net-Domain            : default                 Egr Interfaces       : Consistent
FPE LSP Id           : 0
Weighted ECMP        : Enabled
Flags                 : None
Mixed LSP Mode Information :
Mixed LSP Mode       : Disabled               Active LSP Type      : LDP
KeepAlive Information :
Admin State          : Disabled               Oper State           : Disabled
Hello Time           : 10                     Hello Msg Len        : 0
Hello Timeout        : 5                       Unmatched Replies    : 0
Max Drop Count       : 3                       Hold Down Time       : 10
Tx Hello Msgs        : 0                       Rx Hello Msgs        : 0
Src B-MAC LSB        : <none>                  Ctrl PW VC ID        : <none>
Ctrl PW Active       : n/a
-----
LDP Information :
-----
LDP LSP Id           : 65662
-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated
-----
Class-based forwarding :
-----
Class forwarding     : Disabled               EnforceDSTELspFc    : Disabled
Default LSP          : Uknwn                   Multicast LSP        : None
=====
FC Mapping Table
=====
FC Name              LSP Name
-----
No FC Mappings
-----
Segment Routing
-----
ISIS                 : disabled
OSPF                  : disabled
    
```

```
TE-LSP          : disabled
-----
Number of SDPs : 1
-----
=====
*A:Dut-B#
```

## sdp

### Syntax

```
sdp sdp-id pw-port [pw-port-id]
sdp sdp-id pw-port
sdp sdp-id pw-port pw-port-id [statistics]
sdp [consistent | inconsistent | na] egressifs
sdp sdp-id keep-alive-history
sdp far-end {ip-address | ipv6-address} keep-alive-history
sdp [sdp-id] [detail]
sdp far-end {ip-address | ipv6-address} [detail]
```

### Context

[\[Tree\]](#) (show>service sdp)

### Full Context

```
show service sdp
```

### Description

This command displays information for the SDPs associated with the service.  
If no optional parameters are specified, a summary of all associated SDPs is displayed.

### Parameters

#### *sdp-id*

Specifies the SDP ID for which to display information.

**Values** 1 to 17407

**Default** All SDPs.

#### *pw-port-id*

Specifies the pseudo-wire port identifier.

**Values** 1 to 10239

#### **statistics**

Displays SDP statistics information.

**consistent**

Indicates that the network-domains for all the egress network interfaces that can carry traffic on this SDP are consistent.

**inconsistent**

Indicates that the network-domain for one or more egress network interfaces that can carry traffic on this SDP are inconsistent.

**na**

Indicates that there is no egress network interface that can carry traffic on this SDP.

**egressifs**

Indicates whether all the egress network interfaces that can carry traffic on this SDP are associated with the network-domain configured on this SDP.

**ip-address | ipv6-address**

Displays only SDPs matching with the specified far-end IP address up to 64 characters.

**Default** SDPs with any far-end IP address.

**keep-alive-history**

Displays the last fifty SDP keepalive events for the SDP.

**Default** SDP summary output.

**detail**

Displays detailed SDP information.

**Default** SDP summary output.

**Platforms**

All

**Output**

The following output is an example of SDP information, and [Table 465: Show Service SDP Field Descriptions](#) describes the output fields.

**Output Example**

```
*A:ALA-12>config>service# show service sdp 1 pw-port
=====
Service Destination Point (sdp Id 1 Pw-Port)
=====
Pw-port   VC-Id   Adm    Encap    Opr    VC Type    Egr Shaper   Monitor
          VC-Id   Adm    Encap    Opr    VC Type    VPort   Oper
          VC-Id   Adm    Encap    Opr    VC Type    VPort   Group
-----
1         1       up     dot1q    up     ether
2         2       up     qinq     up     ether
3         3       up     dot1q    up     ether
4         4       up     qinq     up     ether
-----
Entries found : 4
=====

*A:ALA-12>config>service# show service sdp 1 pw-port 3
```

```
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port      : lag-1
VC-Id                 : 3                Admin Status      : up
Encap                 : dot1q           Oper Status       : up
VC Type               : ether
Oper Flags            : (Not Specified)
Monitor Oper-Group    : (Not Specified)
=====
```

\*A:ALA-12>config>service# show service sdp 1 pw-port 3 statistics

```
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port      : lag-1
VC-Id                 : 3                Admin Status      : up
Encap                 : dot1q           Oper Status       : up
VC Type               : ether
Oper Flags            : (Not Specified)
Monitor Oper-Group    : (Not Specified)

Statistics           :
I. Fwd. Pkts.        : 0                I. Dro. Pkts.     : 0
I. Fwd. Octs.        : 0                I. Dro. Octs.     : 0
E. Fwd. Pkts.        : 0                E. Fwd. Octets    : 0
=====
```

\*A:Dut-B# show service sdp

```
=====
Services: Service Destination Points
=====
SdpId  AdmMTU  OprMTU  Far End      Adm  Opr      Del  LSP  Sig
-----
230    0        1582   10.20.1.3   Up   Up        MPLS I    TLDP
-----
Number of SDPs : 1
-----
Legend: R = RSVP, L = LDP, B = BGP, M = MPLS-TP, n/a = Not Applicable
=====
```

\*A:Dut-B#

\*A:Dut-B# show service sdp detail

```
=====
Services: Service Destination Points Details
=====
-----
Sdp Id 230 -10.20.1.3
-----
Description          : (Not Specified)
SDP Id               : 230                SDP Source        : manual
Admin Path MTU       : 0                Oper Path MTU     : 1582
Delivery             : MPLS
Far End              : 10.20.1.3
Tunnel Far End       : n/a                LSP Types         : SR-ISIS

Admin State          : Up                Oper State        : Up
Signaling            : TLDP             Metric            : 0
Acct. Pol            : None             Collect Stats     : Disabled
=====
```

```

Last Status Change : 01/28/2015 22:00:07   Adv. MTU Over.      : No
Last Mgmt Change   : 01/28/2015 21:59:53   VLAN VC Etype     : 0x8100
Bw BookingFactor   : 100                   PBB Etype          : 0x88e7
Oper Max BW(Kbps)  : 0                     Avail BW(Kbps)     : 0
Net-Domain         : default                Egr Interfaces     : Consistent
Flags              : None

Mixed LSP Mode Information :
Mixed LSP Mode      : Disabled              Active LSP Type    : SR-ISIS

KeepAlive Information :
Admin State        : Disabled              Oper State         : Disabled
Hello Time         : 10                   Hello Msg Len      : 0
Hello Timeout      : 5                     Unmatched Replies  : 0
Max Drop Count     : 3                     Hold Down Time     : 10
Tx Hello Msgs     : 0                     Rx Hello Msgs     : 0

Src B-MAC LSB      : <none>                Ctrl PW VC ID      : <none>
Ctrl PW Active     : n/a
    
```

-----  
 RSVP/Static LSPs  
 -----

Associated LSP List :  
 No LSPs Associated

-----  
 Class-based forwarding :  
 -----

```

Class forwarding      : Disabled              EnforceDSTELspFc  : Disabled
Default LSP          : Uknwn                 Multicast LSP      : None
    
```

=====  
 FC Mapping Table  
 =====

FC Name	LSP Name
No FC Mappings	

-----

Segment Routing  
 -----

```

ISIS                  : enabled              LSP Id             : 524289
Oper Instance Id     : 0
    
```

Number of SDPs : 1  
 -----

\*A:Dut-B#

\*A:Dut-B>config>service>sdp# show service sdp

=====  
 Services: Service Destination Points  
 =====

SdpId	AdmMTU	OprMTU	Far End	Adm	Opr	Del	LSP	Sig
230	0	1582	10.20.1.3	Up	Up	MPLS	0	TLDP

Number of SDPs : 1  
 -----

Legend: R = RSVP, L = LDP, B = BGP, M = MPLS-TP, n/a = Not Applicable  
 I = SR-ISIS, 0 = SR-OSPF



```

=====
*A:ALA-12# show service sdp 2 detail
=====
Service Destination Point (Sdp Id : 2) Details
-----
  Sdp Id 2  -(10.10.10.104)
-----
Description          : GRE-10.10.10.104
SDP Id               : 2
Admin Path MTU       : 0                Oper Path MTU       : 0
Far End              : 10.10.10.104      Delivery             : GRE
Admin State          : Up                Oper State           : Down
Weighted ECMP        : Disabled          VLAN VC Etype       : 0x8100
Flags                : SignalingSessDown TransportTunnDown
Signaling            : TLDP              Adv. MTU Over.      : No
Last Status Change   : 02/01/2007 09:11:39
Last Mgmt Change     : 02/01/2007 09:11:46

KeepAlive Information :
Admin State          : Disabled          Oper State           : Disabled
Hello Time           : 10                Hello Msg Len       : 0
Hello Timeout        : 5                Unmatched Replies   : 0
Max Drop Count       : 3                Hold Down Time      : 10
Tx Hello Msgs        : 0                Rx Hello Msgs       : 0

Associated LSP LIST :
SDP Delivery Mechanism is not MPLS
=====
*A:ALA-12#
    
```

Table 465: Show Service SDP Field Descriptions

Label	Description
SDP Id	The SDP identifier.
Adm MTU	Specifies the desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Opr MTU	Specifies the actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
IP address	Specifies the IP address of the remote end of the GRE or MPLS tunnel defined by this SDP.
Adm	Admin State — Specifies the administrative state of the SDP.
Opr	Oper State — Specifies the operational state of the SDP.
Deliver	Specifies the type of delivery used by the SDP: GRE or MPLS.
Flags	Specifies the conditions that affect the operating status of this SDP.

Label	Description
Signal Signaling	Specifies the signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on the SDP.
Last Status Change	Specifies the time of the most recent operating status change to this SDP.

## sdp

### Syntax

```

sdp sdp-id pw-port [pw-port-id]
sdp sdp-id pw-port
sdp sdp-id pw-port pw-port-id [statistics]
sdp [consistent | inconsistent | na] egressifs
sdp sdp-id keep-alive-history
sdp far-end {ip-address | ipv6-address} keep-alive-history
sdp [sdp-id] [detail]
sdp far-end {ip-address | ipv6-address} [detail]
  
```

### Context

[\[Tree\]](#) (show>service sdp)

### Full Context

```
show service sdp
```

### Description

This command displays information for the SDPs associated with the service.  
 If no optional parameters are specified, a summary of all associated SDPs is displayed.

### Parameters

#### *sdp-id*

Specifies the SDP ID for which to display information.

**Values** 1 to 17407

**Default** All SDPs.

#### *pw-port-id*

Specifies the pseudo-wire port identifier.

**Values** 1 to 10239

**statistics**

Displays SDP statistics information.

**consistent**

Indicates that the network-domains for all the egress network interfaces that can carry traffic on this SDP are consistent.

**inconsistent**

Indicates that the network-domain for one or more egress network interfaces that can carry traffic on this SDP are inconsistent.

**na**

Indicates that there is no egress network interface that can carry traffic on this SDP.

**egressifs**

Indicates whether all the egress network interfaces that can carry traffic on this SDP are associated with the network-domain configured on this SDP.

**ip-address | ipv6-address**

Displays only SDPs matching with the specified far-end IP address. 64 characters maximum.

**Default** SDPs with any far-end IP address.

**keep-alive-history**

Displays the last fifty SDP keepalive events for the SDP.

**Default** SDP summary output.

**detail**

Displays detailed SDP information.

**Default** SDP summary output.

**Platforms**

All

**Output**

The following output is an example of SDP information.

**Output Example**

```
*A:ALA-12>config>service# show service sdp 1 pw-port
=====
Service Destination Point (sdp Id 1 Pw-Port)
=====
Pw-port  VC-Id  Adm  Encap  Opr  VC Type  Egr Shaper  Monitor
          VPort  Group
-----
1         1       up   dot1q  up   ether
2         2       up   qinq   up   ether
3         3       up   dot1q  up   ether
4         4       up   qinq   up   ether
-----
```

```

Entries found : 4
=====
*A:ALA-12>config>service# show service sdp 1 pw-port 3
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port      : lag-1
VC-Id                 : 3                Admin Status         : up
Encap                 : dot1q           Oper Status          : up
VC Type               : ether
Oper Flags            : (Not Specified)
Monitor Oper-Group    : (Not Specified)
=====
*A:ALA-12>config>service# show service sdp 1 pw-port 3 statistics
=====
Service Destination Point (Sdp Id 1 Pw-Port 3)
=====
SDP Binding port      : lag-1
VC-Id                 : 3                Admin Status         : up
Encap                 : dot1q           Oper Status          : up
VC Type               : ether
Oper Flags            : (Not Specified)
Monitor Oper-Group    : (Not Specified)

Statistics            :
I. Fwd. Pkts.        : 0                I. Dro. Pkts.        : 0
I. Fwd. Octs.        : 0                I. Dro. Octs.        : 0
E. Fwd. Pkts.        : 0                E. Fwd. Octets       : 0
=====
    
```

The following output is an example of SDP information, and [Table 466: Show Service SDP Field Descriptions](#) describes the output fields.

### Output Example

```

*A:ALA-12# show service sdp
=====
Services: Service Destination Points
=====
SdpId   Adm MTU   Opr MTU   IP address   Adm  Opr       Deliver Signal
-----
10      4462     4462     10.20.1.3    Up   Dn NotReady MPLS   TLDP
40      4462     1534     10.20.1.20   Up   Up         MPLS   TLDP
60      4462     1514     10.20.1.21   Up   Up         GRE    TLDP
100     4462     4462     203.0.0.2    Down Down       GRE    TLDP
500     4462     4462     10.20.1.50   Up   Dn NotReady GRE    TLDP
-----
Number of SDPs : 5
=====
*A:ALA-12#
*A:ALA-12# show service sdp 2 detail
=====
Service Destination Point (Sdp Id : 2) Details
=====
-----
Sdp Id 2  -(10.10.10.104)
-----
Description      : GRE-10.10.10.104
SDP Id           : 2
Admin Path MTU   : 0                Oper Path MTU     : 0
    
```

```

Far End          : 10.10.10.104      Delivery          : GRE
Admin State     : Up                Oper State        : Down
Flags           : SignalingSessDown TransportTunnDown
Signaling       : TLDP              VLAN VC Etype    : 0x8100
Last Status Change : 02/01/2007 09:11:39 Adv. MTU Over.   : No
Last Mgmt Change  : 02/01/2007 09:11:46

KeepAlive Information :
Admin State      : Disabled          Oper State        : Disabled
Hello Time      : 10                Hello Msg Len     : 0
Hello Timeout   : 5                Unmatched Replies : 0
Max Drop Count  : 3                Hold Down Time    : 10
Tx Hello Msgs   : 0                Rx Hello Msgs     : 0

Associated LSP LIST :
SDP Delivery Mechanism is not MPLS
=====
*A:ALA-12#

*A:Dut-B# show service sdp
=====
Services: Service Destination Points
=====
SdpId  AdmMTU  OprMTU  Far End      Adm  Opr      Del   LSP  Sig
-----
230    0        1582   10.20.1.3   Up   Up        MPLS  I    TLDP
-----
Number of SDPs : 1
-----
Legend: R = RSVP, L = LDP, B = BGP, M = MPLS-TP, n/a = Not Applicable
=====
*A:Dut-B#
*A:Dut-B# show service sdp detail
=====
Services: Service Destination Points Details
=====
Sdp Id 230 -10.20.1.3
-----
Description          : (Not Specified)
SDP Id               : 230                SDP Source         : manual
Admin Path MTU       : 0                  Oper Path MTU      : 1582
Delivery             : MPLS
Far End              : 10.20.1.3
Tunnel Far End       : n/a                LSP Types          : SR-ISIS

Admin State          : Up                Oper State          : Up
Signaling            : TLDP              Metric              : 0
Acct. Pol            : None              Collect Stats       : Disabled
Last Status Change   : 01/28/2015 22:00:07 Adv. MTU Over.     : No
Last Mgmt Change     : 01/28/2015 21:59:53 VLAN VC Etype      : 0x8100
Bw BookingFactor     : 100              PBB Etype           : 0x88e7
Oper Max BW(Kbps)    : 0                Avail BW(Kbps)     : 0
Net-Domain           : default          Egr Interfaces     : Consistent
Flags                : None

Mixed LSP Mode Information :
Mixed LSP Mode        : Disabled          Active LSP Type    : SR-ISIS

KeepAlive Information :
Admin State          : Disabled          Oper State          : Disabled
Hello Time          : 10                Hello Msg Len      : 0
    
```

```

Hello Timeout      : 5                Unmatched Replies : 0
Max Drop Count    : 3                Hold Down Time    : 10
Tx Hello Msgs     : 0                Rx Hello Msgs     : 0

Src B-MAC LSB     : <none>           Ctrl PW VC ID     : <none>
Ctrl PW Active    : n/a

-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated

-----
Class-based forwarding :
-----
Class forwarding      : Disabled          EnforceDSTELspFc : Disabled
Default LSP          : Uknwn             Multicast LSP     : None

=====
FC Mapping Table
=====
FC Name              LSP Name
-----
No FC Mappings

-----
Segment Routing
-----
ISIS                  : enabled                LSP Id            : 524289
Oper Instance Id     : 0

Number of SDPs : 1

=====
*A:Dut-B#

*A:ALA-12# show service sdp 8

=====
Service Destination Point (Sdp Id : 8)
=====
SdpId   Adm MTU   Opr MTU   IP address   Adm   Opr       Deliver Signal
-----
8       4462     4462     10.10.10.104 Up    Dn NotReady MPLS   TLDP

=====
Service Destination Point (Sdp Id : 8) Details
-----
Sdp Id 8 -(10.10.10.104)
-----
Description          : MPLS-10.10.10.104
SDP Id              : 8
Admin Path MTU      : 0                    Oper Path MTU      : 0
Far End             : 10.10.10.104        Delivery           : MPLS
Admin State         : Up                  Oper State         : Down
Flags               : SignalingSessDown TransportTunnDown
Signaling           : TLDP                VLAN VC Etype     : 0x8100
Last Status Change  : 02/01/2007 09:11:39 Adv. MTU Over.    : No
Last Mgmt Change    : 02/01/2007 09:11:46

KeepAlive Information :
Admin State         : Disabled          Oper State         : Disabled
Hello Time          : 10                Hello Msg Len     : 0
Hello Timeout       : 5                Unmatched Replies : 0
    
```

```

Max Drop Count      : 3                Hold Down Time    : 10
Tx Hello Msgs      : 0                Rx Hello Msgs     : 0

Associated LSP LIST :
Lsp Name           : to-104
Admin State        : Up                Oper State         : Down
Time Since Last Tran*: 01d07h36m
=====
* indicates that the corresponding row element may have been truncated.
*A:ALA-12#
    
```

Table 466: Show Service SDP Field Descriptions

Label	Description
SDP Id	The SDP identifier.
Adm MTU	Specifies the largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
Opr MTU	Specifies the actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end router, without requiring the packet to be fragmented.
IP address	Specifies the IP address of the remote end of the GRE or MPLS tunnel defined by this SDP.
Adm	Admin State — Specifies the state of the SDP.
Opr	Oper State — Specifies the operating state of the SDP.
Flags	Specifies all the conditions that affect the operating status of this SDP.
Signal	Signaling — Specifies the signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on the SDP.
Last Status Change	Specifies the time of the most recent operating status change to this SDP.
Last Mgmt Change	Specifies the time of the most recent management-initiated change to this SDP.
Number of SDPs	Specifies the total number of SDPs displayed according to the criteria specified.
Hello Time	Specifies how often the SDP echo request messages are transmitted on this SDP.
Deliver	Delivered — Specifies the type of delivery used by the SDP: GRE or MPLS.
Number of SDPs	Specifies the total number of SDPs displayed according to the criteria specified.
Hello Time	Specifies how often the SDP echo request messages are transmitted on this SDP.
Hello Msg Len	Specifies the length of the SDP echo request messages transmitted on this SDP.

Label	Description
Hello Timeout	Specifies the number of seconds to wait for an SDP echo response message before declaring a timeout.
Unmatched Replies	Specifies the number of SDP unmatched message replies.
Max Drop Count	Specifies the maximum number of consecutive SDP echo request messages that can be unacknowledged before the keepalive protocol reports a fault.
Hold Down Time	Specifies the maximum number of consecutive SDP echo request messages that can be unacknowledged before the keepalive protocol reports a fault.
TX Hello Msgs	Specifies the number of SDP echo request messages transmitted since the keepalive was administratively enabled or the counter was cleared.
Rx Hello Msgs	Specifies the number of SDP echo request messages received since the keepalive was administratively enabled or the counter was cleared.
Associated LSP List	When the SDP type is MPLS, a list of LSPs used to reach the far-end router displays. All the LSPs in the list must terminate at the IP address specified in the far end field.  If the SDP type is GRE, then the following message displays: SDP delivery mechanism is not MPLS.

## sdp

### Syntax

```

sdp sdp-id pw-port [pw-port-id] [statistics]
sdp [consistent | inconsistent | na] egressifs
sdp sdp-id keep-alive-history
sdp far-end ip-address keep-alive-history
sdp [sdp-id] [detail]
sdp far-end ip-address [detail]
    
```

### Context

[\[Tree\]](#) (show>service sdp)

### Full Context

```
show service sdp
```

### Description

This command displays SDP information.

If no optional parameters are specified, a summary SDP output for all SDPs is displayed.



## Parameters

### *sdp-id*

The SDP ID for which to display information.

**Default** All SDPs.

**Values** 1 to 17407

### *far-end ip-address*

Displays only SDPs matching with the specified far-end IP address.

### *detail*

Displays detailed SDP information.

### *keep-alive-history*

Displays the last fifty SDP keepalive events for the SDP.

### *pw-port pw-port-id*

Displays the SAP identifier for PW-SAPs.

## Platforms

All

## Output

The following output is an example of SDP information.

[Table 467: Service Commands SDP Field Descriptions](#) describes the **show service SDP** output fields.

### Output Example

```
*A:Dut-D# show service id 1 sdp 17407:4294967294 detail
=====
Service Destination Point (Sdp Id : 17407:4294967294) Details
=====
-----
Sdp Id 17407:4294967294  -(not applicable)
-----
Description      : (Not Specified)
SDP Id           : 17407:4294967294          Type           : VplsPmsi
Split Horiz Grp  : (Not Specified)
VC Type          : Ether                    VC Tag         : n/a
Admin Path MTU   : 9194                     Oper Path MTU  : 9194
Delivery         : MPLS
Far End          : not applicable
Tunnel Far End   : n/a                     LSP Types      : None
Hash Label       : Disabled                 Hash Lbl Sig Cap : Disabled
Oper Hash Label  : Disabled

Admin State      : Up                      Oper State      : Up
Acct. Pol        : None                    Collect Stats   : Disabled
Ingress Label    : 0                      Egress Label    : 3
Ingr Mac Fltr-Id : n/a                    Egr Mac Fltr-Id : n/a
Ingr IP Fltr-Id  : n/a                    Egr IP Fltr-Id  : n/a
Ingr IPv6 Fltr-Id : n/a                    Egr IPv6 Fltr-Id : n/a
Admin ControlWord : Not Preferred                Oper ControlWord : False
Last Status Change : 12/14/2012 12:42:22          Signaling       : None
Last Mgmt Change  : 12/14/2012 12:42:19          Force Vlan-Vc   : Disabled
Endpoint         : N/A                      Precedence      : 4
```

```
PW Status Sig      : Enabled
Class Fwding State : Down
Flags              : None
Time to RetryReset : never                Retries Left      : 3
Mac Move          : Blockable             Blockable Level   : Tertiary
Local Pw Bits     : None
Peer Pw Bits      : None
Peer Fault Ip     : None
Peer Vccv CV Bits : None
Peer Vccv CC Bits : None
Application Profile : None
Max Nbr of MAC Addr : No Limit           Total MAC Addr    : 0
Learned MAC Addr  : 0                   Static MAC Addr   : 0

MAC Learning      : Enabled              Discard Unkwn Srce : Disabled
MAC Aging         : Enabled
BPDU Translation  : Disabled
L2PT Termination  : Disabled
MAC Pinning       : Disabled
Ignore Standby Sig : False              Block On Mesh Fail : False
Oper Group        : (none)              Monitor Oper Grp   : (none)
Rest Prot Src Mac : Disabled            RestProtSrcMacAct  : Disable
Auto Learn Mac Prot : Disabled

Ingress Qos Policy : (none)             Egress Qos Policy  : (none)
Ingress FP QGrp    : (none)             Egress Port QGrp   : (none)
Ing FP QGrp Inst   : (none)             Egr Port QGrp Inst : (none)
-----
ETH-CFM SDP-Bind specifics
-----
V-MEP Filtering    : Disabled

KeepAlive Information :
Admin State        : Disabled           Oper State         : Disabled
Hello Time         : 10                 Hello Msg Len      : 0
Max Drop Count     : 3                  Hold Down Time     : 10

Statistics          :
I. Fwd. Pkts.      : 0                  I. Dro. Pkts.     : 0
I. Fwd. Octs.      : 0                  I. Dro. Octs.     : 0
E. Fwd. Pkts.      : 2979761           E. Fwd. Octets    : 476761760
-----
Control Channel Status
-----
PW Status          : disabled           Refresh Timer      : <none>
Peer Status Expire : false                Clear On Timeout   : true

MCAC Policy Name   :
MCAC Max Unconst BW : no limit           MCAC Max Mand BW  : no limit
MCAC In use Mand BW : 0                 MCAC Avail Mand BW : unlimited
MCAC In use Opnl BW : 0                 MCAC Avail Opnl BW : unlimited
-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated
-----
Class-based forwarding :
-----
Class forwarding    : Disabled           EnforceDSTELspFc : Disabled
Default LSP        : Uknwn              Multicast LSP      : None
=====
FC Mapping Table
=====
```

```

FC Name          LSP Name
-----
No FC Mappings
-----
Stp Service Destination Point specifics
-----
Stp Admin State   : Down           Stp Oper State   : Down
Core Connectivity : Down
Port Role         : N/A           Port State       : Forwarding
Port Number       : 0             Port Priority    : 128
Port Path Cost    : 10           Auto Edge       : Enabled
Admin Edge        : Disabled      Oper Edge       : N/A
Link Type         : Pt-pt         BPDU Encap     : Dot1d
Root Guard        : Disabled      Active Protocol : N/A
Last BPDU from   : N/A
Designated Bridge : N/A           Designated Port Id: N/A

Fwd Transitions  : 0             Bad BPDUs rcvd  : 0
Cfg BPDUs rcvd   : 0             Cfg BPDUs tx    : 0
TCN BPDUs rcvd   : 0             TCN BPDUs tx    : 0
TC bit BPDUs rcvd : 0           TC bit BPDUs tx : 0
RST BPDUs rcvd   : 0             RST BPDUs tx    : 0
    
```

Number of SDPs : 1

A:Dut-F# show service sdp 1600 detail

=====  
 Service Destination Point (Sdp Id : 1600) Details  
 =====

Sdp Id 1600 -2.2.2.2

```

Description      : (Not Specified)
SDP Id           : 1600           SDP Source      : manual
Admin Path MTU   : 0             Oper Path MTU   : 1532
Delivery         : GRE
Far End          : 2.2.2.2       Tunnel Far End   : n/a
Oper Tunnel Far End : 2.2.2.2
Local End        : 6.6.6.6
LSP Types        : n/a

Admin State      : Up             Oper State      : Up
Signaling        : TLDP          Metric          : 0
Acct. Pol        : None          Collect Stats   : Disabled
Last Status Change : 10/04/2018 21:18:06 Adv. MTU Over. : No
Last Mgmt Change  : 10/04/2018 21:17:59 VLAN VC Etype  : 0x8100
Bw BookingFactor : 100
Oper Max BW(Kbps) : 0           Avail BW(Kbps)  : 0
Net-Domain       : default       Egr Interfaces  : Consistent
Allow Fragmentation : No
FPE LSP Id       : 0
Weighted ECMP    : Disabled
Flags            : None
Mixed LSP Mode Information :
Mixed LSP Mode   : n/a           Active LSP Type : n/a
KeepAlive Information :
Admin State      : Disabled      Oper State      : Disabled
Hello Time       : 10            Hello Msg Len   : 0
Hello Timeout    : 5             Unmatched Replies : 0
Max Drop Count   : 3             Hold Down Time  : 10
Tx Hello Msgs    : 0             Rx Hello Msgs   : 0
    
```

```
-----
MPLS-TP LSPs
-----
Associated LSP List :
SDP Delivery Mechanism is not MPLS
-----
Segment Routing
-----
ISIS           : disabled
OSPF           : disabled
TE-LSP        : disabled
=====
```

\*A:Dut-B# show service sdp

```
=====
Services: Service Destination Points
=====
```

SdpId	AdmMTU	OprMTU	Far End	Adm	Opr	Del	LSP	Sig
230	0	1582	10.20.1.3	Up	Up	MPLS	I	TLDP

Number of SDPs : 1

Legend: R = RSVP, L = LDP, B = BGP, M = MPLS-TP, n/a = Not Applicable

\*A:Dut-B#

\*A:Dut-B# show service sdp detail

```
=====
Services: Service Destination Points Details
=====
```

Sdp Id 230 -10.20.1.3

```
-----
Description           : (Not Specified)
SDP Id                : 230
Admin Path MTU        : 0
Delivery              : MPLS
Far End               : 10.20.1.3
Tunnel Far End       : n/a
SDP Source            : manual
Oper Path MTU        : 1582
LSP Types            : SR-ISIS

Admin State          : Up
Signaling            : TLDP
Acct. Pol            : None
Last Status Change   : 01/28/2015 22:00:07
Last Mgmt Change     : 01/28/2015 21:59:53
Bw BookingFactor     : 100
Oper Max BW(Kbps)    : 0
Net-Domain           : default
Flags                : None
Oper State           : Up
Metric               : 0
Collect Stats        : Disabled
Adv. MTU Over.       : No
VLAN VC Etype        : 0x8100
PBB Etype            : 0x88e7
Avail BW(Kbps)       : 0
Egr Interfaces       : Consistent

Mixed LSP Mode Information :
Mixed LSP Mode          : Disabled
Active LSP Type         : SR-ISIS

KeepAlive Information :
Admin State             : Disabled
Hello Time              : 10
Hello Timeout           : 5
Max Drop Count          : 3
Tx Hello Msgs           : 0
Oper State              : Disabled
Hello Msg Len           : 0
Unmatched Replies       : 0
Hold Down Time          : 10
Rx Hello Msgs           : 0

Src B-MAC LSB          : <none>
Ctrl PW VC ID          : <none>
```

```

Ctrl PW Active      : n/a
-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated
-----
Class-based forwarding :
-----
Class forwarding      : Disabled          EnforceDSTELspFc : Disabled
Default LSP          : Uknwn             Multicast LSP     : None
=====
FC Mapping Table
=====
FC Name              LSP Name
-----
No FC Mappings
-----
Segment Routing
-----
ISIS                  : enabled          LSP Id            : 524289
Oper Instance Id     : 0
-----
Number of SDPs : 1
=====
*A:Dut-B#

*A:Dut-B> show service sdp
=====
Services: Service Destination Points
=====
SdpId  AdmMTU  OprMTU  Far End      Adm  Opr      Del  LSP  Sig
-----
230    0       1582   10.20.1.3   Up   Up       MPLS  0    TLDP
-----
Number of SDPs : 1
-----
Legend: R = RSVP, L = LDP, B = BGP, M = MPLS-TP, n/a = Not Applicable
        I = SR-ISIS, 0 = SR-OSPF
=====

*A:Dut-B> show service sdp 230 detail
=====
Service Destination Point (Sdp Id : 230) Details
=====
Sdp Id 230 -10.20.1.3
-----
Description          : (Not Specified)
SDP Id               : 230                      SDP Source         : manual
Admin Path MTU       : 0                          Oper Path MTU      : 1582
Delivery             : MPLS
Far End              : 10.20.1.3
Tunnel Far End       : n/a                      LSP Types          : SR-OSPF

Admin State          : Up                          Oper State         : Up
Signaling            : TLDP                       Metric             : 0
Acct. Pol            : None                      Collect Stats      : Disabled
Last Status Change   : 05/27/2015 03:08:37  Adv. MTU Over.    : No
Last Mgmt Change     : 05/27/2015 03:05:36  VLAN VC Etype     : 0x8100
Bw BookingFactor     : 100                       PBB Etype          : 0x88e7
    
```

```

Oper Max BW(Kbps)      : 0                Avail BW(Kbps)       : 0
Net-Domain             : default           Egr Interfaces      : Consistent
Flags                  : None

Mixed LSP Mode Information :
Mixed LSP Mode         : Disabled          Active LSP Type     : SR-OSPF

KeepAlive Information  :
Admin State            : Disabled          Oper State          : Disabled
Hello Time             : 10                Hello Msg Len       : 0
Hello Timeout          : 5                  Unmatched Replies   : 0
Max Drop Count         : 3                  Hold Down Time      : 10
Tx Hello Msgs          : 0                  Rx Hello Msgs       : 0

Src B-MAC LSB          : <none>            Ctrl PW VC ID       : <none>
Ctrl PW Active         : n/a

-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated

-----
Class-based forwarding :
-----
Class forwarding      : Disabled          EnforceDSTELspFc   : Disabled
Default LSP           : Uknwn              Multicast LSP       : None

=====
FC Mapping Table
=====
FC Name              LSP Name
-----
No FC Mappings

-----
Segment Routing
-----
OSPF                  : enabled          LSP Id              : 524289
Oper Instance Id     : 0

=====
*A:Dut-B>config>service>sdp#

*A:ALA-12# show service sdp 8
=====
Service Destination Point (Sdp Id: 8)
=====
SdpId  Adm MTU  Opr MTU  IP address  Adm  Opr      Deliver Signal
-----
8       4462    4462    10.10.10.104  Up   Dn NotReady MPLS   TLDP
=====
*A:ALA-12#

*A:ALA-12#
=====
Service Destination Point (Sdp Id : 8) Details
=====
Sdp Id 8  -(10.10.10.104)
-----
Description      : MPLS-10.10.10.104
SDP Id           : 8
Admin Path MTU   : 0                Oper Path MTU      : 0
  
```

```

Far End          : 10.10.10.104      Delivery         : MPLS
Admin State     : Up                Oper State      : Down
Flags          : SignalingSessDown TransportTunnDown
Signaling       : TLDP              VLAN VC Etype   : 0x8100
Last Status Change : 02/01/2007 09:11:39 Adv. MTU Over.  : No
Last Mgmt Change  : 02/01/2007 09:11:46
KeepAlive Information :
Admin State     : Disabled          Oper State      : Disabled
Hello Time      : 10                Hello Msg Len   : 0
Hello Timeout   : 5                 Unmatched Replies : 0
Max Drop Count  : 3                 Hold Down Time  : 10
Tx Hello Msgs   : 0                 Rx Hello Msgs   : 0
Associated LSP LIST :
Lsp Name        : to-104
Admin State     : Up                Oper State      : Down
Time Since Last Tran*: 01d07h36m
=====
* indicates that the corresponding row element may have been truncated.
*A:ALA-12#

*A:MV-SR12> show service sdp 10 detail
=====
Service Destination Point (Sdp Id : 10) Details
=====
Sdp Id 10  -(203.20.1.201)
-----
Description          : (Not Specified)
SDP Id               : 10              SDP Source        : manual
Admin Path MTU       : 0              Oper Path MTU     : 9182
Far End              : 203.20.1.201    Delivery          : MPLS/LDP
Admin State          : Up              Oper State        : Up
Signaling             : TLDP           Metric            : 0
Acct. Pol            : None           Collect Stats     : Disabled
Last Status Change   : 02/12/2010 22:37:08 Adv. MTU Over.    : No
Last Mgmt Change     : 02/12/2010 22:37:03 VLAN VC Etype     : 0x8100
Bw BookingFactor     : 100            PBB Etype         : 0x88e7
Oper Max BW(Kbps)    : 0              Avail BW(Kbps)   : 0
Net-Domain           : default        Egr Interfaces    : Consistent
Mixed LSP Mode       : Enabled
Revert Time          : 0              Revert Count Down : n/a
Flags                : None

KeepAlive Information :
Admin State          : Disabled        Oper State        : Disabled
Hello Time           : 10              Hello Msg Len     : 0
Hello Timeout        : 5                 Unmatched Replies : 0
Max Drop Count       : 3                 Hold Down Time    : 10
Tx Hello Msgs        : 0                 Rx Hello Msgs     : 0
-----
LDP Information :
-----
LDP LSP Id           : 65539          LDP Active        : No
-----
RSVP/Static LSPs
-----
Associated LSP LIST :
Lsp Name             : To_7710
Admin State          : Up                Oper State        : Up
Time Since Last Tran*: 01h20m56s
-----
Class-based forwarding :
-----
Class forwarding     : Disabled        EnforceDSTELspFc : Disabled
    
```

```

Default LSP      : Uknwn      Multicast LSP   : None
=====
FC Mapping Table
=====
FC Name          LSP Name
-----
No FC Mappings
=====
* indicates that the corresponding row element may have been truncated.
*A:MV-SR12>config>service>vprn#

*B:Dut-B>config>router>mpls>lsp# /show service sdp
=====
Services: Service Destination Points
=====
SdpId  AdmMTU  OprMTU  Far End          Adm  Opr      Del   LSP  Sig
-----
230    0       1578   2001:db8::      Up   Up       MPLS  I    TLDP
-----
Number of SDPs : 1
-----
Legend: R = RSVP, L = LDP, B = BGP, M = MPLS-TP, n/a = Not Applicable
        I = SR-ISIS, 0 = SR-OSPF, T = SR-TE, F = FPE
=====

*B:Dut-B>config>router>mpls>lsp# /show service sdp detail
=====
Services: Service Destination Points Details
=====
-----
Sdp Id 230  2001:db8::
-----
Description          : Default sdp description
SDP Id               : 230                SDP Source           : manual
Admin Path MTU       : 0                  Oper Path MTU        : 1578
Delivery              : MPLS
Far End              : 2001:db8::
Tunnel Far End       : n/a                LSP Types            : SR-ISIS
Admin State          : Up                  Oper State           : Up
Signaling             : TLDP                Metric                : 0
Acct. Pol            : None                 Collect Stats         : Disabled
Last Status Change   : 07/12/2016 19:40:17  Adv. MTU Over.       : No
Last Mgmt Change     : 07/12/2016 19:40:04  VLAN VC Etype        : 0x8100
Bw BookingFactor     : 100                PBB Etype             : 0x88e7
Oper Max BW(Kbps)    : 0                  Avail BW(Kbps)       : 0
Net-Domain           : default            Egr Interfaces        : Consistent
FPE LSP Id           : 0
Flags                : None
Mixed LSP Mode Information :
Mixed LSP Mode       : Disabled            Active LSP Type       : SR-ISIS
KeepAlive Information :
Admin State          : Disabled            Oper State           : Disabled
Hello Time           : 10                Hello Msg Len         : 0
Hello Timeout        : 5                  Unmatched Replies    : 0
Max Drop Count       : 3                  Hold Down Time        : 10
Tx Hello Msgs        : 0                  Rx Hello Msgs         : 0
Src B-MAC LSB        : <none>           Ctrl PW VC ID         : <none>
Ctrl PW Active       : n/a
-----
RSVP/Static LSPs
    
```



```

-----
Associated LSP List :
No LSPs Associated
-----
Class-based forwarding :
-----
Class forwarding      : Disabled          EnforceDSTELspFc   : Disabled
Default LSP          : Uknwn              Multicast LSP       : None
=====
FC Mapping Table
=====
FC Name              LSP Name
-----
No FC Mappings
-----
Segment Routing
-----
ISIS                 : enabled              LSP Id              : 524355
Oper Instance Id     : 0
OSPF                  : disabled
TE-LSP               : disabled
-----
Number of SDPs : 1
-----
=====
*B:Dut-B>config>router>mpls>lsp# /show service id 1 sdp detail
=====
Services: Service Destination Points Details
=====
Sdp Id 230:1  -(2001:db8::)
-----
Description       : Default sdp description
SDP Id           : 230:1              Type                : Spoke
Spoke Descr      : Description for Sdp Bind 230 for Svc ID 1
VC Type          : VLAN                  VC Tag              : 0
Admin Path MTU   : 0                  Oper Path MTU       : 1578
Delivery         : MPLS
Far End          : 2001:db8::
Tunnel Far End   : n/a                  LSP Types           : SR-ISIS
Hash Label       : Disabled              Hash Lbl Sig Cap    : Disabled
Oper Hash Label  : Disabled
Entropy Label    : Disabled

Admin State      : Up                  Oper State           : Up
MinReqd SdpOperMTU : 1514
Adv Service MTU  : n/a
Acct. Pol        : None                  Collect Stats        : Disabled
Ingress Label    : 262134              Egress Label         : 262134
Ingr Mac Fltr-Id : n/a                  Egr Mac Fltr-Id     : n/a
Ingr IP Fltr-Id  : n/a                  Egr IP Fltr-Id      : n/a
Ingr IPv6 Fltr-Id : n/a                  Egr IPv6 Fltr-Id    : n/a
Admin ControlWord : Not Preferred       Oper ControlWord     : False
Admin BW(Kbps)   : 0                  Oper BW(Kbps)        : 0
BFD Template     : None
BFD-Enabled      : no                  BFD-Encap           : ipv4
Last Status Change : 07/12/2016 19:40:18 Signaling             : TLDP
Last Mgmt Change  : 07/12/2016 19:40:04
Endpoint         : N/A                  Precedence           : 4
PW Status Sig     : Enabled
Force Vlan-Vc    : Disabled              Force Qinq-Vc        : Disabled
Class Fwding State : Down
    
```

```

Flags : None
Local Pw Bits : None
Peer Pw Bits : None
Peer Fault Ip : None
Peer Vccv CV Bits : lspPing bfdFaultDet
Peer Vccv CC Bits : mplsRouterAlertLabel
Application Profile: None
Transit Policy : None
Standby Sig Slave : False
Block On Peer Fault: False
Use SDP B-MAC : False
Ingress Qos Policy : (none)
Ingress FP QGrp : (none)
Ing FP QGrp Inst : (none)
KeepAlive Information :
Admin State : Disabled
Hello Time : 10
Max Drop Count : 3
Statistics :
I. Fwd. Pkts. : 0
I. Fwd. Octs. : 0
E. Fwd. Pkts. : 0
Egress Qos Policy : (none)
Egress Port QGrp : (none)
Egr Port QGrp Inst: (none)
Oper State : Disabled
Hello Msg Len : 0
Hold Down Time : 10
I. Dro. Pkts. : 0
I. Dro. Octets : 0
E. Fwd. Octets : 0
-----
Control Channel Status
-----
PW Status : disabled
Peer Status Expire : false
Request Timer : <none>
Acknowledgement : false
Refresh Timer : <none>
-----
ETH-CFM SDP-Bind specifics
-----
Squelch Levels : None
-----
RSVP/Static LSPs
-----
Associated LSP List :
No LSPs Associated
-----
Class-based forwarding :
-----
Class forwarding : Disabled
Default LSP : Uknwn
EnforceDSTELspFc : Disabled
Multicast LSP : None
=====
FC Mapping Table
=====
FC Name LSP Name
-----
No FC Mappings
-----
Segment Routing
-----
ISIS : enabled
Oper Instance Id : 0
OSPF : disabled
TE-LSP : disabled
LSP Id : 524355
-----
Number of SDPs : 1
=====
    
```

When network domains are configured, the SDP egress interface state can be verified by using the following command.

```
*A:Dut-T# show service sdp egressifs
=====
SDP Egress Ifs State Table
=====
SDP Id          Network Domain      State
-----
100             net1                 consistent
-----
SDPs : 1
=====
*A:Dut-Tr#
*A:Dut-C># show service sdp 1 pw-port
=====
Service Destination Point (Sdp Id 1 Pw-Port )
=====
SDP Binding port   : 1/1/3

SDP: 1 Pw-port: 11
-----
VC-Id              : 11                Admin Status       : up
Encap               : dot1q             Oper Status        : up
VC Type             : vlan                Vlan VC Tag       : 0
Oper Flags          : (Not Specified)

SDP: 1 Pw-port: 44
-----
VC-Id              : 2                Admin Status       : up
Encap               : dot1q             Oper Status        : up
VC Type             : ether
Oper Flags          : (Not Specified)

-----
Entries found: 2
-----
*A:Dut-C> #

*A:Dut-C> # show service sdp 1 pw-port 44
=====
Service Destination Point (Sdp Id 1 Pw-Port 44)
=====
SDP Binding port   : 1/1/3
VC-Id              : 2                Admin Status       : up
Encap               : dot1q             Oper Status        : up
VC Type             : ether
Oper Flags          : (Not Specified)
=====
*A:Dut-C> #
```

The following show output gives the source-bmac-lsb and control PW used for a given SDP.

```
A:bksim1613# show service sdp 1 detail
=====
Service Destination Point (Sdp Id : 1) Details
=====
-----
Sdp Id 1 -2.2.2.2
-----
Description        : (Not Specified)
```

```

SDP Id           : 1           SDP Source       : manual
Admin Path MTU   : 0           Oper Path MTU    : 1556
Delivery         : MPLS
Far End          : 2.2.2.2
Tunnel Far End   : n/a        LSP Types        : RSVP

Admin State      : Up          Oper State        : Up
Signaling        : TLDP        Metric            : 0
Acct. Pol        : None        Collect Stats     : Disabled
Last Status Change : 08/12/2013 06:33:57 Adv. MTU Over.   : No
Last Mgmt Change  : 08/12/2013 06:32:47 VLAN VC Etype    : 0x8100
Bw BookingFactor : 100         PBB Etype        : 0x88e7
Oper Max BW(Kbps) : 0          Avail BW(Kbps)   : 0
Net-Domain       : default     Egr Interfaces    : Consistent
Flags            : None

Mixed LSP Mode Information :
Mixed LSP Mode      : Disabled   Active LSP Type    : RSVP

KeepAlive Information :
Admin State         : Disabled   Oper State         : Disabled
Hello Time          : 10         Hello Msg Len      : 0
Hello Timeout       : 3          Unmatched Replies  : 0
Max Drop Count      : 3          Hold Down Time     : 10
Tx Hello Msgs       : 0          Rx Hello Msgs      : 0
Src B-MAC LSB       : 00-13     Ctrl PW VC ID      : 550
    
```

The following show output indicates whether use-sdp-bmac is applied to a given PW.

```

A:bksim1613# show service id 550 sdp 1:550 detail
=====
Service Destination Point (Sdp Id : 1:550) Details
=====
-----
Sdp Id 1:550  -(2.2.2.2)
-----
Description      : (Not Specified)
SDP Id           : 1:550           Type              : Spoke
Spoke Descr      : (Not Specified)
VC Type          : Ether           VC Tag            : n/a
Admin Path MTU   : 0               Oper Path MTU     : 1556
Delivery         : MPLS
Far End          : 2.2.2.2
Tunnel Far End   : n/a            LSP Types         : RSVP
Hash Label       : Disabled        Hash Lbl Sig Cap  : Disabled
Oper Hash Label  : Disabled

Admin State      : Up              Oper State         : Up
MinReqd SdpOperMTU : 1514
Adv Service MTU  : n/a
Acct. Pol        : None            Collect Stats      : Disabled
Ingress Label    : 131048          Egress Label      : 131063
Ingr Mac Fltr-Id : n/a            Egr Mac Fltr-Id   : n/a
Ingr IP Fltr-Id  : n/a            Egr IP Fltr-Id    : n/a
Ingr IPv6 Fltr-Id : n/a          Egr IPv6 Fltr-Id  : n/a
Admin ControlWord : Not Preferred   Oper ControlWord   : False
Admin BW(Kbps)   : 0               Oper BW(Kbps)     : 0
Last Status Change : 08/12/2013 06:33:57 Signaling          : TLDP
Last Mgmt Change  : 08/12/2013 06:32:47 Force Vlan-Vc     : Disabled
Endpoint         : N/A             Precedence        : 4
PW Status Sig     : Enabled
Class Fwding State : Down
    
```

```
Flags : None
Local Pw Bits : None
Peer Pw Bits : None
Peer Fault Ip : None
Peer Vccv CV Bits : lspPing
Peer Vccv CC Bits : mplsRouterAlertLabel

Application Profile: None
Transit Policy : None
Standby Sig Slave : False
Block On Peer Fault: False
Use sdp B-MAC : True

Ingress Qos Policy : (none)          Egress Qos Policy : (none)
Ingress FP QGrp : (none)            Egress Port QGrp : (none)
Ing FP QGrp Inst : (none)           Egr Port QGrp Inst: (none)

KeepAlive Information :
Admin State : Disabled              Oper State : Disabled
Hello Time : 10                    Hello Msg Len : 0
Max Drop Count : 3                 Hold Down Time : 10

Statistics :
I. Fwd. Pkts. : 0                   I. Dro. Pkts. : 0
I. Fwd. Octs. : 0                   I. Dro. Octs. : 0
E. Fwd. Pkts. : 0                   E. Fwd. Octets : 0

-----
Control Channel Status
-----
PW Status : disabled                Refresh Timer : <none>
Peer Status Expire : false
Request Timer : <none>
Acknowledgement : false

-----
RSVP/Static LSPs
-----
Associated LSP List :
Lsp Name : to-bksim1611-1
Admin State : Up                    Oper State : Up
Time Since Last Tr*: 05h44m54s

-----
Class-based forwarding :
-----
Class forwarding : Disabled          EnforceDSTELspFc : Disabled
Default LSP : Uknwn                 Multicast LSP : None

=====
FC Mapping Table
=====
FC Name          LSP Name
-----
No FC Mappings

-----
Number of SDPs : 1
-----
=====
* indicates that the corresponding row element may have been truncated.
```

Table 467: Service Commands SDP Field Descriptions

Label	Description
SDP Id	Displays the SDP identifier.
Description	Displays a text string describing the SDP.
Admin Path MTU	Displays the desired largest service frame size (in octets) that can be transmitted through this SDP to the far-end ESR, without requiring the packet to be fragmented. The default value of zero indicates that the path MTU should be computed dynamically from the corresponding MTU of the tunnel.
Opr Path MTU	Displays the actual largest service frame size (in octets) that can be transmitted through this SDP to the far-end ESR, without requiring the packet to be fragmented. In order to be able to bind this SDP to a given service, the value of this object minus the control word size (if applicable) must be equal to or larger than the MTU of the service, as defined by its service MTU.
Far End	Displays the far end IP address.
Local End	Displays the local end IP address.
Delivery	Displays the type of delivery used by the SDP: GRE or MPLS.
IP address	Displays the IP address of the remote end of the GRE or MPLS tunnel defined by this SDP.
Adm Admin State	Displays the desired state of the SDP.
Opr Oper State	Displays the operating state of the SDP.
Flags	Displays all the conditions that affect the operating status of this SDP.
Signal Signaling	Displays the signaling protocol used to obtain the ingress and egress labels used in frames transmitted and received on the SDP.
Last Status Change	Displays the time of the most recent operating status change to this SDP.
Adv. MTU Over	Specifies whether the advertised MTU of a VLL spoke SDP bind includes the 14-byte Layer 2 header.
Last Mgmt Change	Displays the time of the most recent management-initiated change to this SDP.
KeepAlive Information	Displays Keepalive information.
Hello Time	Displays how often the SDP echo request messages are transmitted on this SDP.

Label	Description
Hello Msg Len	Displays the length of the SDP echo request messages transmitted on this SDP.
Hello Timeout	Displays the number of seconds to wait for an SDP echo response message before declaring a timeout.
Unmatched Replies	Displays the number of SDP unmatched message replies timer expired.
Max Drop Count	The maximum number of consecutive SDP echo request messages that can be unacknowledged before the keepalive protocol reports a fault.
Hold Down Time	The amount of time to wait before the keepalive operating status is eligible to enter the alive state.
TX Hello Msgs	The number of SDP echo request messages transmitted since the keepalive was administratively enabled or the counter was cleared.
Rx Hello Msgs	The number of SDP echo request messages received since the keepalive was administratively enabled or the counter was cleared.
Associated LSP List	When the SDP type is MPLS, a list of LSPs used to reach the far-end router displays. All the LSPs in the list must terminate at the IP address specified in the far end field.  If the SDP type is GRE, the following message displays: SDP Delivery Mechanism is not MPLS.
Lsp Name	Displays the LSP name.
Time Since Last Transaction	Displays the time of the last transaction.
Signaling	Displays the signaling type.
Collect Stats	Specifies whether the agent collects accounting statistics for this SDP. When the value is true the agent collects accounting statistics on this SDP.
VLAN VC Etype	Displays the VLAN VC type.
BW Booking Factor	Displays the value used to calculate the max SDP available bandwidth. The value specifies the percentage of the SDP max available bandwidth for VLL call admission. When the value of is set to zero (0), no new VLL spoke SDP bindings with non-zero bandwidth are permitted with this SDP. Overbooking, >100% is allowed.
PBB Etype	Displays the Ethertype used in frames sent out on this SDP when specified as <b>vlan</b> for Provider Backbone Bridging frames.
Oper Max BW (kb/s)	Displays the operational bandwidth in kilobits per seconds (kb/s) available for this SDP. The value is determined by the sum of the bandwidth of all the RSVP LSPs used by the SDP.

Label	Description
Avail BW (kb/s)	Displays the bandwidth that is still free for booking by the SDP bindings on the SDP.
Net-Domain	Displays the network-domain name configured on this SDP. The default value of this object is the default network-domain.
Egr Interface	Indicates whether all the egress network interfaces that can carry traffic on this SDP are associated with the network-domain configured on this SDP.  not applicable: Indicates that there is no egress network interface that can carry traffic on this SDP.  consistent: Indicates that the network-domains for all the egress network interfaces that can carry traffic on this SDP are consistent.  inconsistent: Indicates that the network-domain for one or more egress network interfaces that can carry traffic on this SDP are inconsistent.
Revert Time	Specifies the time to wait before reverting back from LDP to the configured LSPs, after having failed over to LDP.
Revert Count Down	Indicates the timer countdown before reverting back from LDP on this SDP. The timer countdown begins after the first configured LSP becomes active.
Flags	Displays all the conditions that affect the operating status of this SDP.
Class Forwarding	Indicates the admin state of class-based forwarding on this SDP. When the value is true, class-based forwarding is enabled.
EnforceDSTELspFc	Specifies whether service manager must validate with RSVP the support of the FC by the LSP.
Default LSP	Specifies the LSP ID that is used as a default when class-based forwarding is enabled on this SDP. This object must be set when enabling class-based forwarding.
Multicast LSP	Displays the LSP ID that all multicast traffic will be forwarded on when class-based forwarding is enabled on this SDP. When this object has its default value, multicast traffic will be forwarded on an LSP according to its forwarding class mapping.
Number of SDPs	Displays the metric to be used within the Tunnel Table Manager for decision making purposes. When multiple SDPs going to the same destination exist, this value is used as a tie-breaker by Tunnel Table Manager users like MP-BGP to select route with lower value.

## sdp

### Syntax

**sdp** *sdp-id* **keep-alive**



**sdp** *sdp-id* **pw-port** *sdp-id*

### Context

[\[Tree\]](#) (clear>service>statistics sdp)

### Full Context

clear service statistics sdp

### Description

This command clears keep-alive statistics associated with the SDP ID.

### Parameters

**sdp-id**

The SDP ID for which to clear keepalive statistics.

**Values** 1 to 32767

**keep-alive**

Clears keep-alive information associated with the SDP ID. The keep-alive history is not cleared.

### Platforms

All

sdp

### Syntax

**sdp** [*sdp-id*[:*vc-id*]] [ **level** *leve*] [**primary-vlan-enabled** *vlan-id*]

### Context

[\[Tree\]](#) (show>eth-cfm>mip-instantiation sdp)

### Full Context

show eth-cfm mip-instantiation sdp

### Description

This command displays MIP creation information for SDP bindings.

### Parameters

**sdp-id**

Specifies the value identifying the SDP.

**Values** 1 to 32767

***vc-id***

Specifies the value identifying the virtual circuit identifier.

**Values** 1 to 4294967295

***level***

Displays the MD level of the maintenance point.

**Values** 0 to 7

***vlan-id***

Specifies the Dot1Q VLAN ID.

**Values** T0 to 4095, all

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**sdp**

**Syntax**

**sdp** *sdp-id:vc-id* [**test-service-id** *service-id*] **start**

**sdp** *sdp-id:vc-id* **stop**

**Context**

**[Tree]** (tools>perform>service>id>admin-lock>pw sdp)

**Full Context**

tools perform service id admin-lock pw sdp

**Description**

This command specifies the spoke SDP binding to which an administrative lock will be applied for the MPLS-TP pseudowire. The administrative lock can be placed on a spoke SDP that is bound to a VLL SAP, another spoke SDP or a VPLS interface. Once the pseudowire is locked it may be put into loopback mode. The command must be executed at both ends of the pseudowire or MS-PW represented by the spoke SDP. Test traffic can then be injected using a configured test SAP on an Epipe, Apipe or Cpipe.

**Parameters**

***sdp-id:vc-id***

Specifies the SDP-ID and VC-ID.

**Values** sdp-id 1 to 17407]  
vc-id1 to 4294967295]

***test-service-id***

Keyword that specifies the ID of a test service (SAP) to which the SDP is bound.

## Platforms

All

## sdp

## Syntax

**sdp** *sdp-id:vc-id* **start** *mode* [**mac-swap**] [**mac** *ieee-address*] [**all**]

**sdp** *sdp-id:vc-id* **stop**

## Context

[\[Tree\]](#) (tools>perform>service>id>loopback>eth sdp)

## Full Context

tools perform service id loopback eth sdp

## Description

This command places the specific MPLS SDP binding in loopback mode for reflecting Ethernet traffic back in the direction of the received stream. This is only applicable to MPLS SDP Bindings.

## Parameters

### *sdp-id:vc-id*

Specifies the SDP ID and VC-ID.

**Values** sdp-id 1 to 17407  
vc-id1 to 4294967295

### **start mode**

Specifies the loopback in relation to the MPLS SDP Binding.

**Values** **ingress** — Traffic arriving at the sap-ingress will be reflected back out the same **sap**.  
**egress** — Traffic arriving at the sap-egress will be reflected back into the service in the direction of the original source.

### **stop**

Keyword that removes the MPLS SD-binding from loopback mode.

### **mac-swap**

Enable source address and destination address swapping for the reflected packets when the arriving packet is unicast. Any broadcast and multicast packets arriving on a looped point will be dropped.

### **mac ieee-address**

Optionally configure the source MAC address used in the reflected packet when the arriving packet is a broadcast or multicast. This does not apply to arriving unicast packets.

**Values** 6-byte unicast mac-address in the form

XX:XX:XX:XX:XX:XX or XX-XX-XX-XX-XX-XX

### all

Configured `ieee-address` is used as the source address for all reflected packets regardless of the arriving destination.

### mac-swap

No swapping of MAC addresses are performed without specifying this option and any non-unicast destined packets will not be reflected back to the source.

## Platforms

All

## sdp

## Syntax

**sdp** *sdp-id:vc-id* {**start** | **stop**}

## Context

[\[Tree\]](#) (tools>perform>service>id>loopback>pw sdp)

## Full Context

tools perform service id loopback pw sdp

## Description

This command places or removes the specified MPLS-TP SDP binding in loopback mode for the purpose of an MPLS-TP pseudowire test service.



### Note:

The loopback is created at the PW level so everything under the PW label is looped back. It is recommended to configure an administrative lock for the MPLS-TP pseudowire for the specified test service prior to configuring the loopback.

## Parameters

### *sdp-id:vc-id*

Specifies the SDP-ID and VC-ID.

**Values**    sdp-id 1 to 17407  
              vc-id1 to 4294967295

### start

Keyword that places the specified MPLS-TP PW in loopback mode for the purpose of an MPLS\_TP PW test service.

### stop

Keyword that removes the SDP binding from the loopback mode for the MPLS-TP pseudowire test service.

## Platforms

All

## sdp

## Syntax

```
sdp {sdp-id [:vc-id] | far-end ip-address} [interval seconds] [repeat repeat] [absolute | rate]
```

## Context

[\[Tree\]](#) (monitor>service>id sdp)

## Full Context

monitor service id sdp

## Description

This command monitors statistics for an SDP binding associated with this service.

## Parameters

### *sdp-id*

Specifies the SDP identifier.

**Values** sdp-id: 1 to 17407  
vc-id: 1 to 4294967295

### *ip-address*

Specifies the system address of the far-end router for the SDP in dotted decimal notation. The string may be up to 32 characters.

### *seconds*

Configures the interval for each display, in seconds.

**Values** 11 to 60

**Default** 11

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays absolute rate-per-second value for each statistic.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## Output

The following output is an example of SDP information.

### Output Example

```
A:ALA-12# monitor service id 100 sdp 10 repeat 3
=====
Monitor statistics for Service 100 SDP binding 10
=====
At time t = 0 sec (Base Statistics)
-----
I. Fwd. Pkts.   : 0                I. Dro. Pkts.   : 0
E. Fwd. Pkts.   : 0                E. Fwd. Octets  : 0
-----
At time t = 11 sec (Mode: Delta)
-----
I. Fwd. Pkts.   : 0                I. Dro. Pkts.   : 0
E. Fwd. Pkts.   : 0                E. Fwd. Octets  : 0
-----
At time t = 22 sec (Mode: Delta)
-----
I. Fwd. Pkts.   : 0                I. Dro. Pkts.   : 0
E. Fwd. Pkts.   : 0                E. Fwd. Octets  : 0
-----
At time t = 33 sec (Mode: Delta)
-----
I. Fwd. Pkts.   : 0                I. Dro. Pkts.   : 0
E. Fwd. Pkts.   : 0                E. Fwd. Octets  : 0
=====
A:ALA-12#
```

## 21.27 sdp-group

### sdp-group

#### Syntax

**sdp-group** [*group-name*]

#### Context

[\[Tree\]](#) (show>service sdp-group)

#### Full Context

show service sdp-group

#### Description

This show command will display the SDPs and the PW templates that are associated with the group-name.

## Platforms

All

## Output

The following output is an example of SDP group information.

### Output Example

```
*A:Dut-B# show service sdp-group
=====
SDP Group Information
=====
Group                               Value
-----
red                                  1
blue                                 2
-----
Entries found: 2
=====

*A:Dut-B#

*A:Dut-B# show service sdp-group "red"
=====
SDP-Group Information
=====
Name           : red           Value           : 1

Associated SDPs
=====
SdpId          : 204           Sdp-Group       : red
SdpId          : 205           Sdp-Group       : red
-----
Number of Entries: 2
=====
Associated pw-template included
=====
Pw-Template    : 1           Sdp-Group       : red
-----
Number of Entries: 1
=====
Associated pw-template excluded
=====
No Entries found
=====

*A:Dut-B#
```

## 21.28 sdp-group-using

### sdp-group-using

#### Syntax

**sdp-group-using**

## Context

[\[Tree\]](#) (show>service sdp-group-using)

## Full Context

show service sdp-group-using

## Description

This command displays groups using SDP.

## Platforms

All

## Output

The following output is an example of information pertaining to objects using SDP groups.

### Output Example

```
*A:Dut-D# show service sdp-group-using
=====
SDP-Group Information
=====
SdpId           : 402           Sdp-Group       : red
SdpId           : 405           Sdp-Group       : red
SdpId           : 4021          Sdp-Group       : blue
SdpId           : 4051          Sdp-Group       : blue

Associated pw-template included
=====
Pw-Template      : 1           Sdp-Group       : red
Pw-Template      : 2           Sdp-Group       : blue

Associated pw-template excluded
=====
No Entries found
=====
*A:Dut-D#
```

## 21.29 sdp-using

### sdp-using

#### Syntax

**sdp-using etree**

**sdp-using node-id** *node-id* [**global-id** *global-id*]

**sdp-using aarp** *aarpID*

**sdp-using app-profile** *app-profile-name*



**sdp-using far-end** {*ip-address* | *ipv6-address*}  
**sdp-using** [*sdp-id[:vc-id]*]  
**sdp-using transit-policy ip** *transit-ip-policy*  
**sdp-using transit-policy prefix** *transit-prefix-policy*

## Context

[\[Tree\]](#) (show>service sdp-using)

## Full Context

show service sdp-using

## Description

This command displays services using SDP or far-end address options.

## Parameters

### *node-id*

Specifies the node ID.

**Values** a.b.c.d, 1 to 4294967295

### *global-id*

Specifies the global ID.

**Values** 1 to 4294967295

### *aarpID*

Specifies the AARP instance ID.

**Values** 1 to 65535

### *app-profile-name*

32 characters max.

### *sdp-id*

Displays only services bound to the specified SDP ID.

**Values** 1 to 17407

### *vc-id*

The virtual circuit identifier.

**Values** 1 to 4294967295

### *ip-address*

Displays only services matching with the specified far-end IP address. 64 characters maximum.

**Default** Services with any far-end IP address.

**ipv6-address**

Displays only services matching with the specified far-end IPv6 address. 64 characters maximum.

**transit-ip-policy**

Specifies a transit IP policy ID.

**Values** 1 to 65535

**transit-prefix-policy**

Specifies a transit prefix policy ID.

**Values** 1 to 65535

**Platforms**

All

**Output**

The following output is an example of SDP using information, and [Table 468: Show Service SDP Using Output Fields](#) describes the output fields.

**Output Example**

```
*A:ALA-1# show service sdp-using 300
=====
Service Destination Point (Sdp Id : 300)
=====
SvcId      SdpId      Type Far End      Opr State I.Label  E.Label
-----
1          300:1      Mesh 10.0.0.13    Up      131071  131071
2          300:2      Spok 10.0.0.13      Up      131070  131070
100       300:100    Mesh 10.0.0.13     Up      131069  131069
101       300:101    Mesh 10.0.0.13     Up      131068  131068
102       300:102    Mesh 10.0.0.13     Up      131067  131067
-----
Number of SDPs : 5
-----
*A:ALA-1#
```

The following output is an example of VPLS E-Tree configured SDP bindings.

```
*A:DutA# show service sdp-using etree
=====
Etree SDP-BIND Information
=====
Svc Id      SDP-BIND Information      Type      Root-Leaf-Ac
leaf-tag
-----
2005       12:2005                    Spoke     Enabled N/A
2005       12:2006                    Spoke     Disabled Enabled
2005       12:2007                    Spoke     Disabled Enabled
-----
Number of etree sdp-binds: 3
=====
```

Table 468: Show Service SDP Using Output Fields

Label	Description
Svc ID	The service identifier.
Sdp ID	The SDP identifier.
Type	Type of SDP: spoke or mesh.
Far End	The far end address of the SDP.
Oper State	The operational state of the service.
Ingress Label	The label used by the far-end device to send packets to this device in this service by this SDP.
Egress Label	The label used by this device to send packets to the far-end device in this service by this SDP.
Etree SDP Bind Information	
Svc ID	The service identifier.
SDP-Bind	The leaf tag SDP bind identifier.
Type	The type SDP bind.
Root-Leaf-Tag	The state of the root leaf tag SDP bind,
Leaf-AC	The state of the leaf AC SDP bind.

## 21.30 seamless-bfd

### seamless-bfd

#### Syntax

**seamless-bfd**

#### Context

**[Tree]** (show>router>bfd seamless-bfd)

#### Full Context

show router bfd seamless-bfd

#### Description

This command displays Seamless-BFD information.

## Platforms

All

## seamless-bfd

## Syntax

**seamless-bfd**

## Context

[\[Tree\]](#) (clear>router>bfd seamless-bfd)

## Full Context

clear router bfd seamless-bfd

## Description

Commands in this context clear Seamless-BFD session and statistics information.

## Platforms

All

## 21.31 secure-boot

## secure-boot

## Syntax

**secure-boot**

## Context

[\[Tree\]](#) (tools>dump>system>security secure-boot)

## Full Context

tools dump system security secure-boot

## Description

This command displays secure boot settings.

## Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S,  
7750 SR-s, 7950 XRS-20e

## 21.32 security

### security

#### Syntax

**security**

#### Context

[\[Tree\]](#) (show>system security)

#### Full Context

show system security

#### Description

Commands in this context display security configuration information.

#### Platforms

All

### security

#### Syntax

**security**

#### Context

[\[Tree\]](#) (tools>dump security)

#### Full Context

tools dump security

#### Description

Commands in this context dump tools for security.

#### Platforms

All

## security

### Syntax

**security**

### Context

[\[Tree\]](#) (tools>dump>system security)

### Full Context

tools dump system security

### Description

Commands in this context display tools for system security.

### Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-s, 7950 XRS-20e

## security

### Syntax

**security**

### Context

[\[Tree\]](#) (tools>perform security)

### Full Context

tools perform security

### Description

This command enables tools for testing security.

### Platforms

All

## 21.33 security-policy

### security-policy

#### Syntax

```
security-policy router [Base] [security-policy-id security-policy-id]
security-policy service service-id [security-policy-id security-policy-id]
```

#### Context

[\[Tree\]](#) (show>ipsec security-policy)

#### Full Context

```
show ipsec security-policy
```

#### Description

This command displays

#### Parameters

##### *service-id*

Specifies the service-id of the tunnel delivery service.

**Values** 1 to 214748364  
svc-name: 64 char max

##### *security-policy-id*

Specifies the IPsec security policy entry that this tunnel will use.

**Values** 1 to 8192

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the **show ipsec security-policy** command.

#### Output Example

```
*A:ALA-48>show>ipsec# security-policy 1
=====
Security Policy Param Entries
=====
SvcId      Security  Policy   LocalIp      RemoteIp
PlcyId     ParamsId
-----
1          1         1        0.0.0.0/0    0.0.0.0/0
-----
```

```
No. of IPsec Security Policy Param Entries: 1
=====
*A:ALA-48>show>ipsec#
```

## 21.34 seen-ip

### seen-ip

#### Syntax

```
seen-ip transit-ip-policy ip-policy-id
seen-ip transit-ip-policy ip-policy-id clear
```

#### Context

[\[Tree\]](#) (tools>dump>app-assure seen-ip)

#### Full Context

```
tools dump application-assurance seen-ip
```

#### Description

This command dumps application-assurance seen-ip information for a specified transit-ip policy.

#### Parameters

##### *ip-policy-id*

An integer that identifies a transit IP profile entry.

**Values** 1 to 65535

##### **clear**

Clears the seen IP information after reading.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 21.35 segment-routing

### segment-routing

#### Syntax

```
segment-routing
```



## Context

[\[Tree\]](#) (clear>router segment-routing)

## Full Context

clear router segment-routing

## Description

Commands in this context clear segment routing statistics.

## Platforms

All

## segment-routing

## Syntax

**segment-routing**

## Context

[\[Tree\]](#) (show>router segment-routing)

## Full Context

show router segment-routing

## Description

Commands in this context display segment routing information.

## Platforms

All

## segment-routing

## Syntax

**segment-routing**

## Context

[\[Tree\]](#) (tools>dump>router segment-routing)

## Full Context

tools dump router segment-routing

## Description

Commands in this context display segment routing information.

## Platforms

All

## segment-routing

## Syntax

**segment-routing**

## Context

[\[Tree\]](#) (monitor>router segment-routing)

## Full Context

monitor router segment-routing

## Description

Commands in this context monitor Segment Routing Statistics.

## Platforms

All

## 21.36 segment-routing-v6

## segment-routing-v6

## Syntax

**segment-routing-v6 [summary]**

## Context

[\[Tree\]](#) (show>router segment-routing-v6)

## Full Context

show router segment-routing-v6

## Description

Commands in this context display SRv6 information.

## Parameters

**summary**

Displays information in a summarized format.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## Output

Use the following command to display SRv6 information.

```
show router segment-routing-v6 summary
```

## Output Example

```
=====
Segment Routing v6
=====
Origination FPE           : 1
Source IPv6 Address       :
-----
Micro Segment
-----
Block Length              : 48 bits
Global Entries            : 12 (16384 uNs)
SID Length                : 16 bits
=====
Locator                   Admin State
  Prefix
-----
C1                         Up
  3333:3:3:3::/64
-----
Locators : 1
-----
=====
Micro Segment Locator    Admin/Oper St
  Prefix
-----
msl1                      Up/Up
  3333:3:3:3::/64
-----
Micro Segment Locators : 1
=====
```

## segment-routing-v6

### Syntax

**segment-routing-v6**

### Context

[\[Tree\]](#) (show>router>isis segment-routing-v6)

### Full Context

show router isis segment-routing-v6

## Description

Commands in this context display IS-IS SRv6 information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## segment-routing-v6

## Syntax

**segment-routing-v6** [*ip-address*]

## Context

[\[Tree\]](#) (show>service segment-routing-v6)

## Full Context

show service segment-routing-v6

## Description

This command displays SRv6 information.

## Parameters

### *ip-address*

Specifies the IP address.

**Values**    *ipv4-address* — a.b.c.d  
              *ipv6-address* — x:x:x:x:x:x:x (eight 16-bit pieces)  
                          x:x:x:x:x:d.d.d.d  
              x — [0 to FFFF] H  
              d — [0 to 255] D

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## segment-routing-v6

## Syntax

**segment-routing-v6** [*instance instance*] [*locator locator-name*] [**end-dt4**] [**end-dt6**] [**end-dt46**] [**end-dx2**]  
                          [**end-dt2u**] [**end-dt2m**]

**segment-routing-v6 detail**

**segment-routing-v6** [*instance instance*] **destinations**

**segment-routing-v6** [*instance instance*] **esi esi**

```
segment-routing-v6 [instance instance] micro [micro-segment-locator ms-locator-name] [udx2]  
  [udt2m] [udt2u] [udt4] [udt6] [udt46]
```

## Context

[\[Tree\]](#) (show>service>id segment-routing-v6)

## Full Context

```
show service id segment-routing-v6
```

## Description

This command displays SRv6 service information.

## Parameters

### *instance*

Specifies the instance ID for display.

**Values** 1 to 2

### *locator-name*

Specifies the locator name for display, up to 64 characters.

### **end-dt4**

Displays the End.DT4 function associated with the SRv6 instance in the service.

### **end-dt6**

Displays the End.DT6 function associated with the SRv6 instance in the service.

### **end-dt46**

Displays the End.DT46 function associated with the SRv6 instance in the service.

### **end-dx2**

Displays the End.DX2 function associated with the SRv6 instance in the service.

### **end-dt2u**

Displays the End.DT2U function associated with the SRv6 instance in the service.

### **end-dt2m**

Displays the End.DT2M function associated with the SRv6 instance in the service.

### **destinations**

Specifies that all destinations for display are included.

### *esi*

Specifies a 10-byte ESI by which to filter the displayed information. For example, ESI-0 | ESI-MAX or 00-11-22-33-44-55-66-77-88-99 with any of these separators ('-',':',';').

### *ms-locator-name*

Specifies the micro-segment locator name for display, up to 64 characters.

### **udt4**

Displays the uDT4 function associated with the SRv6 instance in the service.

**udt6**

Displays the uDT6 function associated with the SRv6 instance in the service.

**udt46**

Displays the uDT46 function associated with the SRv6 instance in the service.

**udx2**

Displays the uDX2 function associated with the SRv6 instance in the service.

**udt2u**

Displays the uDT2U function associated with the SRv6 instance in the service.

**udt2m**

Displays the uDT2M function associated with the SRv6 instance in the service.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

**Output**

**Output Example**

[Table 469: SRv6 instance Field Descriptions](#) describes the SRv6 instance field descriptions.

Use the following command to display SRv6 instance and destination information.

```
show service id "bd-1900-srv6" segment-routing-v6 instance 1 destinations
```

```
=====
TEP, SID (Instance 1)
=====
TEP Address                Segment Id                  Oper  Mcast Num
                           State                       State MACs
-----
192.0.2.3                  cafe:1:0:3:7b1c:9000::     Up    BUM   0
192.0.2.4                  cafe:1:0:4:7:b1ca::       Up    BUM   0
192.0.2.5                  cafe:1:0:5:7b1c:e000::     Up    BUM   0
192.0.2.5                  cafe:1:0:5:7b1c:f000::     Up    -     1
-----
Number of TEP, SID: 4
=====
```

```
=====
Segment Routing v6 Ethernet Segment Dest (Instance 1)
=====
Eth SegId                  Num. Macs                  Last Update
-----
```

```
show service id "bd-1900-srv6" segment-routing-v6 instance 1 destinations detail
```

```
=====
TEP, SID (Instance 1)
=====
TEP Address                Segment Id                  Oper  Mcast Num
                           State                       State MACs
-----
192.0.2.3                  cafe:1:0:3:7b1c:9000::     Up    BUM   0
```

```

Oper Flags      : None
Sup BCast Domain : No
Last Update    : 02/23/2023 11:12:29
192.0.2.4      : cafe:1:0:4:7:b1ca::          Up    BUM    0
Oper Flags      : None
Sup BCast Domain : No
Last Update    : 02/23/2023 11:12:29
192.0.2.5      : cafe:1:0:5:7b1c:e000::       Up    BUM    0
Oper Flags      : None
Sup BCast Domain : No
Last Update    : 02/23/2023 11:12:29
192.0.2.5      : cafe:1:0:5:7b1c:f000::       Up    -      1
Oper Flags      : None
Sup BCast Domain : No
Last Update    : 02/23/2023 11:12:29
-----
Number of TEP, SID: 4
-----
=====
Segment Routing v6 Ethernet Segment Dest (Instance 1)
=====
Eth SegId              Num. Macs      Last Update
-----
    
```

Table 469: SRv6 instance Field Descriptions

Field	Description
Locator	The locator name
Type	The type
Function	The function
SID	The segment ID
Status	The status
Instance	The instance
Mcast	The multicast value
TEP Address	The tunnel endpoint IP address
Segment Id	The segment ID
L2 PBR	The layer 2 policy based routing value
EvpnStatic	The EVPN static value
SupBcasDom	The Sup BCast Domain value
Num MACs	The number of MACs
Number of TEP, SID	The total number of TEP and SIDs

Field	Description
No Matching Entries	The number of matching entries

## 21.37 selective-fib-log

### selective-fib-log

#### Syntax

**selective-fib-log**

#### Context

**[Tree]** (tools>dump>router selective-fib-log)

#### Full Context

tools dump router selective-fib-log

#### Description

This command configures the dump tools for selective FIB log information for a specific IOM.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of selective FIB log information.

#### Output Example

```
*A:Dut-C# /tools dump router selective-fib-log
 1 : 2020/01/08 13:32:59.100 : Creating Base router
 2 : 2020/01/08 13:32:59.101 : Adding port system to if=system Base router
 2 : 2020/01/08 13:32:59.103 : Creating management router
 3 : 2020/01/08 13:32:59.103 : Creating vpls-management instance
 4 : 2020/01/08 13:32:59.103 : Adding port A/1 to if=management management router
 4 : 2020/01/08 13:40:55.404 : Adding port 1/1/5 to if=ip-10.10.5.5 Base router
 4 : 2020/01/08 13:40:55.407 : Adding port 2/1/6 to if=ip-10.10.7.7 Base router
 4 : 2020/01/08 13:40:55.411 : Adding port 2/1/2 to if=ip-10.10.11.11 Base router
 4 : 2020/01/08 13:40:55.414 : Adding port 2/1/2 to if=ip-10.10.13.13 Base router
 4 : 2020/01/08 13:40:55.417 : Adding port 2/1/2 to if=ip-10.10.15.15 Base router
 4 : 2020/01/08 13:40:55.420 : Adding port 1/1/1 to if=ip-10.10.17.18 Base router
 4 : 2020/01/08 13:40:55.423 : Adding port 1/1/3 to if=ip-10.10.21.22 Base router
 4 : 2020/01/08 13:40:55.427 : Adding port 2/1/3 to if=ip-10.10.23.24 Base router
 4 : 2020/01/08 13:40:55.430 : Adding port 2/1/4 to if=ip-10.10.25.26 Base router
 4 : 2020/01/08 13:40:55.433 : Adding port 1/1/2 to if=ip-10.10.27.28 Base router
 4 : 2020/01/08 13:40:55.436 : Adding port 2/1/1 to if=ip-10.10.31.31 Base router
 4 : 2020/01/08 13:40:55.440 : Adding port 3/1/3 to if=ip-10.10.39.40 Base router
 4 : 2020/01/08 13:40:55.443 : Adding port 3/1/1 to if=ip-10.10.43.44 Base router
 4 : 2020/01/08 13:40:55.446 : Adding port 3/1/2 to if=ip-10.10.45.45 Base router
 4 : 2020/01/08 13:40:55.449 : Adding port 2/2/2 to if=ip-10.10.47.47 Base router
```



```
4 : 2020/01/08 13:40:55.453 : Adding port 2/2/1 to if=ip-10.10.49.49 Base router
4 : 2020/01/08 13:40:55.456 : Adding port 1/1/4 to if=ip-10.10.61.61 Base router
4 : 2020/01/08 13:40:55.459 : Adding port 2/1/5 to if=ip-10.10.63.63 Base router
4 : 2020/01/08 13:40:55.465 : Creating router 10105151
5 : 2020/01/08 13:40:55.470 : Adding port 1/2/1 to if=vprn-10.10.51.51 router 10105151
5 : 2020/01/08 13:40:55.475 : Creating router 10105152
6 : 2020/01/08 13:40:55.480 : Adding port 1/2/2 to if=vprn-10.10.51.52 router 10105152
6 : 2020/01/08 13:41:10.678 : Removing port 1/1/4 from if=ip-10.10.61.61 Base router
6 : 2020/01/08 13:41:10.681 : Removing port 1/2/1 from if=vprn-10.10.51.51 router 10105151
6 : 2020/01/08 13:41:10.684 : Removing port 1/2/2 from if=vprn-10.10.51.52 router 10105152
6 : 2020/01/08 13:41:10.690 : Removing port 2/1/2 from if=ip-10.10.11.11 Base router
6 : 2020/01/08 13:41:10.692 : Removing port 2/1/2 from if=ip-10.10.15.15 Base router
6 : 2020/01/08 13:41:10.693 : Removing port 2/1/2 from if=ip-10.10.13.13 Base router
6 : 2020/01/08 13:41:10.698 : Removing port 2/1/5 from if=ip-10.10.63.63 Base router
6 : 2020/01/08 13:41:10.711 : Removing port 1/1/1 from if=ip-10.10.17.18 Base router
6 : 2020/01/08 13:41:10.713 : Removing port 1/1/3 from if=ip-10.10.21.22 Base router
6 : 2020/01/08 13:41:10.715 : Removing port 2/1/3 from if=ip-10.10.23.24 Base router
6 : 2020/01/08 13:41:10.717 : Removing port 2/1/4 from if=ip-10.10.25.26 Base router
6 : 2020/01/08 13:41:10.720 : Removing port 1/1/2 from if=ip-10.10.27.28 Base router
6 : 2020/01/08 13:41:10.722 : Removing port 2/1/1 from if=ip-10.10.31.31 Base router
6 : 2020/01/08 13:41:10.724 : Removing port 3/1/3 from if=ip-10.10.39.40 Base router
6 : 2020/01/08 13:41:10.727 : Removing port 3/1/1 from if=ip-10.10.43.44 Base router
6 : 2020/01/08 13:41:10.729 : Removing port 3/1/2 from if=ip-10.10.45.45 Base router
6 : 2020/01/08 13:41:10.731 : Removing port 2/2/2 from if=ip-10.10.47.47 Base router
6 : 2020/01/08 13:41:10.733 : Removing port 2/2/1 from if=ip-10.10.49.49 Base router
6 : 2020/01/08 13:41:10.735 : Removing port 1/1/5 from if=ip-10.10.5.5 Base router
6 : 2020/01/08 13:41:10.741 : Removing port 2/1/6 from if=ip-10.10.7.7 Base router
6 : 2020/01/08 13:41:10.751 : Deleting router 10105151
6 : 2020/01/08 13:41:10.756 : Deleting router 10105152
6 : 2020/01/08 13:41:15.713 : Adding port 1/1/4 to if=to_Ixia3 Base router
6 : 2020/01/08 13:41:15.723 : Adding port 2/1/5 to if=to_Ixia.24 Base router
6 : 2020/01/08 13:41:22.170 : Removing port 1/1/4 from if=to_Ixia3 Base router
6 : 2020/01/08 13:41:22.176 : Removing port 2/1/5 from if=to_Ixia.24 Base router
6 : 2020/01/08 13:58:37.666 : Enable system selective-fib
7 : 2020/01/08 13:59:17.668 : Creating router 1
8 : 2020/01/08 13:59:17.669 : Setting vrf-target on router 1
8 : 2020/01/08 13:59:17.670 : Enable auto-bind-tunnel for router 1
8 : 2020/01/08 13:59:17.676 : Adding port 1/1/2 to if=to_Dut-B router 1
9 : 2020/01/08 14:01:17.851 : Setting disable-selective-fib for router 1
10 : 2020/01/08 14:03:58.104 : Disable system selective-fib
11 : 2020/01/08 14:07:59.686 : Removing port 1/1/2 from if=to_Dut-B router 1
11 : 2020/01/08 14:07:59.699 : Deleting router 1
*A:Dut-C#
```

## 21.38 send-force-renew

### send-force-renew

#### Syntax

**send-force-renew** *ip-address*

#### Context

**[Tree]** (tools>perform>router>dhcp>server send-force-renew)

### Full Context

tools perform router dhcp local-dhcp-server send-force-renew

### Description

This command sends a DHCP FORCERENEW message on behalf of the DHCP server to the DHCP client with specified IP address. A DHCP lease with the specified IP address must exist in the DHCP server.

### Parameters

#### *ip-address*

Specifies the DHCP client's IP address in dotted notation a.b.c.d.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 21.39 sensor-group

### sensor-group

### Syntax

**sensor-group** *name*

**sensor-group**

### Context

[\[Tree\]](#) (show>system>telemetry sensor-group)

### Full Context

show system telemetry sensor-group

### Description

This command displays the sensor group information.

### Parameters

#### *name*

Specifies the sensor group name, up to 32 characters.

### Platforms

All

### Output

The following output is an example of telemetry sensor group information and [Table 470: Show Sensor Group Field Descriptions](#) describes the output fields.

### Output Example

```
# show system telemetry sensor-group
=====
Telemetry sensor-groups
=====
Name                                     Valid   Invalid
                                     paths  paths
-----
miro                                     1       0
-----
No. of Telemetry sensor-groups: 1
=====
```

Table 470: Show Sensor Group Field Descriptions

Label	Description
Name	Displays the name of the telemetry sensor group name.
Valid paths	Displays the number of valid sensor group paths.
Invalid paths	Displays the number of invalid sensor group paths.
No. of Telemetry sensor-groups	Displays the total number of telemetry sensor groups.

## 21.40 server

server

### Syntax

**server all**

**server capability**

**server prefix** *ip-prefix/prefix-length*

**server**

### Context

**[Tree]** (show>test-oam>twamp server)

### Full Context

show test-oam twamp server

### Description

This command displays TWAMP server information.

## Parameters

### all

Displays all server information.

### ip-prefix/prefix-length

Specifies the IP address prefix of the TWAMP server.

#### Values

ipv4-address:	a.b.c.d (host bits must be 0)
ipv4-prefix-length	0 to 32
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x: [0 to FFFF]H d: [0 to 255]D

### capability

Displays the modes referenced or supported by the TWAMP server, with an RFC reference where those modes are defined.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of TWAMP server information.

### Output Example

```
*A:ALA-48# show test-oam twamp server
=====
TWAMP Server (port 862)
=====
Admin State : Up                Oper State : Up
Up Time     : 0d 00:00:05
Curr Conn   : 1                  Max Conn   : 32
ConnTimeout : 1800              Conn Reject : 2
Curr Sess   : 2                  Max Sess   : 32
Tests Done  : 5                  Tests Rej   : 0
Tests Abort : 0
TstPktsRx  : 999                TstPktsTx  : 999
=====
Prefix      : 10.0.0.0/8
Tests Abort : 0
TstPktsRx  : 999                TstPktsTx  : 999
=====
Prefix      : 10.0.0.0/8
Description : NMS-West
=====
Admin State : Up                Oper State : Up
Curr Conn   : 1                  Max Conn   : 32
Conn Reject : 0
Curr Sess   : 2                  Max Sess   : 32
Tests Done  : 5                  Tests Rej   : 0
```

```

Tests Abort : 0
TstPktsRx  : 999                               TstPktsTx   : 999
-----
Client      Sessions      Idle   TstPktsRx  TstPktsTx
      Curr/Done/Rej/Abort
-----
10.1.1.1    2/5/0/0      920   999        999
=====
Prefix      : 10.0.0.0/16
Description : NMS-West-Special
=====
Admin State : Up                               Oper State  : Up
Curr Conn   : 0                               Max Conn   : 32
Conn Reject : 0
Curr Sess   : 0                               Max Sess   : 32
Tests Done  : 0                               Tests Rej   : 0
Tests Abort : 0
TstPktsRx  : 0                               TstPktsTx  : 0
-----
Client      Sessions      Idle   TstPktsRx  TstPktsTx
      Curr/Done/Rej/Abort
-----
=====

*A:ALA-48# show test-oam twamp server capability
=====
TWAMP Server Supported Modes of Operation with RFC Reference
=====
Bit      Value      Description      RFC
-----
0         1              Unauthenticated  5357
4         16              Individual Session Control  5938
5         32              Reflect Octets Capability  6038
6         64              Symmetrical Size Sender Test Packet Format  6038
=====
    
```

## server

### Syntax

**server**

### Context

**[Tree]** (clear>test-oam>twamp server)

### Full Context

clear test-oam twamp server

### Description

This command clears TWAMP server statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## server

### Syntax

**server**

### Context

[\[Tree\]](#) (tools>dump>test-oam>twamp server)

### Full Context

tools dump test-oam twamp server

### Description

This command dumps TWAMP server information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 21.41 server-stats

## server-stats

### Syntax

**server-stats**

### Context

[\[Tree\]](#) (show>router>dhcp6>server server-stats)

[\[Tree\]](#) (show>router>dhcp>server server-stats)

### Full Context

show router dhcp6 local-dhcp-server server-stats

show router dhcp local-dhcp-server server-stats

### Description

This command displays DHCP or DHCP6 server statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of server statics information

### Output Example

```
*A:SUB-Dut-A# show router dhcp local-dhcp-server dhcpS1 server-stats
=====
Statistics for DHCP Server dhcpS1 router Base
=====
Rx Discover Packets           : 0
Rx Request Packets           : 0
Rx Release Packets           : 0
Rx Decline Packets           : 0
Rx Inform Packets            : 0

Tx Offer Packets             : 0
Tx Ack Packets               : 0
Tx Nak Packets               : 0
Tx Forcerenew Packets        : 0

Client Ignored Offers        : 0
Leases Timed Out             : 0

Dropped Bad Packet           : 0
Dropped Invalid Type         : 0
Dropped No User Database     : 0
Dropped Unknown Host         : 0
Dropped User Not Allowed     : 0
Dropped Lease Not Ready      : 0
Dropped Lease Not Found      : 0
Dropped Not Serving Pool     : 0
Dropped Invalid User         : 0
Dropped Overload             : 0
Dropped Persistence Overload : 0
Dropped Generic Error        : 0
Dropped Destined To Other    : 0
Dropped Address Unavailable  : 0
Dropped Max Leases Reached   : 0
Dropped Server Shutdown      : 0
Dropped No Subnet For Fixed IP: 0

=====
*A:SUB-Dut-A#
```

```
*A:cses-V26>show>router>dhcp6>server# server-stats
=====
Statistics for DHCPv6 Server test1 router Base
=====
Rx Solicit Packets           : 0
Rx Request Packets           : 0
Rx Confirm Packets           : 0
Rx Renew Packets             : 0
Rx Rebind Packets            : 0
Rx Decline Packets           : 0
Rx Release Packets           : 0
Rx Information Request Packets: 0
Rx Leasequery Packets        : 0
Tx Advertise Packets         : 0
Tx Reply Packets             : 0
Tx Reconfigure Packets       : 0
Tx Leasequery Reply Packets  : 0
Client Ignored Offers        : 0
```

```

Leases Timed Out           : 0
Dropped Bad Packet        : 0
Dropped Invalid Type      : 0
Dropped Lease Not Ready   : 0
Dropped Not Serving Pool  : 0
Dropped Overload          : 0
Dropped Persistence Overload : 0
Dropped Generic Error     : 0
Dropped Destined To Other : 0
Dropped Max Leases Reached : 0
Dropped Server Shutdown   : 0
Dropped Leasequery Not Allowed: 0
Dropped Duplicate         : 0
Dropped busy primary audit : 0
Rx Int. PPP SLAAC Requests : 0
Rx Int. IpoE SLAAC Requests : 0
Rx Int. IpoE WAN Requests : 0
Rx Int. IPsec             : 0
Rx Internal Releases      : 0
Dropped Internal w/Failover : 0
Dropped Internal w/Int-id-map : 0
Dropped Internal w/User-ident : 0
Dropped Internal w/Conflicts : 0
Failover statistics
-----
Dropped Invalid Packets   : 0
Failover Shutdown        : 0
Lease Already Expired     : 0
Maximum Lease Count Reached : 0
Prefix Not Found         : 0
Host Conflict             : 0
Address Conflict          : 0
Peer conflict             : 0
Persistence congestion    : 0
No Lease Hold Time Configured : 0
Invalid Prefix Length     : 0
Lease Not Found           : 0
=====
*A:cses-V26>show>router>dhcp6>server#
    
```

**Table 471: Server Stats Field Descriptions** describes server stats show command output fields.

*Table 471: Server Stats Field Descriptions*

Field	Description
RX Discover Packets	The number of discover packets received by the DHCP server instance
Rx Request Packets	The number of request packets received by the DHCP server instance.
Rx Release Packets	The number of released packets received by the DHCP server instance
Rx Decline Packets	The number of declined packets received by the DHCP server instance
Rx Inform Packets	The number of inform packets received by the DHCP server instance



Field	Description
Tx Offer Packets	The number of offer packets sent by the DHCP server instance
Tx Ack Packets	The number of DHCP ACK packets sent by the DHCP server instance
Tx Nak Packets	The number of DHCP NAK packets sent by the DHCP server instance
Tx Forcerenew Packets	The number of DHCP force renew packets sent by the server instance
Client Ignored Offers	The number of DHCP offer packets sent by the DHCP server instance that were ignored by clients
Leases Timed Out	The number of leases timed out
Dropped Bad Packet	The number of dropped of DHCP packets received that were corrupt
Dropped Invalid Type	The number of DHCP packets received that had an invalid message type
Dropped No User Database	The number of DHCP packets dropped because the value of this server instance is not equal to the default value and a local user database with that name could not be found
Dropped Unknown Host	The number of DHCP packets dropped from hosts which were not found in the user database
Dropped User Not Allowed	The number of DHCP packets dropped from hosts which are found in the user database, but which have no address or pool specified
Dropped Lease Not Ready	The number of DHCP packets dropped by the server instance before the lease database was ready
Dropped Lease Not Found	The number of DHCP packets dropped by the server instance because no (valid) lease was found
Dropped Not Serving Pool	The number of DHCP packets dropped by the server instance because there were no more free addresses in the pool
Dropped Invalid User	The number of DHCP packets dropped by the server instance because the MAC address of the sender or the option 82 didn't match the host lease state
Dropped Overload	The number of DHCP packets dropped by the server instance because they were received more than the server instance can handle

Field	Description
Dropped Persistence Overload	The number of DHCP packets dropped by the server instance because they were received in more than the DHCP persistence system can handle. If this occurs, only releases and declines are still processed.
Dropped Generic Error	The number of DHCP packets dropped by the server instance because of a generic error
Dropped Destined To Other	The number of DHCP requests dropped by the server instance because the (broadcast) request was not destined to this server
Dropped Address Unavailable	The number of DHCP requests dropped by the server instance because the requested address is not available
Dropped Max Leases Reached	The number of DHCP packets dropped by the server instance because the maximum number of leases was reached
Dropped Server Shutdown	The number of DHCP packets dropped by the server instance during server instance shutdown
Dropped No Subnet for Fixed IP	The number of DHCP packets dropped by the server instance for user-db hosts with a fixed address because the subnet to which the address belongs is not configured

## server-stats

### Syntax

**server-stats**

### Context

[\[Tree\]](#) (clear>router>dhcp6>server server-stats)

[\[Tree\]](#) (clear>router>dhcp>server server-stats)

### Full Context

clear router dhcp6 local-dhcp-server server-stats

clear router dhcp local-dhcp-server server-stats

### Description

This command clears all local DHCP or DHCPv6server statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 21.42 server-tls-profile

### server-tls-profile

#### Syntax

**server-tls-profile** [*server-tls-profile*]  
**server-tls-profile** *server-tls-profile* **association**

#### Context

[\[Tree\]](#) (show system security tls server-tls-profile)

#### Full Context

show system security tls server-tls-profile

#### Description

This command displays TLS server profile information.

#### Parameters

##### **server-tls-profile**

Specifies the name of a TLS server profile for which to display information, up to 32 characters.

#### Platforms

All

## 21.43 servers

### servers

#### Syntax

**servers**  
**servers all**

#### Context

[\[Tree\]](#) (show>router>dhcp servers)  
[\[Tree\]](#) (show>router>dhcp6 servers)

## Full Context

show router dhcp servers  
show router dhcp6 servers

## Description

This command lists the local DHCP or DHCP6 servers.

## Parameters

**all**

Displays a complete list of local DHCP or DHCP6 servers.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of local DHCP or DHCP6 server information.

### Output Example

```
*A:ALA-49>show>router>dhcp# servers
=====
Overview of DHCP Servers
=====
Active Leases:      0
Maximum Leases:    159744

Router              Server                               Admin State
-----
Router: Base        base_router_dhcp_server             outOfService
Service: 3          s1                                   inService
=====
*A:ALA-49>show>router>dhcp#
```

```
*A:cses-V26>show>router>dhcp6# servers
=====
Overview of DHCP Servers
=====
Active Leases:      0
Maximum Leases:    159744
Router              Server                               Admin State
-----
Router: Base        dhcp6                                 inService
Router: Base        test1                                 inService
Router: Base        testtest                              outOfService
=====
*A:cses-V26>show>router>dhcp6#
```

## 21.44 service

service

### Syntax

service

### Context

[\[Tree\]](#) (clear service)

### Full Context

clear service

### Description

Commands in this context clear services commands.

### Platforms

All

service

### Syntax

service

### Context

[\[Tree\]](#) (show service)

### Full Context

show service

### Description

Commands in this context display services related information.

### Platforms

All

## service

### Syntax

**service**

### Context

[\[Tree\]](#) (tools>perform service)

[\[Tree\]](#) (tools>dump service)

### Full Context

tools perform service

tools dump service

### Description

Commands in this context configure and view tools for service debugging.

### Platforms

All

## service

### Syntax

**service** *service-id*

### Context

[\[Tree\]](#) (show>ipsec service)

### Full Context

show ipsec service

### Description

This command displays service specific IPsec configuration.

### Parameters

*service-id*

The VPRN service ID or service name.

**Values** *service-id*: 1 to 2147483647  
*svc-name*: up to 64 characters maximum

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **service** command.

```
show ipsec service 100
```

## Output Example

```
=====
Service-specific IPsec configurations
=====
Reverse Route Override: any-idi
=====
```

## service

### Syntax

**service**

### Context

[\[Tree\]](#) (monitor service)

### Full Context

monitor service

### Description

Commands in this context configure criteria to monitor specific service SAP criteria.

## Platforms

All

## service

### Syntax

**service** *service-id* [**security-policy-id** *security-policy-id*]

### Context

[\[Tree\]](#) (show>ipsec>security-policy service)

### Full Context

show ipsec security-policy service

## Description

This command displays service security policy information.

## Parameters

### *service-id*

Specifies the service ID.

**Values**    *service-id*: 1 to 2148278386  
              *svc-name*: Up to 64 characters

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 21.45 service-activation-testhead

### service-activation-testhead

## Syntax

**service-activation-testhead**

## Context

[\[Tree\]](#) (show>test-oam service-activation-testhead)

## Full Context

show test-oam service-activation-testhead

## Description

Commands in this context display service activation testhead information.

The **service-test** command shows the results and configuration for one Y.1564 service activation test run.

The **service-tests** command shows a list of all available Y.1564 service activation tests.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS

### service-activation-testhead

## Syntax

**service-activation-testhead service-test all**

**service-activation-testhead service-test** *name* [ **run** *run-number* ]



## Context

[\[Tree\]](#) (clear>test-oam service-activation-testhead)

## Full Context

clear test-oam service-activation-testhead

## Description

This command clears the results of all previous executions for the specified service test.

## Parameters

### all

Keyword used to specify the deletion of all reports.

### name

Specifies the service test name, up to 64 characters, for which to clear results.

### run

Specifies a particular instance of the service test for which to clear results.

**Values** 1 to 4294967295

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS

## 21.46 service-name-using

### service-name-using

## Syntax

service-name-using [detail]

## Context

[\[Tree\]](#) (show>service service-name-using)

## Full Context

show service service-name-using

## Description

This command displays the services defined on the system, ordered by name.

## Parameters

### detail

This parameter displays all of the services configured on the system along with their descriptions and administrative and operational states.

## Platforms

All

## Output

The following shows an example of **service name-using** information.

[Table 472: Service Commands Service-Name-Using Field Descriptions](#) describes the show command output fields.

### Output Example

```
*A:PE-1# show service service-name-using
=====
Services By Name
=====
Service Name                                     Type      Service Id
-----
server-3                                         Vprn      3
server-5                                         Vprn      5
server-7                                         Vprn      7
evi-16                                          Vpls      16
CE-31                                            Vprn      31
_tmnx_InternalIesService                       Ies       2147483648
_tmnx_InternalVplsService                     intV*    2147483649
-----
Matching Services : 7
=====
*A:PE-1#
*A:PE-1#
*A:PE-1# show service service-name-using detail
=====
Services By Name
=====
Service Name                                     Type      Service Id
-----
server-3                                         Vprn      3
Admin/Oper: Up/Up
Customer: 1
Description:

server-5                                         Vprn      5
Admin/Oper: Up/Up
Customer: 1
Description:

server-7                                         Vprn      7
Admin/Oper: Up/Up
Customer: 1
Description:

evi-16                                          Vpls      16
Admin/Oper: Up/Up
Customer: 1
Description:
```

```

CE-31                                     Vprn          31
Admin/Oper: Up/Up
Customer: 1
Description:

_tmnx_InternalIesService                 Ies          2147483648
Admin/Oper: Up/Down
Customer: 1
Description:
IES Service for internal purposes only

_tmnx_InternalVplsService                 intV*        2147483649
Admin/Oper: Up/Down
Customer: 1
Description:
VPLS Service for internal purposes only
-----
Matching Services : 7
=====
    
```

Table 472: Service Commands Service-Name-Using Field Descriptions

Label	Description
Service Name	Displays the name of the service.
Type	Displays the service type configured for the service ID.
Service Id	Displays the service identifier.

## 21.47 service-test

### service-test

#### Syntax

**service-test** *service-test-name* **run** *run-number*

#### Context

[\[Tree\]](#) (show>test-oam>sath service-test)

#### Full Context

show test-oam service-activation-testhead service-test

#### Description

This command displays the results and configuration for the specified Y.1564 service activation test run.

## Parameters

### **service-test-name**

Specifies the service test name, up to 64 characters.

### **run-number**

Specifies a particular instance of the service test for which to display results.

**Values** 1 to 4294967295

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS

## Output

The following outputs are examples of service test configuration information, and [Table 473: Output fields: service-test](#) describes the output fields:

### Output example (service test still running)

```
show test-oam service-activation-testhead service-test "10" run 10
```

```
-----  
Y.1564 Results for Run 10  
Service Test 10
```

```
-----  
Description      : Service_Test_10  
Oper State       : running  
Start Time       : 2021/05/07 16:32:17 UTC  
End Time         : N/A  
Stream Run Type  : parallel  
Acct Policy      : (Unspecified)  
Acct Policy Status: none  
Completion Notif'n: disabled  
-----
```

```
-----  
Y.1564 Results for Stream 1 Run 10  
Service Test 10
```

```
-----  
Description      : ST10_Service_Stream_1  
Oper State       : running  
Source MEP       : 100                MEP Domain      : 10  
MEP Assoc.      : 10                Source SAP      : 1/1/1:100  
Source MAC       : 84:69:91:c7:e7:1a  Dest MAC        : 20:e0:9c:e3:d5:8d  
Pattern (Dec): 0                Pattern (Hex): 0x0  
C-Tag Dot1p     : 0                C-Tag DEI       : false  
S-Tag Dot1p     : 0                S-Tag DEI       : false  
Frm Size Tmpl: 1500bytes  
Frm Sequence    : a                Frame Size a    : 1500 bytes  
Frame Size b    : 128 bytes         Frame Size c    : 256 bytes  
Frame Size d    : 512 bytes         Frame Size e    : 1024 bytes  
Frame Size f    : 1280 bytes        Frame Size g    : 1518 bytes  
Frame Size h    : 9212 bytes        Frame Size u    : 2000 bytes  
Cfg Tx CIR      : 1000000 kbps      Cfg Tx PIR     : 1100000 kbps  
Acp Crit Tmpl: ACT-1  
Test Types      : CIR  
Comple Notif: enabled  
-----
```

```
-----  
Y.1564 Results for Stream 1 Run 10 Test Type CIR  
Service Test 10  
-----
```

```

Oper State      : running
Test Duration: 10:20 (mm:ss)      Time Left      : 598 s
Start Time     : 2021/05/07 16:32:18 UTC
End Time       : N/A
Frms Injected: 1874571           Frms Received: 1874505
Min Delay      : 36 us            Min Delay Var: 0 us
Max Delay      : 46 us            Max Delay Var: 7 us
Avg Delay      : 41 us            Avg Delay Var: 3 us
    
```

=====  
 Test Compliance Report  
 =====

Criteria	Throughput(kbps)	FLR (%)	Delay (us)	Delay Var (us)
Acceptable	1000000	1.0000	200	200
Configured	1000000	1.0000	200	200
M-Factor	100000	N/A	N/A	N/A
Measured	1000155	0.0035	41	3
Result	unknown	unknown	unknown	unknown

=====

**Output example (service test run complete)**

```
show test-oam service-activation-testhead service-test "10" run 10
```

```
-----
Y.1564 Results for Run 10
Service Test 10
```

```
-----
Description      : Service_Test_10
Oper State       : passed
Start Time       : 2021/05/07 16:32:17 UTC
End Time         : 2021/05/07 16:42:40 UTC
Stream Run Type  : parallel
Acct Policy      : (Unspecified)
Acct Policy Status: none
Completion Notif'n: disabled
    
```

```
-----
Y.1564 Results for Stream 1 Run 10
Service Test 10
```

```
-----
Description      : ST10_Service_Stream_1
Oper State       : passed
Source MEP       : 100                MEP Domain      : 10
MEP Assoc.      : 10                Source SAP      : 1/1/1:100
Source MAC      : 84:69:91:c7:e7:1a   Dest MAC        : 20:e0:9c:e3:d5:8d
Pattern (Dec)   : 0                  Pattern (Hex)   : 0x0
C-Tag Dot1p    : 0                  C-Tag DEI       : false
S-Tag Dot1p    : 0                  S-Tag DEI       : false
Frm Size Tmpl  : 1500bytes
Frm Sequence    : a                  Frame Size a    : 1500 bytes
Frame Size b    : 128 bytes          Frame Size c    : 256 bytes
Frame Size d    : 512 bytes          Frame Size e    : 1024 bytes
Frame Size f    : 1280 bytes         Frame Size g    : 1518 bytes
Frame Size h    : 9212 bytes         Frame Size u    : 2000 bytes
Config Tx CIR   : 1000000 kbps       Config Tx PIR   : 1100000 kbps
Acp Crit Tmpl   : ACT-1
Test Types      : CIR
Complet Notif   : enabled
    
```

```
-----
Y.1564 Results for Stream 1 Run 10 Test Type CIR
Service Test 10
```

```

-----
Oper State      : passed
Test Duration: 10:20 (mm:ss)      Time Left      : 0 s
Start Time     : 2021/05/07 16:32:18 UTC
End Time      : 2021/05/07 16:42:38 UTC
Frms Injected: 51576053          Frms Received: 51575773
Min Delay     : 34 us             Min Delay Var: 0 us
Max Delay     : 55 us             Max Delay Var: 17 us
Avg Delay     : 41 us             Avg Delay Var: 3 us
-----
=====
Test Compliance Report
=====
Criteria      Throughput(kbps)      FLR (%)      Delay (us)      Delay Var (us)
-----
Acceptable    1000000                    1.0000      200             200
Configured    1000000                    1.0000      200             200
M-Factor      100000                     N/A         N/A             N/A
Measured      999912                     0.0005      41              3
Result        pass                        pass        pass            pass
=====
    
```

Table 473: Output fields: service-test

Label	Description
Description	Displays the service test or service stream description
Oper State	running — the specified service test or service stream is running  passed — the specified service test or service stream is complete and has passed
Start Time	Displays the date and time that the specified service test or service stream was started
End Time	Displays the date and time that the specified service test or service stream was completed
Stream Run Type	Sequential — the streams are run consecutively Parallel — the streams are run in parallel
Acct Policy	Displays the accounting policy
Acct Policy Status	Displays the accounting policy status
Completion Notif'n	disabled — the service test completion notification is disabled  enabled — the service test completion notification is enabled
Source MEP	Displays the source MEP
MEP Domain	Displays the MEP domain
MEP Assoc.	Displays MEP associations

Label	Description
Source SAP	Displays the source SAP
Source MAC	Displays the source MAC address
Dest MAC	Displays the destination MAC address
Pattern (Dec)	Displays the data pattern, in decimal notation
Pattern (Hex)	Displays the data pattern, in hexadecimal notation
C-Tag Dot1p	Displays the C-tag dot1p priority value for the VLAN
C-Tag DEI	true — the C-tag DEI is enabled false — the C-tag DEI is disabled
S-Tag Dot1p	Displays the S-tag dot1p priority value for the VLAN
S-Tag DEI	true — the S-tag DEI is enabled false — the S-tag DEI is disabled
Frm Size Tmpl	Displays the frame size template, in bytes
Frm Sequence	Displays the frame sequence
Frame Size a	Displays the frame size, in bytes, for template a
Frame Size b	Displays the frame size, in bytes, for template b
Frame Size c	Displays the frame size, in bytes, for template c
Frame Size d	Displays the frame size, in bytes, for template d
Frame Size e	Displays the frame size, in bytes, for template e
Frame Size f	Displays the frame size, in bytes, for template f
Frame Size g	Displays the frame size, in bytes, for template g
Frame Size h	Displays the frame size, in bytes, for template h
Frame Size u	Displays the frame size, in bytes, for template u
Config Tx Cir	Displays the transmitted CIR configured
Config Tx Pir	Displays the transmitted PIR configured
Acp Crit Tmpl.	Displays the acceptance criteria template
Test Types	Displays the configured test type
Compleat Notif	enabled — the stream completion trap is enabled disabled — the stream completion trap is disabled

Label	Description
Test Duration	Displays the duration, in minutes and seconds, of the test for the service streams
Time Left	Displays the amount of time left to the test for the service stream
Frms Injected	Displays the total number of frames injected
Frms Received	Displays the total number of frames received
Min Delay (us)	Displays the minimum delay
Max Delay (us)	Displays the maximum delay
Avg. Delay (us)	Displays the average delay
Min Delay Var. (us)	Displays the minimum delay variation
Max Delay Var. (us)	Displays the maximum delay variation
Avg. Delay Var. (us)	Displays the average delay variation
M-factor (kbps)	Displays the M-factor, in kb/s
Criteria	thruput (kbps) — the throughput, in kb/s FLR — the frame loss ratio (FLR) Delay (us) — the delay time Delay Var. (us) — the delay variation
Acceptable	Displays the allowed values for the criteria
Configured	Displays the configured values for the criteria
M-factor	Displays the m-factor for the criteria
Measured	Displays the measured values for the criteria
Result	Pass — the test has passed for the specific criteria Fail — the test has failed for the specific criteria

## 21.48 service-tests

### service-tests

#### Syntax

**service-tests** [*service-test-name*]



## Context

[\[Tree\]](#) (show>test-oam>sath service-tests)

## Full Context

show test-oam service-activation-testhead service-tests

## Description

This command displays the run summary for one or all Y.1564 service activation tests.

## Parameters

### **service-test-name**

Specifies the service test name, up to 64 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS

## Output

The following output is an example of service test configuration information, and [Table 474: Output fields: service-tests](#) describes the output fields.

### Output example

```
show test-oam service-activation-testhead service-tests
=====
Y.1564 Service Activation Test Run Summary
=====
Service Test Name                               Run      Completed (UTC)
-----
10                                               1 2021/05/03 19:13:08
10                                               2 2021/05/03 19:18:35
10                                               3 2021/05/03 19:23:40
10                                               4 2021/05/03 19:23:57
10                                               5 2021/05/03 19:29:05
10                                               6 2021/05/03 19:33:11
10                                               7 2021/05/03 19:39:08
10                                               8 2021/05/03 19:40:48
10                                               9 2021/05/03 22:20:24
10                                               10 2021/05/07 16:42:40
-----
No. of Y.1564 Service Activation Test Runs: 10
=====
```

Table 474: Output fields: service-tests

Label	Description
Service Test Name	Displays the name of the service test
Run	Displays the run number
Completed (UTC)	Displays the date and time that the specified service test was completed

## 21.49 service-using

### service-using

#### Syntax

```
service-using [epipe] [ies] [vpls] [vprn] [ mirror] [apipe] [fpipe] [ipipe] [cpipe] [ etree] [b-vpls] [i-vpls]  
[m-vpls] [ sdp sdp-id] [customer customer-id] [creation creation-origin]
```

#### Context

[\[Tree\]](#) (show>service service-using)

#### Full Context

```
show service service-using
```

#### Description

This command displays the services matching certain usage properties. Not all syntax options are available for each router type.

If no optional parameters are specified, all services defined on the system are displayed.

#### Parameters

##### **epipe**

Displays Epipe services.

##### **ies**

Displays IES services.

##### **vpls**

Displays VPLS services.

##### **vprn**

Displays VPRN services.

##### **mirror**

Displays mirror services.

##### **apipe**

Displays Apipe services.

##### **fpipe**

Displays Fpipe services.

##### **ipipe**

Displays Ipipe services.

##### **cpipe**

Displays Cpipe services.

**etree**

Displays etree services.

**b-vpls**

Specifies the B-component instance of the Provider Backbone Bridging (PBB/IEEE 802.1ah) feature. It represents the multi-point tunneling component that multiplexes multiple customer VPNs (ISIDs) together. It is similar to a regular VPLS instance that operates on the backbone MAC addresses.

**i-vpls**

Specifies the I-component instance of the Provider Backbone Bridging (PBB/IEEE 802.1ah) feature. It identifies the specific VPN entity associated to a customer multipoint (E-LAN) service. It is similar to a regular VPLS instance that operates on the customer MAC addresses.

**m-vpls**

Specifies the M-component (managed VPLS) instance of the Provider Backbone Bridging (PBB/IEEE 802.1ah) feature.

**sdp-id**

Displays only services bound to the specified SDP ID.

**Values** 1 to 17407

**Default** Services bound to any SDP ID.

**customer-id**

Displays services only associated with the specified customer ID.

**Values** 1 to 2147483647

**Default** Services associated with any customer.

**creation-origin**

Specifies the method by which the service was created.

**Values** manual, multi-segment-p-w, dyn-script

**Platforms**

All

**Output**

The following output is an example of service using information, and [Table 475: Show Service-Using Output Fields](#) describes the output fields.

**Output Example**

```
*A:ALA-12# show service service-using customer 10
=====
Services
=====
ServiceId   Type      Adm   Opr      CustomerId  Last Mgmt Change
-----
1           VPLS     Up    Up        10          09/05/2006 13:24:15
```

```

100      IES      Up      Up      10      09/05/2006 13:24:15
300      Epipe   Up      Up      10      09/05/2006 13:24:15
-----
Matching Services : 3
=====
*A:ALA-12#

*A:ALA-12# show service service-using
=====
Services
=====
ServiceId  Type      Adm      Opr      CustomerId  Last Mgmt Change
-----
1          uVPLS    Up      Up      1           10/26/2006 15:44:57
2          Epipe    Up      Down    1           10/26/2006 15:44:57
10         mVPLS    Down    Down    1           10/26/2006 15:44:57
11         mVPLS    Down    Down    1           10/26/2006 15:44:57
100        mVPLS    Up      Up      1           10/26/2006 15:44:57
101        mVPLS    Up      Up      1           10/26/2006 15:44:57
102        mVPLS    Up      Up      1           10/26/2006 15:44:57
999        uVPLS    Down    Down    1           10/26/2006 16:14:33
-----
Matching Services : 8
-----
*A:ALA-12#
    
```

The following output is an example of epipe service information for the 7450 ESS or 7750 SR.

```

*A:ALA-12# show service service-using epipe
=====
Services [epipe]
=====
ServiceId  Type      Adm      Opr      CustomerId  Last Mgmt Change
-----
6          Epipe    Up      Up      6           06/22/2006 23:05:58
7          Epipe    Up      Up      6           06/22/2006 23:05:58
8          Epipe    Up      Up      3           06/22/2006 23:05:58
103        Epipe    Up      Up      6           06/22/2006 23:05:58
-----
Matching Services : 4
-----
*A:ALA-12#
    
```

Table 475: Show Service-Using Output Fields

Label	Description
Service Id	The service identifier.
Type	Specifies the service type configured for the service ID.
Adm	The desired state of the service.
Opr	The operating state of the service.
CustomerID	The ID of the customer who owns this service.

Label	Description
Last Mgmt Change	The date and time of the most recent management-initiated change to this service.

## 21.50 services

### services

#### Syntax

**services vc-type** *vc-type* **saii** *global-id: prefix:ac-id* **taii** [256 chars max] **agi** *agi* [ **detail**] [**service-id** *service-id*] [**session** *ip-addr[label-space]*]

**services vc-type** *vc-type* **agi** *agi* [ **detail**] [**service-id** *service-id*] [**session** *ip-addr[label-space]*]

**services** [**vc-type** *vc-type*] [**svc-fec-type**] [ **detail**] [**service-id** *service-id*] [**session** *ip-addr[label-space]*]

**services vc-type** *vc-type* **vc-id** *vc-id* [ **detail**] [**service-id** *service-id*] [**session** *ip-addr[label-space]*]

#### Context

[\[Tree\]](#) (show>router>ldp>bindings services)

#### Full Context

show router ldp bindings services

#### Description

This command displays LDP service FEC bindings.

#### Parameters

##### **vc-type** *vc-type*

Displays information about the VC type associated with this service FEC.

ethernet, vlan, mirror, frdlci, atmsdu, atmcell, atmvc, atmvcpc, ipipe, satop-e1, satop-t1, cesopsn, cesopsn-cas

##### **vc-id** *vc-id*

Displays information about the VC ID associated with this service FEC.

##### **saii** *global-id:prefix:ac-id*

Specifies the a SAI (Source Attachment Individual Identifier).

**Values** <number>:<number> | <a.b.c.d>:<number>

##### **taii**

Specifies the TAI ID, up to 256 characters, associated with this service FEC.

##### **svc-fec-type**

Specifies the FEC type.

**Values** fec128, fec129

**agi agi**

Specifies the Attachment Group identifier TLV associated with this service FEC.

**Values** <ip-addr:comm-val> | <2byte-asnumber:ext-comm-val> | <4byte-asnumber:comm-val> ip-addr - a.b.c.d comm-val - [0 to 65535] 2byte-asnumber - [1 to 65535] ext-comm-val - [0 to 4294967295] 4byte-asnumber - [1 to 4294967295] null - means all value is 0

**detail**

Displays detailed information.

**service-id**

Specifies the service ID number to display.

**Values** 1 to 2147483647

**svc-fec-type**

Specifies the FEC type.

**Values** fec128, fec129

**session ip-addr**

displays configuration information about LDP sessions.

**label-space**

Specifies the label space identifier that the router is advertising on the interface.

**Values** 0 to 65535

**Platforms**

All

## 21.51 session

### session

**Syntax**

**session** [*user-name user-name*] [ **sub-ppp-type** {oe | ol2tp}] [**interface** *ip-int-name* | *ip-address*] [**inter-dest-id** *intermediate-destination-id*] [**no-inter-dest-id**] [**ip-address** *ip-prefix*[/*prefix-length*]] [**port** *port-id*] [**sap** *sap-id*] [**termination-type** *ppp-session-type*] [**mlppp**] [**steering-profile** *steering-profile*] [**circuit-id** *circuit-id*] [**remote-id** *remote-id*]

**session** [*user-name user-name*] [ **circuit-id** *circuit-id*] [**remote-id** *remote-id*] **detail**

**session** [*user-name user-name*] [ **circuit-id** *circuit-id*] [**remote-id** *remote-id*] **statistics**

## Context

[\[Tree\]](#) (show>service>id>ppp session)

## Full Context

```
show service id ppp session
```

## Description

This command displays PPP session information.

## Parameters

### *user-name*

Displays session information about the PPP user name.

### *sub-ppp-type*

Displays session information about the sub PPP type.

**Values** oe, ol2tp

### *ip-int-name*

Displays session information about the specified interface.

### *ip-address*

Displays session information about the IP address.

### *intermediate-destination-id*

Displays session information about the intermediate destination identifier, up to 32 characters, which is encoded in the identification strings.

### *no-inter-dest-id*

Displays session information about no intermediate destination ID.

### *ip-prefix/prefix-length*

Displays session information about the specified IP address and mask.

### *port-id*

Displays session information about the specified port.

### *sap-id*

Displays session information about the specified SAP.

### *ppp-session-type*

Displays session information about the specified PPP session type.

**Values** local, wholesale-local, retail-local, l2tp

### *mlppp*

Displays session information about MLPPP.

### *steering-profile*

Displays session information about the specified steering profile, up to 32 characters.

### *circuit-id*

Displays session information about the specified circuit ID, up to 256 characters.

**remote-id**

Displays session information about the specified remote ID, up to 256 characters.

**detail**

Displays detailed session information.

**statistics**

Displays PPP session statistics.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of service PPP session information.

**Output Example**

```
show service id 1000 ppp session detail
```

```
=====
PPP sessions for service 1000
=====
```

```
User-Name           : user-1@bng-2.com
Description          : svc:1000 sap:[1/x1/1/c1/4:2211.1001]
                     : mac:00:bb:02:00:01:01 sid:1
Up Time              : 0d 00:02:03
Type                 : oE
Termination          : local
IP/L2TP-Id/If-Id    : 10.2.1.201 02:BB:02:FF:FE:00:01:01
MC-Standby           : No
Session Time Left   : N/A

LCP State            : Opened
IPCP State           : Opened
IPv6CP State         : Opened
PPP MTU              : 1492
PPP Auth-Protocol    : CHAP

Keepalive Origin     : Radius
Keepalive Interval   : 15
Keepalive Multiplier : 2
PPP User-Name        : user-1@bng-2.com

Subscriber-interface : sub-int-1
Group-interface      : group-int-1-1

IP Origin            : local-user-db
DNS Origin           : none
NBNS Origin          : none

Subscriber           : user-1@bng-2.com
Sub-Profile-String   : "sub-profile-1"
SLA-Profile-String   : "sla-profile-1"
SPI group ID         : (Not Specified)
ANCP-String          : ""
Int-Dest-Id          : ""
App-Profile-String   : ""
```



```

Category-Map-Name      : ""
Acct-Session-Id       : "0613FF0000000163FF4F0A"
Sap-Session-Index     : 1

IP Address             : 10.2.1.201/24
Primary DNS            : N/A
Secondary DNS          : N/A
Primary NBNS           : N/A
Secondary NBNS         : N/A
Address-Pool           : N/A

IPv6 Prefix            : N/A
IPv6 Prefix Origin     : none
IPv6 Prefix Pool       : ""
IPv6 Del.Pfx.          : 2001:db8:b201:a100::/56
IPv6 Del.Pfx. Origin   : local-user-db
IPv6 Del.Pfx. Pool     : ""
IPv6 Address           : 2001:db8:b002:1a1::1
IPv6 Address Origin    : local-user-db
IPv6 Address Pool      : ""
Primary IPv6 DNS       : N/A
Secondary IPv6 DNS     : N/A
Router adv. policy     : N/A

Ignoring DF bit        : false
Radius sub-if prefix   : N/A

Circuit-Id             :
Remote-Id              :

Radius Session-T0      : N/A
Radius Class 1         : This is a Class attribute
Radius User-Name       : user-1@bng-2.com
Logical-Line-Id        :

-----
Managed Routes
-----
IP Address              Status      Metric Tag      Pref
-----
2001:db8:b201:a100::/56  installed   0      none      0
-----

No. of sessions: 1
=====
    
```

**Table 476: Service PPP Session Field Descriptions** describes PPP session field information.

*Table 476: Service PPP Session Field Descriptions*

Field	Description
User-Name	The user name
Description	The description
Up Time	The time of the last modification
Type	The PPP type
Termination	The termination type

Field	Description
IP/L2TP-Id/If-Id	The IP/L2TP or IF ID
MC-Standby	The MC standby
Session Time Left	The time remaining for the session timeout
LCP State	The LCP open/closed state
IPCP State	The IP CP open/closed state
IPv6CP State	The IPv6 CP open/closed state
PPP MTU	The PPP MTU value
PPP Auth-Protocol	The PPP authentication protocol
PPP User-Name	The PPP user name
Subscriber-interface	The subscriber interface name
Group-interface	The group interface name
IP Origin	The IP origin
DNS Origin	The DNS origin
NBNS Origin	The NBNS origin
Subscriber	The subscriber identification string
Sub-Profile-String	The subscriber profile name
SLA-Profile-String	The SLA profile name
SPI group ID	The SPI group ID
ANCP-String	The value of the ancp-string received from either the DHCP or the RADIUS server
Int-Dest-Id	Intermediate destination identifier received from the RADIUS server
App-Profile-String	The application profile string
Category-Map-Name	The value of the category map name received from the RADIUS server
Acct-Session-Id	The accounting session ID
Sap-Session-Index	The sap session index of the PPP session
IP Address	The IP address
Primary DNS	The primary DNS server

Field	Description
Secondary DNS	The secondary DNS server
Primary NBNS	The primary NBNS server
Secondary NBNS	The secondary NBNS server
Address-Pool	The IP address pool used to search for an IP address for this session
IPv6 Prefix	The IPv6 prefix
IPv6 Prefix Origin	The origin of the IPv6 prefix
IPv6 Prefix Pool	The DHCP server pool from which the IPv6 prefix is allocated
IPv6 Del.Pfx.	The IPv6 delegated prefix
IPv6 Del.Pfx. Origin	The origin of the IPv6 delegated prefix
IPv6 Del.Pfx. Pool	The DHCP server pool from which the delegated prefix is allocated
IPv6 Address	The IPv6 address
IPv6 Address Origin	The origin of the IPv6 address
IPv6 Address Pool	The DHCP server pool from which the address is allocated
Primary IPv6 DNS	The primary IPv6 DNS server
Secondary IPv6 DNS	The secondary IPv6 DNS server
Router adv. policy	The router advertisement policy
Ignoring DF bit	The true/false status of ignoring DF bit
Radius sub-if prefix	The RADIUS subscriber interface prefix
Circuit-Id	The circuit ID of the PPP session
Remote-Id	The remote ID of the PPP session
Radius Session-TO	The value to interpret the session timeout VSA from RADIUS
Radius Class 1	The Class attribute returned by the RADIUS server in an Access-Accept message
Radius User-Name	The User-Name attribute returned by the RADIUS server in an Access-Accept message
Logical-Line-Id	The logical line ID

Field	Description
Subscriber Host Limit Overrides and SLA Profile Instance Host Limit Overrides: (only shown when overrides are active)	
ipv4-arp	The total number of IPv4 ARP hosts limit
ipv4-dhcp	The total number of IPv4 DHCP hosts limit
ipv4-ppp	The total number of IPv4 PPP hosts limit
ipv4-overall	The total number of IPv4 hosts limit
ipv6-pd-ipoe-dhcp	The total number of IPv6 IPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-ppp-dhcp	The total number of IPv6 PPPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-overall	The total number of IPv6 DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-wan-ipoe-dhcp	The total number of IPv6 IPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ipoe-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit
ipv6-wan-ppp-dhcp	The total number of IPv6 PPPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ppp-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit
ipv6-wan-overall	The total number of IPv6 WAN hosts limit
ipv6-overall	The total number of IPv6 hosts limit
lac-overall	The total number of L2TP LAC hosts limit
overall	The total number of subscriber hosts limit
Subscriber Session Limit Overrides and SLA Profile Instance Session Limit Overrides: (only shown when overrides are active)	
ipoe	The total number of IPoE sessions limit
ppoe-local	The total number of PPPoE local terminated sessions (PTA) limit
ppoe-lac	The total number of PPPoE L2TP LAC sessions limit
ppoe-overall	The total number of PPPoE sessions limit
l2tp-lns	The total number of L2TP LNS sessions limit

Field	Description
l2tp-lts	The total number of L2TP LTS sessions limit
l2tp-overall	The total number of L2TP sessions limit
overall	The total number of subscriber sessions limit
Managed Routes	
Status	The installation status
Metric	The metric value
Tag	The tag value
Pref	The preference value
Number of session	The number of sessions returned from the search criteria

## session

### Syntax

**session connection-id** *connection-id* [{**detail** | **ppp-statistics**}]

**session** [{**detail** | **ppp-statistics**}] [**session-id** *session-id*] [**state** *session-state*] [**peer** *ip-address*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *local-host-name*] [**remote-name** *remote-host-name*] [**tunnel-id** *tunnel-id*] [**service** *service-id*] [**interface** {*ip-int-name* | *ip-address*}] [**ip-prefix** *ip-prefix/mask*]

**session** [{**detail** | **ppp-statistics**}] [**state** *session-state*] [**peer** *ip-address*] [**group** *group-name*] [**assignment-id** *assignment-id*] [**local-name** *local-host-name*] [**remote-name** *remote-host-name*] [**control-connection-id** *connection-id*] [**service** *service-id*] [**interface** {*ip-int-name* | *ip-address*}]

### Context

[\[Tree\]](#) (show>router>l2tp session)

### Full Context

show router l2tp session

### Description

This command displays L2TP session operational information.

### Parameters

#### **connection-id**

Specifies the identification number for a Layer Two Tunneling Protocol connection.

**Values** 1 to 429496729

**detail**

Displays detailed L2TP session information.

**ppp-statistics**

Displays PPP statistics for the session.

**session-id**

Specifies the identification number for a Layer Two Tunneling Protocol session.

**Values** 1 to 65535

**session-state**

Specifies the values to identify the operational state of the L2TP session.

**Values** closed, closed-by-peer, established, idle, wait-reply, wait-tunnel

**ip-address**

Specifies the IP address of the peer.

**Values** The following values apply to the 7750 SR:

ipv4-address a.b.c.d (host bits must be 0)

ipv6-address x:x:x:x:x:x:x[-interface]

x:x:x:x:x:d.d.d.d[-interface]

x: [0 to FFFF]H

d: [0 to 255]D

interface: 32 characters maximum, mandatory for link local addresses

**Values** The following values apply to the 7450 ESS:

ipv4-address: a.b.c.d (host bits must be 0)

**group-name**

Specifies a string to identify a Layer Two Tunneling Protocol Tunnel group.

**assignment-id**

Specifies a string that distinguishes this Layer Two Tunneling Protocol tunnel.

**local-host-name**

Specifies the host name used by this system during the authentication phase of tunnel establishment.

**remote-host-name**

Specifies a string that is compared to the host name used by the tunnel peer during the authentication phase of tunnel establishment.

**tunnel-id**

Specifies the local identifier of this Layer Two Tunneling Protocol tunnel, when L2TP version 2 is used.

**Values** 1 to 65535

**service-id**

Specifies the service identification number.

**ip-int-name**

Specifies the IP interface name.

**ip-address**

Specifies the IPv4 or IPv6 addresses.

**ip-prefix/mask**

Specifies information for the specified IP prefix and mask length.

**connection-id**

Specifies an identification number for a Layer Two Tunneling Protocol session.

**Values** 1 to 429496729

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of L2TP session operational information.

**Output Example**

```
*A:Dut-C# show router l2tp session
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
143524786         143523840         2190        946          established
143526923         143523840         2190        3083         established
143531662         143523840         2190        7822         closed
236926987         236912640         3615        14347        closed
236927915         236912640         3615        15275        closed
379407426         379387904         5789        19522        established
658187773         658178048         10043       9725         established
658198275         658178048         10043       20227        established
658210606         658178048         10043       32558        established
-----
No. of sessions: 9
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session state established
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
143524786         143523840         2190        946          established
143526923         143523840         2190        3083         established
379407426         379387904         5789        19522        established
658187773         658178048         10043       9725         established
```

```
658198275      658178048      10043      20227      established
658210606      658178048      10043      32558      established
-----
No. of sessions: 6
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session state closed detail
=====
L2TP Session Status
=====
Connection ID : 143531662
State        : closed
Tunnel Group : ispl.group-2
Assignment ID : ispl.tunnel-3
Error Message : Terminated by PPPoE: RX PADT

Control Conn ID : 143523840      Remote Conn ID : 1148557524
Tunnel ID       : 2190         Remote Tunnel ID : 17525
Session ID      : 7822         Remote Session ID : 39124
Time Started    : 04/17/2009 18:44:37
Time Established : 04/17/2009 18:44:37 Time Closed      : 04/17/2009 18:44:50
CDN Result      : generalError  General Error    : noError
-----
L2TP Session Status
=====
Connection ID : 236926987
State        : closed
Tunnel Group : ispl.group-2
Assignment ID : ispl.tunnel-2
Error Message : tunnel was closed

Control Conn ID : 236912640      Remote Conn ID : 3861360381
Tunnel ID       : 3615         Remote Tunnel ID : 58919
Session ID      : 14347        Remote Session ID : 44797
Time Started    : 04/17/2009 18:41:55
Time Established : 04/17/2009 18:41:55 Time Closed      : 04/17/2009 18:43:20
CDN Result      : generalError  General Error    : noError
-----
L2TP Session Status
=====
Connection ID : 236927915
State        : closed
Tunnel Group : ispl.group-2
Assignment ID : ispl.tunnel-2
Error Message : tunnel was closed

Control Conn ID : 236912640      Remote Conn ID : 3861317210
Tunnel ID       : 3615         Remote Tunnel ID : 58919
Session ID      : 15275        Remote Session ID : 1626
Time Started    : 04/17/2009 18:41:03
Time Established : 04/17/2009 18:41:03 Time Closed      : 04/17/2009 18:43:20
CDN Result      : generalError  General Error    : noError
-----
No. of sessions: 3
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session session-id 946
=====
```



```

L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
143524786         143523840        2190       946          established
-----
No. of sessions: 1
=====
*A:Dut-C# show router l2tp session connection-id 143524786 detail
=====
L2TP Session Status
=====
Connection ID : 143524786
State         : established
Tunnel Group  : ispl.group-2
Assignment ID : ispl.tunnel-3
Error Message : N/A

Control Conn ID : 143523840      Remote Conn ID : 1148528691
Tunnel ID       : 2190          Remote Tunnel ID : 17525
Session ID      : 946           Remote Session ID : 10291
Time Started    : 04/17/2009 18:42:01
Time Established : 04/17/2009 18:42:01 Time Closed      : N/A
CDN Result      : noError       General Error    : noError
-----
*A:Dut-C#

*A:Dut-C# show router l2tp session group ispl.group-2
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
143524786         143523840        2190       946          established
143526923         143523840        2190       3083         established
143531662         143523840        2190       7822         closed
236926987         236912640        3615      14347        closed
236927915         236912640        3615      15275        closed
658187773         658178048        10043     9725         established
658198275         658178048        10043     20227        established
658210606         658178048        10043     32558        established
-----
No. of sessions: 8
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session tunnel-id 2190 state closed detail
=====
L2TP Session Status
=====
Connection ID : 143531662
State         : closed
Tunnel Group  : ispl.group-2
Assignment ID : ispl.tunnel-3
Error Message : Terminated by PPPoE: RX PADT

Control Conn ID : 143523840      Remote Conn ID : 1148557524
Tunnel ID       : 2190          Remote Tunnel ID : 17525
Session ID      : 7822           Remote Session ID : 39124
Time Started    : 04/17/2009 18:44:37
Time Established : 04/17/2009 18:44:37 Time Closed      : 04/17/2009 18:44:50
CDN Result      : generalError   General Error    : noError
    
```

```

-----
No. of sessions: 1
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session assignment-id ispl.tunnel-2
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
236926987         236912640         3615        14347        closed
236927915         236912640         3615        15275        closed
658187773         658178048         10043       9725         established
658198275         658178048         10043       20227        established
658210606         658178048         10043       32558        established
-----
No. of sessions: 5
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session assignment-id ispl.tunnel-2 state established
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
658187773         658178048         10043       9725         established
658198275         658178048         10043       20227        established
658210606         658178048         10043       32558        established
-----
No. of sessions: 3
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session control-connection-id 658178048
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
658187773         658178048         10043       9725         established
658198275         658178048         10043       20227        established
658210606         658178048         10043       32558        established
-----
No. of sessions: 3
=====
*A:Dut-C#

*A:Dut-C# show router l2tp session peer 10.10.20.100
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
236926987         236912640         3615        14347        closed
236927915         236912640         3615        15275        closed
658187773         658178048         10043       9725         established
658198275         658178048         10043       20227        established
658210606         658178048         10043       32558        established
    
```

```
-----  
No. of sessions: 5  
=====
```

\*A:Dut-C#

```
=====
```

\*A:Dut-C# show router l2tp session peer 10.10.20.100 state closed detail

```
=====
```

L2TP Session Status

```
=====
```

Connection ID : 236926987  
State : closed  
Tunnel Group : ispl.group-2  
Assignment ID : ispl.tunnel-2  
Error Message : tunnel was closed

Control Conn ID : 236912640 Remote Conn ID : 3861360381  
Tunnel ID : 3615 Remote Tunnel ID : 58919  
Session ID : 14347 Remote Session ID : 44797  
Time Started : 04/17/2009 18:41:55  
Time Established : 04/17/2009 18:41:55 Time Closed : 04/17/2009 18:43:20  
CDN Result : generalError General Error : noError

```
-----
```

L2TP Session Status

```
=====
```

Connection ID : 236927915  
State : closed  
Tunnel Group : ispl.group-2  
Assignment ID : ispl.tunnel-2  
Error Message : tunnel was closed

Control Conn ID : 236912640 Remote Conn ID : 3861317210  
Tunnel ID : 3615 Remote Tunnel ID : 58919  
Session ID : 15275 Remote Session ID : 1626  
Time Started : 04/17/2009 18:41:03  
Time Established : 04/17/2009 18:41:03 Time Closed : 04/17/2009 18:43:20  
CDN Result : generalError General Error : noError

```
-----
```

No. of sessions: 2

```
=====
```

\*A:Dut-C#

```
=====
```

\*A:Dut-C# show router l2tp session local-name lacl.wholesaler.com

```
=====
```

L2TP Session Summary

```
=====
```

ID	Control Conn ID	Tunnel-ID	Session-ID	State
143524786	143523840	2190	946	established
143526923	143523840	2190	3083	established
143531662	143523840	2190	7822	closed
236926987	236912640	3615	14347	closed
236927915	236912640	3615	15275	closed
379407426	379387904	5789	19522	established
658187773	658178048	10043	9725	established
658198275	658178048	10043	20227	established
658210606	658178048	10043	32558	established

```
-----
```

No. of sessions: 9

```
=====
```

\*A:Dut-C#

```
*A:Dut-C# show router l2tp session local-name lac1.wholesaler.com remote-
name lns.retailer1.net
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
379407426         379387904        5789       19522        established
-----
No. of sessions: 1
=====
*A:Dut-C#

*A:Fden-Dut2-BSA2# show router l2tp session connection-id 600407016
=====
L2TP Session Summary
=====
ID                Control Conn ID   Tunnel-ID   Session-ID   State
-----
600407016         600375296        9161       31720        established
simon@base.lac.base.lns
interface: gi_base_lns_base_lac
service-id: 100
ip-address: 10.100.2.1
=====

*A:Fden-Dut2-BSA2# show router l2tp session connection-id 600407016 detail
=====
L2TP Session Status
=====

Connection ID: 600407016
State          : established
Tunnel Group  : base_lns_base_lac
Assignment ID : t1
Error Message : N/A

Control Conn ID : 600375296      Remote Conn ID  : 1026712216
Tunnel ID       : 9161        Remote Tunnel ID : 15666
Session ID      : 31720       Remote Session ID : 25240
Time Started    : 02/02/2010 09:08:54
Time Established : 02/02/2010 09:08:54 Time Closed      : N/A
CDN Result      : noError      General Error    : noError
-----

PPP information

Service Id      : 100
Interface       : gi_base_lns_base_lac
LCP State       : opened
IPCP State      : opened
IPv6CP State    : initial
PPP MTU         : 1492
PPP Auth-Protocol : chap
PPP User-Name   : simon@base.lac.base.lns

Subscriber Origin : radius
Strings Origin    : radius
IPCP Info Origin  : radius
IPv6CP Info Origin : none
```

```
Subscriber          : "simon"  
Sub-Profile-String  : "sub1"  
SLA-Profile-String  : "sla1"  
ANCP-String        : ""  
Int-Dest-Id        : ""  
App-Profile-String : ""  
Category-Map-Name  : ""  
  
IP Address         : 10.100.2.1  
Primary DNS        : N/A  
Secondary DNS      : N/A  
Primary NBNS       : N/A  
Secondary NBNS     : N/A  
Address-Pool       : N/A  
  
IPv6 Prefix        : N/A  
IPv6 Del.Pfx.     : N/A  
Primary IPv6 DNS   : N/A  
Secondary IPv6 DNS : N/A  
  
Circuit-Id        : (Not Specified)  
Remote-Id         : (Not Specified)  
  
Session-Timeout    : N/A  
Radius Class       : (Not Specified)  
Radius User-Name   : simon@base.lac.base.lns
```

## session

### Syntax

```
session [interface ip-int-name | ip-address | sap sap-id] [session-id session-id] [mac ieee-address] [ip-address ip-address[/ mask]] [port port-id] [no-inter-dest-id | inter-dest-id intermediate-destination-id] [steering-profile steering-profile] [router-advertisement-policy policy-name] [detail | statistics]  
session l2tp-connection-id connection-id [detail | statistics]
```

### Context

[\[Tree\]](#) (show>service>id>pppoe session)

### Full Context

```
show service id pppoe session
```

### Description

This command displays PPPoE session information.

### Parameters

#### ***ip-int-name***

Specifies the IP interface name.

#### ***ip-address***

Specifies the IP address of the PPPoE session.

***sap-id***

Specifies the SAP ID.

***session-id***

Specifies the ID of the PPPoE session.

***ieee-address***

Specifies the MAC address of the PPPoE session.

***port-id***

Specifies the port ID.

***no-inter-dest-id***

Displays the information of PPPoE sessions that do not have an intermediate destination ID associated.

***intermediate-destination-id***

Specifies the intermediate destination ID.

***steering-profile***

Specifies the name of the steering profile, up to a maximum of 32 characters.

***policy-name***

Specifies the name of the router advertisement policy, up to a maximum of 32 characters.

***detail***

Displays detailed information.

***statistics***

Displays statistics about the PPPoE session.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following outputs are examples of PPPoE session information and [Table 477: Service PPPoE Session Field Descriptions](#) describes the output fields.



**Note:** The output will vary in function of the operational data of the PPPoE session and therefore not all fields appear in the output example.

**Output Example**

```
show service id 20 pppoe session
```

```
=====  
PPPoE sessions for svc-id 20  
=====
```

Sap Id	Mac Address	Sid	Up Time	IP Address
1/1/3:200	00:00:00:00:00:03	1	1d 00:48:39	10.0.0.101
1/1/3:300	00:00:00:00:00:05	1	0d 00:01:08	10.0.0.119

```
-----  
Number of sessions : 2
```

```
show service id 1000 pppoe session detail
```

```
PPPoE sessions for svc-id 1000
```

```
=====
Sap Id           Mac Address      Sid   Up Time          Type
  IP/L2TP-Id/Interface-Id                               MC-Stdbby
-----
[1/x1/1/c1/4:2211.* 00:bb:02:00:01:01 1    0d 00:01:55     local
  10.2.1.201
  02:BB:02:FF:FE:00:01:01

LCP State        : Opened
IPCP State       : Opened
IPv6CP State     : Opened
PPP MTU          : 1492
PPP Auth-Protocol : CHAP
PPP User-Name    : user-1@bng-2.com

Subscriber-interface : sub-int-1
Group-interface     : group-int-1-1

IP Origin         : local-user-db
DNS Origin        : none
NBNS Origin       : none

Subscriber        : user-1@bng-2.com
Sub-Profile-String : "sub-profile-1"
SLA-Profile-String : "sla-profile-1"
SPI group ID      : (Not Specified)
ANCP-String       : ""
Int-Dest-Id       : ""
App-Profile-String : ""
Category-Map-Name : ""
Acct-Session-Id   : "0613FF0000000163FF4F0A"
Sap-Session-Index : 1

IP Address        : 10.2.1.201/24
Primary DNS       : N/A
Secondary DNS     : N/A
Primary NBNS     : N/A
Secondary NBNS   : N/A
Address-Pool      : N/A

IPv6 Prefix       : N/A
IPv6 Prefix Origin : none
IPv6 Prefix Pool  : ""
IPv6 Del.Pfx.     : 2001:db8:b201:a100::/56
IPv6 Del.Pfx. Origin : local-user-db
IPv6 Del.Pfx. Pool : ""
IPv6 Address      : 2001:db8:b002:1a1::1
IPv6 Address Origin : local-user-db
IPv6 Address Pool : ""
Primary IPv6 DNS  : N/A
Secondary IPv6 DNS : N/A
Router adv. policy : N/A

Ignoring DF bit    : false
Radius sub-if prefix : N/A
```

```

Circuit-Id      :
Remote-Id      :

Radius Session-T0 : N/A
Radius Class 1  : This is a Class attribute
Radius User-Name : user-1@bng-2.com
Logical-Line-Id :
Service-Name    : HSI

-----
Managed Routes
-----
IP Address                Status      Metric Tag      Pref
-----
2001:db8:b201:a100::/56  installed  0      none      0
-----

Keepalive Origin   : Radius
Keepalive Interval : 15
Keepalive Multiplier : 2
-----
Number of sessions : 1
=====
* indicates that the corresponding row element may have been truncated.
    
```

```
show service id 20 pppoe session ip-address 20.0.0.101 detail
```

```

=====
PPPoE sessions for svc-id 20
=====
Sap Id           Mac Address      Sid Up Time      IP Address
-----
1/1/3:200       00:00:00:00:00:03 1 1d 00:49:46    10.0.0.101

LCP State        : Opened
IPCP State       : Opened
PPP MTU          : 1492
PPP Auth-Protocol : PAP
PPP User-Name    : user4@domain1

Subscriber-interface : sub_pppoe
Group-interface     : grp_pppoe2

Subscriber Origin  : RADIUS
Strings Origin     : RADIUS
IPCP Info Origin   : DHCP

Subscriber        : "radius_papchap4"
Sub-Profile-String : "sub1"
SLA-Profile-String : "sla1"
ANCP-String       : ""
Int-Dest-Id       : ""
App-Profile-String : ""

Primary DNS       : N/A
Secondary DNS     : N/A
Primary NBNS      : N/A
Secondary NBNS    : N/A

Circuit-Id       : 2
Remote-Id        :
    
```



```

Session-Timeout      : N/A
-----
Number of sessions  : 1
=====
    
```

```
show service id 20 pppoe session ip-address 20.0.0.101 statistics
```

```

=====
PPPoE sessions for svc-id 20
=====
Sap Id                Mac Address          Sid Up Time          IP Address
-----
1/1/3:200            00:00:00:00:00:03 1 1d 00:50:39        10.0.0.101

Packet Type           Received             Transmitted
-----
LCP Configure-Request 1                     2
LCP Configure-Ack     1                     1
LCP Configure-Nak     1                     0
LCP Configure-Reject 0                     0
LCP Terminate-Request 0                     0
LCP Terminate-Ack    0                     0
LCP Code-Reject       0                     0
LCP Echo-Request      8927                  866
LCP Echo-Reply        866                  8927
LCP Protocol-Reject   0                     0
LCP Discard-Request   0                     0
-----
PAP Authenticate-Request 1 -
PAP Authenticate-Ack    - 1
PAP Authenticate-Nak    - 0
-----
CHAP Challenge         - 0
CHAP Response          0 -
CHAP Success           - 0
CHAP Failure           - 0
-----
IPCP Configure-Request 2 1
IPCP Configure-Ack     1 1
IPCP Configure-Nak     0 1
IPCP Configure-Reject 0 0
IPCP Terminate-Request 0 0
IPCP Terminate-Ack    0 0
IPCP Code-Reject       0 0
-----
Unknown Protocol       0 -
-----
Number of sessions  : 1
=====
    
```

```
*A:Dut-A#show service id 10 pppoe session router-advertisement-policy "ra-policy-01"
```

```

=====
PPPoE sessions for svc-id 1000
=====
Sap Id                Mac Address          Sid Up Time          Type
IP/L2TP-Id/Interface-Id MC-Stdby
-----
1/1/20:841            00:00:64:19:01:02 1 0d 00:00:18        local
192.168.0.10
02:00:64:FF:FE:19:01:02
-----
    
```

```
Number of sessions : 1
=====
```

Table 477: Service PPPoE Session Field Descriptions

Field	Description
Sap Id	The SAP ID
Mac Address	The MAC address
Sid	The SID number
Up Time	The time of the last modification
Type	The PPPoE type
IP/L2TP-Id/If-Id	The IP/L2TP or IF ID
MC-Standby	The MC standby
Session Time Left	The time remaining for the session timeout
LCP State	The LCP open/closed state
IPCP State	The IP CP open/closed state
IPv6CP State	The IPv6 CP open/closed state
PPP MTU	The PPP MTU value
PPP Auth-Protocol	The PPP authentication protocol
PPP User-Name	The PPP user name
Subscriber-interface	The subscriber interface name
Group-interface	The group interface name
IP Origin	The IP origin
DNS Origin	The DNS origin
NBNS Origin	The NBNS origin
Subscriber	The subscriber identification string
Sub-Profile-String	The subscriber profile name
SLA-Profile-String	The SLA profile name
SPI group ID	The SPI group ID
ANCP-String	The value of the ancp-string received from either the DHCP or the RADIUS server

Field	Description
Int-Dest-Id	Intermediate destination identifier received from the RADIUS server
App-Profile-String	The application profile string
Category-Map-Name	The value of the category map name received from the RADIUS server
Acct-Session-Id	The accounting session ID
Sap-Session-Index	The sap session index of the PPP session
IP Address	The IP address
Primary DNS	The primary DNS server
Secondary DNS	The secondary DNS server
Primary NBNS	The primary NBNS server
Secondary NBNS	The secondary NBNS server
Address-Pool	The IP address pool used to search for an IP address for this session
IPv6 Prefix	The IPv6 prefix
IPv6 Prefix Origin	The origin of the IPv6 prefix
IPv6 Prefix Pool	The DHCP server pool from which the IPv6 prefix is allocated
IPv6 Del.Pfx.	The IPv6 delegated prefix
IPv6 Del.Pfx. Origin	The origin of the IPv6 delegated prefix
IPv6 Del.Pfx. Pool	The DHCP server pool from which the delegated prefix is allocated
IPv6 Address	The IPv6 address
IPv6 Address Origin	The origin of the IPv6 address
IPv6 Address Pool	The DHCP server pool from which the address is allocated
Primary IPv6 DNS	The primary IPv6 DNS server
Secondary IPv6 DNS	The secondary IPv6 DNS server
Router adv. policy	The router advertisement policy
Ignoring DF bit	The true/false status of ignoring DF bit
Radius sub-if prefix	The RADIUS subscriber interface prefix

Field	Description
Circuit-Id	The circuit ID of the PPP session
Remote-Id	The remote ID of the PPP session
Radius Session-TO	The value to interpret the session timeout VSA from RADIUS
Radius Class 1	The Class attribute returned by the RADIUS server in an Access-Accept message
Radius User-Name	The User-Name attribute returned by the RADIUS server in an Access-Accept message
Logical-Line-Id	The logical line ID
Keepalive Origin	LCP Keepalive Interval and Multiplier parameters are by default obtained from the ppp-policy configuration and can be overridden with parameters obtained from RADIUS, Diameter Gx or local user database. This field indicates the origin of the LCP Keepalive parameters for this session:  Policy = values configured in the subscriber-mgmt ppp-policy for PPPoE PTA sessions or l2tp group context for L2TP LNS sessions.  Ludb = values from the local user database Radius = values from RADIUS authentication Diameter Gx = values from Diameter Gx
Keepalive Interval	The time interval in seconds at which LCP echo requests are transmitted for the PPP session
Keepalive Multiplier	The number of LCP keepalive messages that can be missed before the PPP session is brought down
Subscriber Host Limit Overrides and SLA Profile Instance Host Limit Overrides: (only shown when overrides are active)	
ipv4-arp	The total number of IPv4 ARP hosts limit
ipv4-dhcp	The total number of IPv4 DHCP hosts limit
ipv4-ppp	The total number of IPv4 PPP hosts limit
ipv4-overall	The total number of IPv4 hosts limit
ipv6-pd-ipoe-dhcp	The total number of IPv6 IPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-ppp-dhcp	The total number of IPv6 PPPoE DHCP Prefix Delegation hosts (IA-PD) limit

Field	Description
ipv6-pd-overall	The total number of IPv6 DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-wan-ipoe-dhcp	The total number of IPv6 IpoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ipoe-slaac	The total number of IPv6 IpoE SLAAC WAN hosts limit
ipv6-wan-ppp-dhcp	The total number of IPv6 PPPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ppp-slaac	The total number of IPv6 IpoE SLAAC WAN hosts limit
ipv6-wan-overall	The total number of IPv6 WAN hosts limit
ipv6-overall	The total number of IPv6 hosts limit
lac-overall	The total number of L2TP LAC hosts limit
overall	The total number of subscriber hosts limit
Subscriber Session Limit Overrides and SLA Profile Instance Session Limit Overrides: (only shown when overrides are active)	
ipoe	The total number of IpoE sessions limit
ppoe-local	The total number of PPPoE local terminated sessions (PTA) limit
ppoe-lac	The total number of PPPoE L2TP LAC sessions limit
ppoe-overall	The total number of PPPoE sessions limit
l2tp-lns	The total number of L2TP LNS sessions limit
l2tp-lts	The total number of L2TP LTS sessions limit
l2tp-overall	The total number of L2TP sessions limit
overall	The total number of subscriber sessions limit
Managed Routes	
Status	The installation status
Metric	The metric value
Tag	The tag value
Pref	The preference value
Number of session	The number of sessions returned from the search criteria

## session

### Syntax

**session connection-id** *connection-id* **eth-tunnel-statistics**

### Context

[\[Tree\]](#) (clear>router>l2tp session)

### Full Context

clear router l2tp session

### Description

This command clears L2TP session data.

### Parameters

#### **connection-id**

Specifies the L2TPv3 connection ID.

#### **eth-tunnel-statistics**

Clears the Ethernet tunnel statistics associated with the specified session.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## session

### Syntax

**session stop** *connection-id*

### Context

[\[Tree\]](#) (tools>perform>router>l2tp session)

### Full Context

tools perform router l2tp session

### Description

This command configures performance tools for a specified L2TP session.

### Parameters

#### **stop**

Stops the performance tools for a specified L2TP session.

### ***connection-id***

Specifies the L2TPv3 connection ID.

**Values** 1 to 4294967295

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## **session**

### **Syntax**

**session** [**sap** *sap-id*] [**mac** *ieee-address*] [**circuit-id** *circuit-id*] [**remote-id** *remote-id*] [**interface** *ip-int-name* | *ip-address*] [**inter-dest-id** *intermediate-destination-id*] [**no-inter-dest-id**] [**ip-address** *ip-prefix*[/*prefix-length*]] [**port** *port-id*] [**subscriber** *sub-ident-string*] [**sap-session-id** *sap-session-index*] [**detail**] [**wholesaler** *service-id*] [**router-advertisement-policy** *policy-name*]

### **Context**

[\[Tree\]](#) (show>service>id>ipoe session)

### **Full Context**

show service id ipoe session

### **Description**

This command displays the identified IPoE session details active on the specified service instance.

### **Parameters**

#### ***sap-id***

Specifies the physical port identifier portion of the SAP definition.

#### ***ieee-address***

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

#### ***circuit-id***

Specifies the circuit ID, up to 127 characters.

#### ***remote-id***

Specifies that information that goes into the remote-id sub-option in the DHCP relay packet, up to 255 characters.

#### ***ip-int-name***

Specifies the name of the IP interface, up to 32 characters.

#### ***ip-address*[/*prefix-length*]**

Specifies information for the specified IP address and mask.

**no-inter-dest-id**

Displays the information about no intermediate destination ID.

**port-id**

Displays information about the specified port ID.

**sap-session-index**

Displays sap-session-index information.

**service-id**

Specifies the service ID of the wholesaler.

<b>Values</b>	<i>service-id:</i>	1 to 2147483647
---------------	--------------------	-----------------

**intermediate-destination-id**

Specifies the intermediate destination identifier which is encoded in the identification strings up to 32 characters.

**sub-ident-string**

Specifies an existing subscriber identification profile.

**detail**

Displays all IPoE session details.

**policy-name**

Specifies the name of the router advertisement policy, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of service IPoE session information.

**Output Example**

```
# show service id 4000 ipoe session
=====
IPoE sessions for svc-id 4000
=====
Sap Id                Mac Address          Up Time          MC-Stdby
Subscriber-Id
[CircuitID] | [RemoteID]
-----
1/1/4:1201.27        00:51:00:00:00:0c   0d 00:00:18
  ipoe-session-001
-----
CID | RID displayed when included in session-key
Number of sessions : 1
=====

# show service id 4000 ipoe session detail
=====
IPoE sessions for service 4000
=====
SAP                   : 1/1/4:1201.27
```



```
Mac Address          : 00:51:00:00:00:0c
Circuit-Id          : circuit-id-1
Remote-Id           : remote-id-1
Session Key         : sap-mac

MC-Standby          : No

Subscriber-interface : sub-int-1
Group-interface     : group-int-1

Up Time             : 0d 00:01:01
Session Time Left   : N/A
Last Auth Time      : 02/28/2015 01:01:09
Min Auth Intvl (left) : 0d 00:05:00 (0d 00:03:59)
Persistence Key     : N/A

Subscriber          : "ipoe-session-001"
Sub-Profile-String : "sub-profile-1"
SLA-Profile-String : "sla-profile-1"
ANCP-String        : ""
Int-Dest-Id        : ""
App-Profile-String : ""
Category-Map-Name : ""
Acct-Session-Id    : "144DFF0000001354D806D5"
Sap-Session-Index  : 1

IP Address          : 10.10.1.201/24
IP Origin           : Radius
Primary DNS         : N/A
Secondary DNS       : N/A
Primary NBNS        : N/A
Secondary NBNS      : N/A
Address-Pool        : N/A

IPv6 Prefix         : 2001:db8:a:111::/64
IPv6 Prefix Origin  : Radius
IPv6 Prefix Pool    : ""
IPv6 Del.Pfx.       : 2001:db8:a001:a100::/56
IPv6 Del.Pfx. Origin : Radius
IPv6 Del.Pfx. Pool  : ""
IPv6 Address        : 2001:db8:a:101::aaa:1
IPv6 Address Origin : Radius
IPv6 Address Pool   : ""
Primary IPv6 DNS    : N/A
Secondary IPv6 DNS  : N/A

Radius Session-T0   : N/A
Radius Class        :
Radius User-Name    : 00:51:00:00:00:0c

Subscriber Host Limit Overrides
  ipv4-arp          : 1
  ipv4-dhcp         : 1
  ipv4-ppp          : 1
  ipv4-overall      : 1
  ipv6-pd-ipoe-dhcp : 1
  ipv6-pd-ppp-dhcp : 1
  ipv6-pd-overall   : 1
  ipv6-wan-ipoe-dhcp : 1
  ipv6-wan-ipoe-slaac : 1
  ipv6-wan-ppp-dhcp : 1
  ipv6-wan-ppp-slaac : 1
  ipv6-wan-overall  : 1
  ipv6-overall      : 1
```

```

lac-overall      : 1
overall         : 1
SLA Profile Instance Host Limit Overrides
ipv4-arp        : 1
ipv4-dhcp       : 1
ipv4-ppp        : 1
ipv4-overall    : 1
ipv6-pd-ipoe-dhcp : 1
ipv6-pd-ppp-dhcp : 1
ipv6-pd-overall : 1
ipv6-wan-ipoe-dhcp : 1
ipv6-wan-ipoe-slaac : 1
ipv6-wan-ppp-dhcp : 1
ipv6-wan-ppp-slaac : 1
ipv6-wan-overall : 1
ipv6-overall    : 1
lac-overall     : 1
overall         : 1
Subscriber Session Limit Overrides
ipoe           : 1
pppoe-local    : 1
pppoe-lac      : 1
pppoe-overall  : 1
l2tp-lns       : 1
l2tp-lts       : 1
l2tp-overall   : 1
overall        : 1
SLA Profile Instance Session Limit Overrides
ipoe           : 1
pppoe-local    : 1
pppoe-lac      : 1
pppoe-overall  : 1
l2tp-lns       : 1
l2tp-lts       : 1
l2tp-overall   : 1
overall        : 1
-----
Number of sessions : 1
=====
    
```

```

*A:Dut-A# show service id 13 ipoe session router-advertisement-policy ra-policy-01
=====
IPoE sessions for svc-id 13
=====
Sap Id           Mac Address      Up Time          MC-Stdby
Subscriber-Id
[CircuitID] | [RemoteID]
-----
1/1/1:13         00:00:00:00:00:13  0d 00:13:06
  sub-1
1/1/1:13         00:00:00:00:00:14  0d 00:08:03
  sub-1
1/1/1:13         00:00:00:00:00:15  0d 00:06:23
  sub-1
-----
CID | RID displayed when included in session-key
Number of sessions : 3
=====
*A:Dut-A#
    
```

Table 478: Service IPoE Session Field Descriptions describes IPoE session field information.

Table 478: Service IPoE Session Field Descriptions

Field	Description
SAP Id	The SAP ID of the IPoE session
Mac Address	The MAC address of the IPoE session
Up Time	The time of the last modification
MC-Stdby	The number of SAPs defined on this service on a port which is in multi-chassis standby mode
SAP	The SAP ID of the IPoE session
Circuit-Id	The circuit ID of the IPoE session
Remote-Id	The remote ID of the IPoE session
Session Key	The session key used for this IPoE session to group subscriber hosts
MC-Standby	The number of SAPs defined on this service on a port which is in multi-chassis standby mode
Subscriber-interface	The subscriber interface name
Group-interface	The group interface name
Up Time	The time of the last modification
Session Time Left	The time remaining for the session timeout
Last Auth Time	The date and time of the last authentication
Min Auth Intvl (left)	The minimum interval between two consecutive authentication attempts for the same ARP host
Persistence Key	The key value that is used to track this in the persistence file
Subscriber	The subscriber identification string
Sub-Profile-String	The subscriber profile name
SLA-Profile-String	The SLA profile name
ANCP-String	The value of the ancp-string received from either the DHCP or the RADIUS server
Int-Dest-Id	Intermediate destination identifier received from the RADIUS server
App-Profile-String	The application profile string

Field	Description
Category-Map-Name	The value of the category map name received from the RADIUS server
Acct-Session-Id	The accounting session ID
Sap-Session-Index	The sap session index of the PPP session
IP Address	The IP address
IP Origin	The origin of the source IP address used for connectivity verification
Primary DNS	The primary DNS server
Secondary DNS	The secondary DNS server
Primary NBNS	The primary NBNS server
Secondary NBNS	The secondary NBNS server
Address-Pool	The IP address pool used to search for an IP address for this session
IPv6 Prefix	The IPv6 prefix
IPv6 Prefix Origin	The origin of the IPv6 prefix
IPv6 Prefix Pool	The DHCP server pool from which the SLAAC prefix is allocated
IPv6 Del.Pfx.	The IPv6 delegated prefix
IPv6 Del.Pfx. Origin	The origin of the IPv6 delegated prefix
IPv6 Del.Pfx. Pool	The DHCP server pool from which the delegated prefix is allocated
IPv6 Address	The IPv6 address
IPv6 Address Origin	The origin of the IPv6 address
IPv6 Address Pool	The DHCP server pool from which the address is allocated
Primary IPv6 DNS	The primary DNS server
Secondary IPv6 DNS	The secondary DNS server
Radius Session-TO	The value to interpret the session timeout VSA from RADIUS
Radius Class	The Class attribute returned by the RADIUS server in an Access-Accept message

Field	Description
Radius User-Name	The User-Name attribute returned by the RADIUS server in an Access-Accept message
Subscriber Host Limit Overrides and SLA Profile Instance Host Limit Overrides:	
ipv4-arp	The total number of IPv4 ARP hosts limit
ipv4-dhcp	The total number of IPv4 DHCP hosts limit
ipv4-ppp	The total number of IPv4 PPP hosts limit
ipv4-overall	The total number of IPv4 hosts limit
ipv6-pd-ipoe-dhcp	The total number of IPv6 IPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-ppp-dhcp	The total number of IPv6 PPPoE DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-pd-overall	The total number of IPv6 DHCP Prefix Delegation hosts (IA-PD) limit
ipv6-wan-ipoe-dhcp	The total number of IPv6 IPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ipoe-slaac	The total number of IPv6 IPoE SLAAC WAN hosts limit
ipv6-wan-ppp-dhcp	The total number of IPv6 PPPoE DHCP WAN hosts (IA-NA) limit
ipv6-wan-ppp-slaac	The total number of IPv6 PPPoE SLAAC WAN hosts limit
ipv6-wan-overall	The total number of IPv6 WAN hosts limit
ipv6-overall	The total number of IPv6 hosts limit
lac-overall	The total number of L2TP LAC hosts limit
overall	The total number of subscriber hosts limit
Subscriber Session Limit Overrides and SLA Profile Instance Session Limit Overrides:	
ipoe	The total number of IPoE sessions limit
ppoe-local	The total number of PPPoE local terminated sessions (PTA) limit
ppoe-lac	The total number of PPPoE L2TP LAC sessions limit
ppoe-overall	The total number of PPPoE sessions limit
l2tp-Ins	The total number of L2TP LNS sessions limit

Field	Description
l2tp-lts	The total number of L2TP LTS sessions limit
l2tp-overall	The total number of L2TP sessions limit
overall	The total number of subscriber sessions limit
Number of session	The number of sessions returned from the search criteria

## session

### Syntax

**session** [*name trace-name*] [*detail*]

**session sap** *sap-id* **mac** *ieee-address* [**circuit-id** *circuit-id*] [**remote-id** *remote-id*] [**username** *user-name*] [*detail*]

### Context

[\[Tree\]](#) (show>call-trace>ipoe session)

[\[Tree\]](#) (show>call-trace>ppp session)

### Full Context

show call-trace ipoe session

show call-trace ppp session

### Description

This command displays call trace information for the active session.

Configuring this command with specified session filters, displays information for the specified trace job only.

### Parameters

#### **detail**

Displays detailed information.

#### **sap-id**

Specifies the SAP ID that identifies a session.

#### **ieee-address**

Specifies a MAC address that identifies a session.

#### **circuit-id**

Specifies a circuit ID that identifies a session, up to 255 characters.

#### **remote-id**

Specifies a remote ID that identifies a session, up to 255 characters.

#### **trace-name**

Specifies the name of the trace, up to 32 characters, that triggered the job.

**user-name**

Specifies the user name, up to 32 characters, that identifies a PPPoE session.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of call trace information for the active IPoE session.

**Output Example**

```

Node # show call-trace ipoe session
=====
Call trace IPoE session
=====
IEEE address          Status          No. of messages
  Trace name
-----
00:02:00:00:00:19    running         10
  default
-----
No. of call trace IPoE debug jobs: 1
=====

Node# show call-trace ipoe session detail
=====
Call trace IPoE session
=====
SAP ID       : 4/1/ 2
IEEE address: 00:02:00:00:00:19
Trace name   : default                Status      : running
Size limit   : 10 MB                  Time limit  : 86400 sec
Live output
-----
Destination : none
Statistics
-----
Started      : 2017/01/11 15:34:08UTC
No. of captured msgs : 10
Size of captured msgs : 2575 B
=====
    
```

[Table 479: Call Trace IPoE Session Field Descriptions](#) describes call trace IPoE session output fields.

*Table 479: Call Trace IPoE Session Field Descriptions*

Field	Description
IEEE address	The IEEE address of the equipment to match by this trace
Status	The status of the trace session
No. of messages	The number of messages from the trace session
Trace name	The name of the trace profile

Field	Description
Size limit	The maximum data volume generated by a single call trace job to the output, in megabytes
Time limit	The maximum duration of a single call trace job, in seconds
Live output	The live output destination for trace logs
Destination	The destination address of the trace logs
Started	The date and time the trace began
No. of captured msgs	The number of captured messages
Size of captured msgs	The size of the captured messages

## session

### Syntax

**session sap** *sap-id* **mac** *ieee-address*

**session sap** *sap-id* **mac** *ieee-address* **circuit-id** *circuit-id* [**remote-id** *remote-id*] [**user-name** *user-name*]

**session sap** *sap-id* **mac** *ieee-address* [**circuit-id** *circuit-id*] **remote-id** *remote-id* [**user-name** *user-name*]

**session sap** *sap-id* **mac** *ieee-address* [**circuit-id** *circuit-id*] [**remote-id** *remote-id*] **user-name** *user-name*

### Context

**[Tree]** (clear>call-trace>ipoe session)

**[Tree]** (clear>call-trace>pppoe session)

### Full Context

clear call-trace ipoe session

clear call-trace pppoe session

### Description

This command clears the trace job identified by this session.

This command does not affect any of the debug trace commands, and new jobs can still be executed for other sessions.

After a session is cleared, tracing for the session will not be restarted by any configured trace. Only explicitly starting a new trace with the **trace-existing-sessions** parameter can restart tracing for the session.

### Parameters

***circuit-id***

Specifies a circuit ID, up to 255 characters, that identifies a session.



***ieee-address***

Specifies a MAC address that identifies a session.

***remote-id***

Specifies a remote ID, up to 255 characters, that identifies a session

***sap-id***

Specifies the SAP ID that identifies a session.

***user-name***

Specifies the user name, up to 32 characters, that identifies a session.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**session**

**Syntax**

**session** [**family**] [**summary** | **detail**] *ip-addr*[*label-space*]

**Context**

[\[Tree\]](#) (show>router>ldp>bindings session)

**Full Context**

show router ldp bindings session

**Description**

This command displays LDP FEC bindings by matching peer LSR ID.

**Parameters**

***detail***

Displays detailed information.

***summary***

Displays information in a summarized format.

***family***

Displays either IPv4 or IPv6 LDP session information.

***ip-addr***

displays configuration information about LDP sessions.

***label-space***

Specifies the label space identifier that the router is advertising on the interface.

**Values** 0 to 65535

## Platforms

All

## session

### Syntax

**session** [*ip-addr* [*label-space*]] **local-addresses** [**sent** | **rcv**] **ip-addr** *ip-address*

**session** [*ip-addr* [*label-space*]] [*session-type*] [**state** *state*] [**summary** | **detail**] [**community** *community*]

**session** [*ip-addr* [*label-space*]] **local-addresses** [**sent** | **rcv**] [*family*]

**session** [*ip-addr* [*label-space*]] [**sent** | **rcv**] **overload** [**fec-type** *fec-type*]

**session** [**sent** | **rcv**] **overload** [**fec-type** *fec-type*] [*family*] [**community** *community*]

**session** [*ip-addr* [*label-space*]] **statistics** [*packet-type*] [*session-type*]

**session statistics** [*packet-type*] [*session-type*] [*family*]

**session** [*session-type*] [**state** *state*] [**summary** | **detail**] [*family*] [**community** *community*]

### Context

[\[Tree\]](#) (show>router>ldp session)

### Full Context

show router ldp session

### Description

This command displays configuration information about LDP sessions.

### Parameters

#### *ip-addr*

Specifies the IP address of the LDP peer.

#### *label-space*

Specifies the label space identifier that the router is advertising on the interface.

**Values** 0 to 65535

#### *statistics*

Specifies the statistics for a targeted peer.

#### *packet-type*

Specifies the packet type.

**Values** hello, keepalive, init, label, notification, address, capability

#### *session-type*

Specifies to display the session type.

**Values** link, targeted, both

**state**

Specifies to display the current operational state of the adjacency.

**Values** up - Established down - Initialized, OpenRecv, OpenSent, Nonexistent

**summary**

Displays information in a summarized format.

**detail**

Displays detailed information including the community and if a local LSR ID is advertised.

**local-addresses**

Specifies the local address information.

**ip-address**

Specifies the IPv4 or IPv6 address.

**Values** <ip-address> : ipv4-address - a.b.c.d ipv6-address - x:x:x:x:x:x  
(eight 16-bit pieces) x:x:x:x:x:d.d.d x - [0 to FFFF]H d - [0 to 255]D

**overload**

Specifies the overload information.

**fec-type**

Specifies the specified FEC type.

**Values** ipv4-prefixes, ipv6-prefixes, ipv4-p2mp, ipv6-p2mp, svc-fec128, svc-fec129

**family**

Displays either IPv4 or IPv6 active LDP information.

**Values** ipv4, ipv6

**community**

The string defining the LDP community assigned to the session. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters excluding double quotes. If the string contains spaces, use double quotes to delimit the start and end of the string.

**Platforms**

All

**Output**

[Table 480: LDP Session Output Fields](#) describes the LDP session output fields.

*Table 480: LDP Session Output Fields*

Label	Description
Peer LDP Id	The IP address of the LDP peer.

Label	Description
Adj Type	The adjacency type between the LDP peer and LDP session is targeted.
	Link — Specifies that this adjacency is a result of a link hello.
	Targeted — Specifies that this adjacency is a result of a targeted hello.
State	Established — Specifies that the adjacency is established.
	Trying — Specifies that the adjacency is not yet established.
Msg Sent Mesg Sent	The number of messages sent.
Msg Rcvd Mesg Rcvd	The number of messages received.
Up Time	The amount of time the adjacency has been enabled.
Session Community	Specifies the LDP community associated with a session.
Local LSR ID Advertised	Specifies if a local LSR ID is advertised.

### Output Example

```
*A:Dut-A# show router ldp session
=====
LDP IPv4 Sessions
=====
Peer LDP Id      Adj Type  State      Msg Sent  Msg Recv  Up Time
-----
10.20.1.2:0     Link     Established 1724      1725      0d 01:16:29
10.20.1.3:0     Link     Established 1721      1723      0d 01:16:24
10.20.1.6:0     Targeted Established 1237      1238      0d 00:54:53
-----
No. of IPv4 Sessions: 3
=====

LDP IPv6 Sessions
=====
Peer LDP Id      Adj Type  State      Msg Sent  Msg Recv  Up Time
-----
3ffe::a14:102[0] Link     Established 1718      1721      0d 01:16:10
3ffe::a14:103[0] Link     Established 1718      1717      0d 01:16:10
3ffe::a14:106[0] Targeted Established 598       598       0d 00:53:07
-----
No. of IPv6 Sessions: 3
=====
*A:Dut-A#
*A:Dut-A# show router ldp session ipv6
=====
LDP IPv6 Sessions
=====
```

```

Peer LDP Id
Adj Type      State      Msg Sent   Msg Recv   Up Time
-----
10.10.2.3:0
  Targeted    Established  29         31         0d 00:00:57
3ffe::a14:102[0]
  Link        Established  37646      37642      1d 03:55:39
3ffe::a14:103[0]
  Link        Established  37653      37675      1d 03:55:36
-----
No. of IPv6 Sessions: 3
=====

*A:Dut-A# show router ldp session 10.20.1.2
=====
LDP IPv4 Sessions
=====
Peer LDP Id      Adj Type  State      Msg Sent   Msg Recv   Up Time
-----
10.20.1.2:0      Link      Established  1728       1729       0d 01:16:42
-----
No. of IPv4 Sessions: 1
=====

*A:Dut-A# show router ldp session 10.10.2.3 detail
=====
LDP IPv4 Sessions (Detail)
=====
Legend: DoD - Downstream on Demand (for address FEC's only)
        DU  - Downstream Unsolicited
        R   - Capability value received from peer
=====

Session with Peer 10.20.1.1:0, Local 10.20.1.4:0
-----
Adjacency Type      : Targeted      State           : Established
Up Time             : 3d 21:54:43
Max PDU Length      : 4096          KA/Hold Time Remaining : 121
Link Adjacencies    : 0            Targeted Adjacencies  : 1
Local Address       : 10.20.1.4    Peer Address       : 10.20.1.1
Local UDP Port      : 646          Peer UDP Port      : 646
Local TCP Port      : 55190        Peer TCP Port      : 646
Local KA Timeout    : 140          Peer KA Timeout    : 140
Mesg Sent           : 219023       Mesg Recv          : 127264
IPv4 Pfx FEC Sent   : 2092         IPv4 Pfx FEC Recv  : 1655
IPv6 Pfx FEC Sent   : 0            IPv6 Pfx FEC Recv  : 0
IPv4 P2MP FEC Sent  : 0            IPv4 P2MP FEC Recv : 0
IPv6 P2MP FEC Sent  : 0            IPv6 P2MP FEC Recv : 0
Svc Fec128 Sent     : 0            Svc Fec128 Recv   : 0
Svc Fec129 Sent     : 0            Svc Fec129 Recv   : 0
IPv4 Addrs Sent     : 1013         IPv4 Addrs Recv    : 2996
IPv6 Addrs Sent     : 119          IPv6 Addrs Recv    : 833
Local GR State      : Capable       Peer GR State      : Capable
Local Nbr Liveness Time: 5           Peer Nbr Liveness Time: 0
Local Recovery Time : 30           Peer Recovery Time : 0
Number of Restart   : 0            Last Restart Time  : Never
Label Distribution  : DU
Oper Fec Limit Thresho*: 0
Local-LSR ID advertise : Enabled
Community           : RED
Capabilities
Local P2MP          : Capable       Peer P2MP          : Capable
Local MP MBB        : Capable       Peer MP MBB        : Capable
Local Dynamic       : Capable       Peer Dynamic       : Capable
Local LSR Overload  : Not Capable  Peer LSR Overload  : Capable
  
```

```

Local IPv4 Pfx      : Capable      Peer IPv4 Pfx      : Capable (R)
Local IPv6 Pfx      : Not Capable  Peer IPv6 Pfx      : Not Capable (*)
Local SvcFec128     : Capable      Peer SvcFec128     : Capable (R)
Local SvcFec129     : Capable      Peer SvcFec129     : Capable (R)
Local UnregNoti     : Capable      Peer UnregNoti     : Capable
Advertise           : Address/Servi*
IPv4 PfxFec0Load Sent : No          IPv4 PfxFec0Load Recv : No
IPv6 PfxFec0Load Sent : No          IPv6 PfxFec0Load Recv : No
IPv4 P2MPFec0Load Sent : No          IPv4 P2MPFec0Load Recv : No
IPv6 P2MPFec0Load Sent : No          IPv6 P2MPFec0Load Recv : No
Svc Fec128 0Load Sent : No          Svc Fec128 0Load Recv : No
Svc Fec129 0Load Sent : No          Svc Fec129 0Load Recv : No
IPv4 PfxFec EOL Sent : Yes         IPv4 PfxFec EOL Recv  : Yes
IPv6 PfxFec EOL Sent : No          IPv6 PfxFec EOL Recv  : No
IPv4 P2MPFec EOL Sent : No          IPv4 P2MPFec EOL Recv : No
IPv6 P2MPFec EOL Sent : No          IPv6 P2MPFec EOL Recv : No
Svc Fec128 EOL Sent  : Yes         Svc Fec128 EOL Recv   : Yes
Svc Fec129 EOL Sent  : Yes         Svc Fec129 EOL Recv   : Yes
    
```

=====  
 \* indicates that the corresponding row element may have been truncated.  
 =====

LDP IPv6 Sessions (Detail)

=====  
 Legend: DoD - Downstream on Demand (for address FEC's only)  
           DU - Downstream Unsolicited  
           R - Capability value received from peer  
 =====

No Matching Entries Found

\*A:SRU4# show router ldp session community RED

LDP IPv4 Sessions

Peer LDP Id	Adj Type	State	Msg Sent	Msg Recv	Up Time
10.100.1.1:0	Link	Established	327423	256220	3d 22:03:37
10.20.1.1.1:0	Targeted	Established	219040	127266	3d 21:55:33
10.20.1.2:0	Targeted	Established	365925	407096	3d 22:38:34
10.20.1.5:0	Targeted	Established	359363	424352	3d 21:54:55
10.20.1.6:0	Both	Established	1043697	1668727	3d 21:32:17
10.20.1.9:0	Targeted	Established	507123	630800	3d 22:25:57
10.20.1.10:0	Targeted	Established	320141	269052	3d 21:34:08
10.20.1.11:0	Targeted	Established	284934	180483	3d 22:18:21

No. of IPv4 Sessions: 8

LDP IPv6 Sessions

Peer LDP Id	Adj Type	State	Msg Sent	Msg Recv	Up Time
-------------	----------	-------	----------	----------	---------

No Matching Entries Found

=====  
 Session with Peer 10.10.2.3:0, Local 10.10.2.1:0  
 =====

Adjacency Type	: Targeted	State	: Established
Up Time	: 0d 00:01:16		
Max PDU Length	: 4096	KA/Hold Time Remaining	: 28
Link Adjacencies	: 0	Targeted Adjacencies	: 1
Local Address	: 3ffe::a0a:201	Peer Address	: 3ffe::a0a:203
Local UDP Port	: 646	Peer UDP Port	: 646
Local TCP Port	: 646	Peer TCP Port	: 646

```

Local KA Timeout      : 30                Peer KA Timeout      : 30
Msg Sent             : 36                Msg Recv            : 37
IPv4 Pfx FEC Sent   : 0                IPv4 Pfx FEC Recv   : 0
IPv6 Pfx FEC Sent   : 0                IPv6 Pfx FEC Recv   : 0
IPv4 P2MP FEC Sent  : 0                IPv4 P2MP FEC Recv  : 0
IPv6 P2MP FEC Sent  : 0                IPv6 P2MP FEC Recv  : 0
Svc Fec128 Sent     : 1                Svc Fec128 Recv    : 1
Svc Fec129 Sent     : 0                Svc Fec129 Recv    : 0
IPv4 Addrs Sent     : 3                IPv4 Addrs Recv    : 6
IPv6 Addrs Sent     : 3                IPv6 Addrs Recv    : 6
Local GR State      : Not Capable      Peer GR State       : Not Capable
Local Nbr Liveness Time: 0          Peer Nbr Liveness Time : 0
Local Recovery Time : 0                Peer Recovery Time   : 0
Number of Restart   : 0                Last Restart Time    : Never
Label Distribution  : DU
Oper Fec Limit Thresho*: 0
Local-LSR ID advertise : Disabled
Community           :
Capabilities
Local P2MP          : Capable          Peer P2MP           : Capable
Local MP MBB       : Capable          Peer MP MBB         : Capable
Local Dynamic      : Capable          Peer Dynamic        : Capable
Local LSR Overload : Capable          Peer LSR Overload   : Capable
Local IPv4 Pfx     : Capable          Peer IPv4 Pfx       : Capable
Local IPv6 Pfx     : Capable          Peer IPv6 Pfx       : Capable
Local SvcFec128    : Capable          Peer SvcFec128     : Capable
Local SvcFec129    : Capable          Peer SvcFec129     : Capable
Local UnregNoti    : Capable          Peer UnregNoti     : Capable
Advertise          : Service
IPv4 PfxFec0Load Sent : No          IPv4 PfxFec0Load Recv : No
IPv6 PfxFec0Load Sent : No          IPv6 PfxFec0Load Recv : No
IPv4 P2MPFec0Load Sent : No          IPv4 P2MPFec0Load Recv : No
IPv6 P2MPFec0Load Sent : No          IPv6 P2MPFec0Load Recv : No
Svc Fec128 0Load Sent : No          Svc Fec128 0Load Recv : No
Svc Fec129 0Load Sent : No          Svc Fec129 0Load Recv : No
IPv4 PfxFec EOL Sent : No          IPv4 PfxFec EOL Recv : No
IPv6 PfxFec EOL Sent : No          IPv6 PfxFec EOL Recv : No
IPv4 P2MPFec EOL Sent : No          IPv4 P2MPFec EOL Recv : No
IPv6 P2MPFec EOL Sent : No          IPv6 P2MPFec EOL Recv : No
Svc Fec128 EOL Sent  : Yes          Svc Fec128 EOL Recv  : Yes
Svc Fec129 EOL Sent  : Yes          Svc Fec129 EOL Recv  : Yes
    
```

=====  
 \* indicates that the corresponding row element may have been truncated.

=====  
 \*A:Dut-A# show router ldp session 3ffe::a14:106  
 =====

LDP IPv6 Sessions  
 =====

Peer LDP Id	Adj Type	State	Msg Sent	Msg Recv	Up Time
3ffe::a14:106[0]	Targeted	Established	601	602	0d 00:53:28

-----  
 No. of IPv6 Sessions: 1  
 =====

\*A:Dut-A# show router ldp session 10.20.1.2 local-addresses  
 =====

LDP Session Local-Addresses  
 =====

```
-----  
Session with Peer 10.20.1.2:0,  
Local 10.20.1.1:0  
-----  
IPv4 Sent Addresses:  
  
10.10.1.1      10.10.2.1      10.20.1.1  
  
IPv6 Sent Addresses:  
  
3ffe::a0a:101  
3ffe::a0a:201  
3ffe::a14:101  
fe80::11  
  
IPv4 Recv Addresses:  
  
10.10.1.2      10.10.3.2      10.10.4.2      10.10.12.2  
10.20.1.2  
  
IPv6 Recv Addresses:  
  
3ffe::a0a:102  
3ffe::a0a:302  
3ffe::a0a:402  
3ffe::a0a:c02  
3ffe::a14:102  
fe80::12  
=====
```

```
*A:Dut-A# show router ldp session 10.20.1.2 local-addresses sent  
=====
```

```
LDP Session Local-Addresses  
=====
```

```
-----  
Session with Peer 10.20.1.2:0,  
Local 10.20.1.1:0  
-----  
IPv4 Sent Addresses:  
  
10.10.1.1      10.10.2.1      10.20.1.1  
  
IPv6 Sent Addresses:  
  
3ffe::a0a:101  
3ffe::a0a:201  
3ffe::a14:101  
fe80::11  
=====
```

```
*A:Dut-A# show router ldp session 10.20.1.2 local-addresses recv  
=====
```

```
LDP Session Local-Addresses  
=====
```

```
-----  
Session with Peer 10.20.1.2:0,  
Local 10.20.1.1:0  
-----  
IPv4 Recv Addresses:  
  
10.10.1.2      10.10.3.2      10.10.4.2      10.10.12.2  
10.20.1.2  
  
IPv6 Recv Addresses:
```



```
3ffe::a0a:102
3ffe::a0a:302
3ffe::a0a:402
3ffe::a0a:c02
3ffe::a14:102
fe80::12
=====
*A:Dut-A#

*A:Dut-A# show router ldp session 10.20.1.2 local-addresses rcv ip-
addr 3ffe::a14:102
=====
LDP Session Local-Addresses
=====
-----
Session with Peer 10.20.1.2:0,
Local 10.20.1.1:0
-----
IPv6 Rcv Addresses:

3ffe::a14:102
=====
*A:Dut-A#

*A:Dut-A# show router ldp session 10.20.1.2 link summary
No. of IPv4 Sessions: 1
*A:Dut-A#

*A:Dut-A# show router ldp session link
=====
LDP IPv4 Sessions
=====
Peer LDP Id      Adj Type  State      Msg Sent  Msg Recv  Up Time
-----
10.20.1.2:0     Link     Established 1794      1796     0d 01:19:38
10.20.1.3:0     Link     Established 1792      1794     0d 01:19:33
-----
No. of IPv4 Sessions: 2
=====

LDP IPv6 Sessions
=====
Peer LDP Id      Adj Type  State      Msg Sent  Msg Recv  Up Time
-----
3ffe::a14:102[0] Link     Established 1788      1792     0d 01:19:19
3ffe::a14:103[0] Link     Established 1789      1788     0d 01:19:19
-----
No. of IPv6 Sessions: 2
=====
*A:Dut-A# show router ldp session link summary
No. of IPv4 Sessions: 2
No. of IPv6 Sessions: 2
*A:Dut-A#

*A:Dut-A# show router ldp session state up link
=====
LDP IPv4 Sessions
```

```

=====
Peer LDP Id           Adj Type  State           Msg Sent  Msg Recv  Up Time
-----
10.20.1.2:0          Link      Established     1805      1807      0d 01:20:08
10.20.1.3:0          Link      Established     1803      1805      0d 01:20:03
-----
No. of IPv4 Sessions: 2
=====

LDP IPv6 Sessions
=====
Peer LDP Id           Adj Type  State           Msg Sent  Msg Recv  Up Time
-----
3ffe::a14:102[0]     Link      Established     1799      1803      0d 01:19:49
3ffe::a14:103[0]     Link      Established     1799      1799      0d 01:19:49
-----
No. of IPv6 Sessions: 2
=====
*A:Dut-A#

*A:Dut-A# show router ldp session summary
No. of IPv4 Sessions: 3
No. of IPv6 Sessions: 3
*A:Dut-A#

*A:Dut-A# show router ldp session local-addresses ipv4

=====
LDP Session Local-Addresses
=====
-----
Session with Peer 10.20.1.2:0,
                Local 10.20.1.1:0
-----
IPv4 Sent Addresses:

                10.10.1.1      10.10.2.1      10.20.1.1

IPv4 Recv Addresses:

                10.10.1.2      10.10.3.2      10.10.4.2      10.10.12.2
                10.20.1.2

-----
Session with Peer 10.20.1.3:0,
                Local 10.20.1.1:0
-----
IPv4 Sent Addresses:

                10.10.1.1      10.10.2.1      10.20.1.1

IPv4 Recv Addresses:

                10.10.2.3      10.10.3.3      10.10.5.3      10.10.11.3
                10.10.12.3      10.20.1.3

-----
Session with Peer 10.20.1.6:0,
                Local 10.20.1.1:0
-----
IPv4 Sent Addresses:
    
```

```

        10.10.1.1      10.10.2.1      10.20.1.1
IPv4 Recv Addresses:
        10.10.9.6      10.10.10.6     10.20.1.6
-----
Session with Peer 3ffe::a14:102[0],
      Local 3ffe::a14:101[0]
-----
IPv4 Sent Addresses:
        10.10.1.1      10.10.2.1      10.20.1.1
IPv4 Recv Addresses:
        10.10.1.2      10.10.3.2      10.10.4.2      10.10.12.2
        10.20.1.2
-----
Session with Peer 3ffe::a14:103[0],
      Local 3ffe::a14:101[0]
-----
IPv4 Sent Addresses:
        10.10.1.1      10.10.2.1      10.20.1.1
IPv4 Recv Addresses:
        10.10.2.3      10.10.3.3      10.10.5.3      10.10.11.3
        10.10.12.3     10.20.1.3
-----
Session with Peer 3ffe::a14:106[0],
      Local 3ffe::a14:101[0]
-----
IPv4 Sent Addresses:
        10.10.1.1      10.10.2.1      10.20.1.1
IPv4 Recv Addresses:
        10.10.9.6      10.10.10.6     10.20.1.6
=====
*A:Dut-A#

*A:Dut-A# show router ldp session 10.20.1.2 statistics

=====
LDP IPv4 Session Statistics
=====
Message Type                Sent                Received
-----
Session 10.20.1.2:0
-----
Hello                        1298                1300
Keepalive                    545                 545
Init                          1                   1
Label Mapping                 5                   5
Label Request                  0                   0
Label Release                  0                   0
Label Withdraw                 0                   0
Label Abort                    0                   0
Notification                   1                   1
Address                        3                   3
    
```

```

Address Withdraw          1          1
Capability                0          0
=====
*A:Dut-A#

*A:Dut-A# show router ldp session 10.20.1.2 statistics hello
=====
LDP IPv4 Session Statistics
=====
Message Type              Sent              Received
-----
Session 10.20.1.2:0
-----
Hello                    1303             1305
=====
*A:Dut-A# show router ldp session 10.20.1.2 statistics keepalive
=====
LDP IPv4 Session Statistics
=====
Message Type              Sent              Received
-----
Session 10.20.1.2:0
-----
Keepalive                547              547
=====
*A:Dut-A#
    
```

## session

### Syntax

**session** *ip-addr* [*label-space*] [*statistics*]

**session** *ip-addr* [*label-space*] **overload** [*fec-type p2mp* | **prefixes sub-type sub-type**]

**session** *ip-addr*[*label-space*] **overload** [*fec-type svc-fec128* | *svc-fec129*]

### Context

[\[Tree\]](#) (clear>router>ldp session)

### Full Context

clear router ldp session

### Description

This command restarts or clears statistics for LDP sessions.

### Parameters

#### *ip-address*

Clears the IP address of the session

#### *label-space*

Specifies the label space identifier that the router is advertising on the interface.

**Values** 0 to 65535

**statistics**

Clears only the statistics for a session.

**overload**

Clears overload information.

**fec-type**

Clears the specified FEC type.

**Values** p2mp, svc-fec128, svc-fec129

**session ip-addr[label-space]**

Specifies the IP address and label space identifier.

**Values** <ip-addr[label-spa\*> : ipv4-address:label-space  
ipv6-address [label-space]  
label-space — [0 to 65535]

**Platforms**

All

**session**

**Syntax**

**session ip-addr[label-space] [connection | peer | adjacency]**

**Context**

[\[Tree\]](#) (tools>dump>router>ldp session)

**Full Context**

tools dump router ldp session

**Description**

This command dumps information for an LDP session.

**Parameters**

**ip-addr[label-space]**

Dumps information for the specified IP address and label space identifier.

**Values** ip-addr[label-spa\*]: ipv4-address:label-space ipv6-address[label-space]  
label-space - [0 to 65535]

**connection**

Filters output for connection information.

### peer

Filters output for peering information.

### adjacency

Filters output for adjacency information.

## Platforms

All

## session

### Syntax

**session** **lsp-index** *lsp-index* [**path-lspid** *path-lspid*] [**detail**]

**session** **lsp-name** *lsp-name* [**path-lspid** *path-lspid*] [**detail**]

**session** **lsp-path** [**detail**]

**session** **lsp-path prefix** *ip-prefix* *prefix-length* [**src** *ip-address* *local-link address*] [**detail**]

**session** **sr-policy** [**detail**]

**session** **sr-policy prefix** *ip-prefix* *prefix-length* [**src** *ip-address* *local-link address*] [**detail**]

### Context

[\[Tree\]](#) (show>router>bfd>seamless-bfd session)

### Full Context

show router bfd seamless-bfd session

### Description

This command displays Seamless-BFD session information.

### Parameters

#### **lsp-index** *lsp-index*

Specifies the LSP index.

**Values** 0 to 4294967295

#### **path-lspid** *path-lspid*

Specifies the path LSP ID.

**Values** 0 to 4294967295

#### **detail**

Displays detailed information.

#### **lsp-name** *lsp-name*

Displays information about the specified LSP name, up to 64 characters.

### **lsp-path**

Keyword to display information by LSP path.

### **prefix**

Keyword to display information by far-end prefix.

### **sr-policy**

Keyword to display information by SR policy.

### **ip-prefix/prefix-length**

Specifies an IP prefix for which to display Seamless-BFD session information, and the length of the prefix.

**Values** *ipv4-prefix* — a.b.c.d (host bits must be zero)  
*ipv4-prefix-length* — 0 to 32  
*ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)  
*ipv6-prefix-length* — 0 to 128

### **ip-address/link-local-address**

Specifies the source IP address for which to display Seamless-BFD session information.

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x[-interface]  
x:x:x:x:x:d.d.d.d[-interface]  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)  
interface — mandatory for link local address, up to 32 characters

## **Platforms**

All

## **Output**

The following output is an example of BFD session information and [Table 481: MPLS Seamless-BFD Session Output Fields](#) describes Seamless-BFD session output fields.

### **Output Example**

```
# show router bfd seamless-bfd session lsp-index 70000
=====
Legend:
  Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id
  wp = Working path   pp = Protecting path
=====
BFD Session
=====
```

```

Session Id           State      Tx Pkts  Rx Pkts
  Rem Addr/Info/SdpId:VcId  Multipl  Tx Intvl  Rx Intvl
  Protocols              Type      LAG Port  LAG ID
-----
10.20.1.6/32         Up         N/A       N/A
  10.20.1.6           3          10        10
  mplsLsp             cpm-np     N/A       N/A
-----
No. of BFD sessions: 1
=====
# show router bfd seamless-bfd session lsp-name "C_F_70000"
=====
Legend:
  Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id
  wp = Working path  pp = Protecting path
=====
BFD Session
=====
Session Id           State      Tx Pkts  Rx Pkts
  Rem Addr/Info/SdpId:VcId  Multipl  Tx Intvl  Rx Intvl
  Protocols              Type      LAG Port  LAG ID
-----
10.20.1.6/32         Up         N/A       N/A
  10.20.1.6           3          10        10
  mplsLsp             cpm-np     N/A       N/A
-----
No. of BFD sessions: 1
=====
    
```

The following show output displays an LSP that has BFD configured to use a controlled return path.

```

# show router bfd seamless-bfd session lsp-path detail
=====
BFD Session
=====
Prefix       : 10.20.1.6/32
Local Address : 10.20.1.3
LSP Name     : C_F_70000
LSP Index    : 70000          Path LSP ID    : 62976
Fec Type     : srTe
Return Path  : 454600
Oper State   : Up           Protocols      : mplsLsp
Up Time      : 0d 00:00:12  Up Transitions : 1
Down Time    : None        Down Transitions : 0
                          Version Mismatch : 0

Forwarding Information

Local Discr   : 1          Local State    : Up
Local Diag    : 0 (None)
Local Mode    : Demand
Local Min Tx  : 1000      Local Mult     : 3
Last Sent (ms) : 0        Local Min Rx   : 1000
Type          : cpm-np
Remote Discr  : 524293    Remote State   : Up
Remote Diag   : 0 (None) Remote Mode     : Demand
Remote Min Tx : 1000      Remote Mult    : 3
Remote C-flag : 1
Last Recv (ms) : 0        Remote Min Rx  : 3
    
```



```

=====
# show router bfd seamless-bfd session lsp-path prefix 10.20.1.6/32
=====
Legend:
  Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id
  wp = Working path  pp = Protecting path
=====
BFD Session
=====
Session Id          State      Tx Pkts   Rx Pkts
  Rem Addr/Info/SdpId:VcId  Multipl   Tx Intvl  Rx Intvl
  Protocols          Type      LAG Port   LAG ID
-----
10.20.1.6/32       Up         N/A       N/A
10.20.1.6         3         10        10
mplsLsp           cpm-np    N/A       N/A
-----
No. of BFD sessions: 1
=====
# show router bfd seamless-bfd session sr-policy
=====
Legend:
  Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id
  wp = Working path  pp = Protecting path
=====
BFD Session
=====
Session Id          State      Tx Pkts   Rx Pkts
  Rem Addr/Info/SdpId:VcId  Multipl   Tx Intvl  Rx Intvl
  Protocols          Type      LAG Port   LAG ID
  Loc Addr
-----
10.20.1.2/32       Up         385488    385352
10.20.1.2         3         1000      1000
srPolicy          central    N/A       N/A
10.20.1.2/32       Down       383831    312114
10.20.1.2         3         1000      1000
srPolicy          central    N/A       N/A
-----
No. of BFD sessions: 1
=====

```

```

=====
# show router bfd seamless-bfd session sr-policy prefix 10.20.1.2/32
=====
Legend:
  Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id
  wp = Working path  pp = Protecting path
=====
BFD Session
=====
Session Id          State      Tx Pkts   Rx Pkts
  Rem Addr/Info/SdpId:VcId  Multipl   Tx Intvl  Rx Intvl
  Protocols          Type      LAG Port   LAG ID
  Loc Addr
-----
10.20.1.2/32       Up         385661    385525
10.20.1.2         3         1000      1000
srPolicy          central    N/A       N/A
-----

```

```

10.20.1.2/32                               Down      384005    312114
10.20.1.2                                 3         1000      1000
srPolicy                                   central   N/A       N/A
    
```

```
-----
No. of BFD sessions: 1
=====
```

```
# show router bfd seamless-bfd session sr-policy prefix 10.20.1.2/32 detail
```

```
=====
BFD Session
=====
```

```

Prefix      : 10.20.1.2/32
Local Address : 10.20.1.1
LSP Index   : 917507                Path LSP ID   : 2
Fec Type    : srPolicy              Hop Id        : 1
Oper State  : Up                    Protocols     : srPolicy
Recd Msgs   : 4045751               Sent Msgs     : 4045751
Up Time     : 2d 19:25:46           Up Transitions : 1
Down Time   : None                  Down Transitions : 0
                                           Version Mismatch : 0
    
```

```
Forwarding Information
```

```

Local Discr : 1                    Local State   : Up
Local Diag  : 0 (None)
Local Mode  : Demand
Local Min Tx : 100
Last Sent   : 09/14/2020 14:36:26  Local Mult   : 3
Type        : central              Local Min Rx  : 100
Remote Discr : 524288              Remote State  : Up
Remote Diag  : 0 (None)            Remote Mode   : Async
Remote Min Tx : 100                 Remote Mult   : 3
Remote C-flag : 0
Last Recv    : 09/14/2020 14:36:26  Remote Min Rx : 3
    
```

```
# show router bfd seamless-bfd session sr-policy detail
```

```
=====
BFD Session
=====
```

```

Prefix      : 10.20.1.2/32
Local Address : 10.20.1.1
LSP Index   : 917514                Path LSP ID   : 6
Fec Type    : srPolicy              Hop Id        : 1
Oper State  : Up                    Protocols     : srPolicy
Recd Msgs   : 385423               Sent Msgs     : 385559
Up Time     : 3d 19:13:17           Up Transitions : 2
Down Time   : None                  Down Transitions : 1
                                           Version Mismatch : 0
    
```

```
Forwarding Information
```

```

Local Discr : 23                    Local State   : Up
Local Diag  : 0 (None)
Local Mode  : Demand
Local Min Tx : 1000
Last Sent   : 07/06/2020 18:23:46  Local Mult   : 3
Type        : central              Local Min Rx  : 1000
Remote Discr : 524288              Remote State  : Up
Remote Diag  : 0 (None)            Remote Mode   : Async
Remote Min Tx : 1000                 Remote Mult   : 3
Remote C-flag : 0
Last Recv    : 07/06/2020 18:23:46  Remote Min Rx : 3
    
```

```

Prefix      : 10.20.1.2/32
Local Address : 10.20.1.1
LSP Index   : 917514
Fec Type    : srPolicy
Oper State  : Down
Recd Msgs   : 312114
Up Time     : None
Down Time   : 0d 00:12:26

Path LSP ID : 9
Hop Id      : 1
Protocols   : srPolicy
Sent Msgs   : 383902
Up Transitions : 5
Down Transitions : 5
Version Mismatch : 0

Forwarding Information
Local Discr : 26
Local Diag  : 1 (Detect time expired)
Local Mode  : Demand
Local Min Tx : 1000
Last Sent   : 07/06/2020 18:23:45
Type        : central
Remote      : Unheard
Local State : Down
Local Mult  : 3
Local Min Rx : 1000
    
```

Table 481: MPLS Seamless-BFD Session Output Fields

Label	Description
Session Id	Specifies the session ID
State	Specifies the session state (Up/Down)
Tx Pkts	Specifies the number of packets transmitted
Rx Pkts	Specifies the number of packets received
Rem Addr/Info/ SdpId:VcId	Specifies the session remote endpoint address information
Multipl	Specifies the multiplier
Tx Intvl	Specifies the transmit interval
Rx Intvl	Specifies the receive interval
Protocols	Specifies the protocol that the session is bound to
Type	Specifies the BFD type cpm-np — Specifies to use CPM network processor
LAG Port	Specifies the LAG Port
LAG ID	Specifies the LAG ID
No. of BFD sessions	Specifies the number of BFD sessions
Prefix	Specifies the prefix
Local Address	Specifies the local address
LSP Name	Specifies the LSP name

Label	Description
LSP Index	Specifies the LSP index
Path LSP ID	Specifies the path LSP ID
Fec Type	Specifies the FEC type
Return Path	Specifies the return path label for the S-BFD packet
Oper State	Specifies the operational state (Up/Down)
Protocols	Specifies the protocol used
Up Time	Specifies the up time
Up Transitions	Specifies the number of up transitions
Down Time	Specifies the down time
Down Transitions	Specifies the number of down transitions
Version Mismatch	Specifies the number of version mismatches
Local Discr	Specifies the local Discr information
Local State	Specifies the local state (Up/Down)
Local Diag	Specifies the local diag information
Local Mode	Specifies the local mode
Local Min Tx	Specifies the local Min Tx value
Local Mult	Specifies the local Mult value
Last Sent (ms)	Specifies the last sent forwarding information
Local Min Rx	Specifies the local Min Rx value
Type	Specifies the session endpoint type
Remote Discr	Specifies the remote Discr value
Remote State	Specifies the remote state (Up/Down)
Remote Diag	Specifies the remote diagnostic value
Remote Mode	Specifies the remote mode
Remote Min Tx	Specifies the remote minimum transmit value
Remote Mult	Specifies the remote multiplier
Remote C-flag	Specifies the remote C-flag value

Label	Description
Last Recv (ms)	Specifies the last received value
Remote Min Rx	Specifies the remote minimum receive value

## session

### Syntax

**session detail**

**session detail lsp-rsvp {head | tail}**

**session {ipv4 | ipv6} detail [lag lag-id] lag-port port-id**

**session [detail] lsp-ldp head**

**session [src ] [detail] lsp-ldp head prefix ip-prefix/prefix-length**

**session [detail] lsp-ldp tail**

**session [dest {ip-address | link-local-address}] [detail] lsp-ldp tail ip-address/link-local-addressprefix ip-prefix/prefix-length**

**session lsp-name lsp-name**

**session lsp-rsvp {head | tail}**

**session src ip-address/link-local-address dest {ip-address | link-local-address} [detail] lsp-rsvp {head | tail} tunnel-id tunnel-id lsp-id lsp-id**

**session mpls-tp**

**session lsp-name lsp-name [link-type {cc-only | cc-cv}] detail**

**session p2mp-interface interface-name detail**

**session src ip-address/link-local-address detail lsp-rsvp {head | tail} rsvp-session-name rsvp-session-name**

**session [src ip-address/link-local-address] [{ ipv4 | ipv6}]**

**session src ip-address/link-local-address dest {ip-address | link-local-address}**

**session src ip-address/link-local-address detail**

**session summary**

**session type type [{ipv4 | ipv6}]**

### Context

[\[Tree\]](#) (show>router>bfd session)

### Full Context

show router bfd session

### Description

This command displays information for existing BFD sessions.

## Parameters

### **detail**

Displays detailed session information.

### **lsp-rsvp**

Displays BFD sessions on an RSVP LSPs.

### **head**

Optional keyword to limit the output to BFD sessions at the head end of LSPs.

### **tail**

Optional keyword to limit the output to BFD sessions at the tail end of LSPs.

### **ipv4**

Optional keyword to limit the output to IPv4-based BFD sessions.

### **ipv6**

Optional keyword to limit the output to IPv6-based BFD sessions.

### **lag-id**

Limits the output to micro-BFD sessions associated with the specified LAG ID.

### **port-id**

Limits the output to micro-BFD sessions associated with the specified port ID.

### **lsp-ldp**

Displays BFD sessions on an LDP LSPs.

### **ip-address**

Limits the output to BFD sessions with the specified IPv4 or IPv6 addresses.

### **link-local-address**

Limits the output to BFD sessions with the specified IPv6 link-local addresses.

### **ip-prefix/prefix-length**

Displays IPv4 or IPv6 addresses of the BFD sessions.

**Values** The following values apply to the 7750 SR and 7950 XRS:

ipv4-prefix	a.b.c.d (host bits must be 0)	
ipv4-prefix-length	0 to 32	
ipv6-prefix	x:x:x:x:x:x:x (eight 16-bit pieces)	
	x:x:x:x:x:d.d.d.d	
	x:	[0 to FFFF]H
	d:	[0 to 255]D
ipv6-prefix-length	0 to 128	

### **lsp-name**

Limits the output to BFD sessions associated with the specified LSP.

**tunnel-id**

Limits the output to BFD sessions associated with the specified tunnel ID.

**lsp-id**

Limits the output to BFD sessions associated with the specified LSP ID.

**mpls-tp**

Optional keyword to limit the output to BFD sessions on MPLS-TP LSPs.

**cc-only**

Optional keyword to limit the output to CC BFD sessions on MPLS-TP LSPs.

**cc-cv**

Optional keyword to limit the output to CV BFD sessions on MPLS-TP LSPs.

**interface-name**

Limits the output to the BFD session for the specified interface.

**rsvp-session-name**

Limits the output to the BFD session for the specified RSVP session.

**summary**

Displays summary session information for the router.

**type**

Limits the output to BFD sessions associated with the specified type.

**Values** iom, central, cpm-np

**Platforms**

All

**Output**

The following output is an example of BFD session information, and [Table 482: BFD Session Field Descriptions](#) describes the fields.

**Output Example**

```
A:node-2# show router bfd session

=====
Legend:
  Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id
  wp = Working path  pp = Protecting path
=====
BFD Session
=====
Session Id           State      Tx Pkts   Rx Pkts
Rem Addr/Info/SdpId:VcId  Multipl   Tx Intvl  Rx Intvl
Protocols            Type      LAG Port   LAG ID
Loc Addr
-----
10.20.1.6/32         Up         N/A       N/A
10.20.1.6            3         1000     1000
mplsLsp              cpm-np    N/A       N/A
10.20.1.3
-----
```

No. of BFD sessions: 1

A:node-2# show router bfd session

Legend:

Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id  
 wp = Working path pp = Protecting path

BFD Session

Session Id Rem Addr/Info/SdpId:VcId Protocols	State Multipl Type	Tx Pkts Tx Intvl LAG Port	Rx Pkts Rx Intvl LAG ID
10.20.1.6/32	Up	N/A	N/A
10.20.1.6 mplsLsp	3 cpm-np	10 N/A	10 N/A
10.20.1.6/32	Up	N/A	N/A
10.20.1.6 mplsLsp	3 cpm-np	10 N/A	10 N/A
10.20.1.6/32	Up	N/A	N/A
10.20.1.6 mplsLsp	3 cpm-np	10 N/A	10 N/A

No. of BFD sessions: 3

A:node-2# show router bfd session summary

BFD Session Summary

Termination	Session Count
central	0
cpm-np	3
iom, slot 1	0
iom, slot 2	0
iom, slot 3	0
iom, slot 4	0
iom, slot 5	0
iom, slot 6	0
Total	3

A:node-2# show router bfd session type cpm-np

Legend:

Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id  
 wp = Working path pp = Protecting path

BFD Session

Session Id Rem Addr/Info/SdpId:VcId Protocols	State Multipl Type	Tx Pkts Tx Intvl LAG Port	Rx Pkts Rx Intvl LAG ID
10.20.1.6/32	Up	N/A	N/A
10.20.1.6 mplsLsp	3 cpm-np	10 N/A	10 N/A
10.20.1.6/32	Up	N/A	N/A
10.20.1.6 mplsLsp	3 cpm-np	10 N/A	10 N/A
10.20.1.6/32	Up	N/A	N/A
10.20.1.6	3	10	10



```

mplsLsp                                cpm-np                                N/A                                N/A
-----
No. of BFD sessions: 3
=====
A:node-2# show router bfd seamless-bfd session lsp-path detail
=====
BFD Session
=====
Prefix          : 10.20.1.6/32
Local Address   : 10.20.1.3
LSP Name       : C_F_70001
LSP Index      : 70001                Path LSP ID      : 62464
Fec Type       : srTe
Oper State     : Up                   Protocols        : mplsLsp
Up Time        : 0d 15:10:06          Up Transitions   : 1
Down Time      : None                 Down Transitions : 0
                                           Version Mismatch : 0

Forwarding Information
Local Discr     : 42                   Local State      : Up
Local Diag     : 0 (None)
Local Mode     : Demand
Local Min Tx   : 10
Last Sent (ms) : 0                    Local Mult       : 3
Type           : cpm-np                Local Min Rx     : 10
Remote Discr   : 524293                Remote State     : Up
Remote Diag    : 0 (None)              Remote Mode      : Async
Remote Min Tx  : 10                    Remote Mult      : 3
Last Recv (ms) : 0                    Remote Min Rx    : 3
=====
Prefix          : 10.20.1.6/32
Local Address   : 10.20.1.3
LSP Name       : C_F_70001
LSP Index      : 70001                Path LSP ID      : 62466
Fec Type       : srTe
Oper State     : Up                   Protocols        : mplsLsp
Up Time        : 0d 15:10:06          Up Transitions   : 1
Down Time      : None                 Down Transitions : 0
                                           Version Mismatch : 0

Forwarding Information
Local Discr     : 43                   Local State      : Up
Local Diag     : 0 (None)
Local Mode     : Demand
Local Min Tx   : 10
Last Sent (ms) : 0                    Local Mult       : 3
Type           : cpm-np                Local Min Rx     : 10
Remote Discr   : 524293                Remote State     : Up
Remote Diag    : 0 (None)              Remote Mode      : Async
Remote Min Tx  : 10                    Remote Mult      : 3
Last Recv (ms) : 0                    Remote Min Rx    : 3
=====
Prefix          : 10.20.1.6/32
Local Address   : 10.20.1.3
LSP Name       : C_F_70001
LSP Index      : 70001                Path LSP ID      : 62468
Fec Type       : srTe
Oper State     : Up                   Protocols        : mplsLsp
Up Time        : 0d 15:09:26          Up Transitions   : 1
Down Time      : None                 Down Transitions : 0
                                           Version Mismatch : 0

Forwarding Information
Local Discr     : 44                   Local State      : Up
Local Diag     : 0 (None)
Local Mode     : Demand
    
```

```

Local Min Tx   : 10
Last Sent (ms) : 0
Type           : cpm-np
Remote Discr   : 524293
Remote Diag    : 0 (None)
Remote Min Tx  : 10
Last Recv (ms) : 0
Local Mult     : 3
Local Min Rx   : 10
Remote State   : Up
Remote Mode    : Async
Remote Mult    : 3
Remote Min Rx  : 3
=====
=====

A:node-2# show router bfd session src 3ffe::a01:102 dest 3ffe::a01:103
=====
BFD Session
=====
Remote Address : 3ffe::a01:103
Admin State    : Up
Oper State     : Up (3)
Protocols      : static bgp
Rx Interval    : 10
Tx Interval    : 10
Multiplier     : 3
Echo Interval  : 0
Up Time        : 0d 07:24:54
Up Transitions : 1
Down Time      : None
Down Transitions : 0
Version Mismatch : 0

Forwarding Information
Local Discr    : 2051
Local State    : Up (3)
Local Diag     : 0 (None)
Local Mode     : Async
Local Mult     : 3
Local Min Rx   : 10
Last Sent (ms) : 5
Type           : cpm-np
Remote Discr   : 1885
Remote State   : Up (3)
Remote Diag    : 0 (None)
Remote Mode    : Async
Remote Mult    : 3
Remote Min Rx  : 10
Last Recv (ms) : 1
=====

A:node-2# show router bfd session src fe80::a0a:a02-port-1-10 dest fe80::a0a:a03-
port-1-10
=====
BFD Session
=====
Remote Address : 2001:db8::a0a:a03
Admin State    : Up
Oper State     : Up (3)
Protocols      : pim isis ospf3
Rx Interval    : 10
Tx Interval    : 10
Multiplier     : 3
Echo Interval  : 0
Up Time        : 0d 07:10:20
Up Transitions : 3
Down Time      : None
Down Transitions : 2
Version Mismatch : 0

Forwarding Information
Local Discr    : 42
Local State    : Up (3)
Local Diag     : 3 (Neighbor signalled s*
Local Mode     : Async
Local Mult     : 3
Local Min Rx   : 10
Last Sent (ms) : 6
Type           : cpm-np
Remote Discr   : 270
Remote State   : Up (3)
Remote Diag    : 0 (None)
Remote Mode    : Async
Remote Mult    : 3
Remote Min Rx  : 10
Last Recv (ms) : 8
=====

* indicates that the corresponding row element may have been truncated.

A:node-2# show router bfd session ipv4
=====
BFD Session
=====
    
```

Interface Remote Address	State Protocols	Tx Intvl Tx Pkts	Rx Intvl Rx Pkts	Multipl Type
port-1-1 10.1.1.3	Up (3) pim isis	500 51532	500 51279	3 iom
port-1-2 10.2.1.3	Up (3) pim isis	500 51529	500 51279	3 iom
port-1-3 10.3.1.3	Up (3) pim isis	500 51529	500 51279	3 iom
port-1-4 10.4.1.3	Up (3) pim isis	500 51529	500 51279	3 iom
port-1-5 10.5.1.3	Up (3) pim isis	500 51529	500 51279	3 iom
port-1-6 10.6.1.3	Up (3) pim isis	500 51529	500 51279	3 iom
...				

A:node-2# show router bfd session ipv6

BFD Session

Interface Remote Address	State Protocols	Tx Intvl Tx Pkts	Rx Intvl Rx Pkts	Multipl Type
port-1-1 3ffe::a01:103	Up (3) static bgp	10 N/A	10 N/A	3 cpm-np
port-1-1 fe80::a0a:a03	Up (3) pim isis ospf3	10 N/A	10 N/A	3 cpm-np
port-1-2 3ffe::a02:103	Up (3) static bgp	10 N/A	10 N/A	3 cpm-np
port-1-2 fe80::a0a:a03	Up (3) pim isis ospf3	10 N/A	10 N/A	3 cpm-np
port-1-3 3ffe::a03:103	Up (3) static bgp	10 N/A	10 N/A	3 cpm-np
port-1-3 fe80::a0a:a03	Up (3) pim isis ospf3	10 N/A	10 N/A	3 cpm-np
port-1-4 3ffe::a04:103	Up (3) static bgp	10 N/A	10 N/A	3 cpm-np
port-1-4	Up (3)	10	10	3
...				

A:node-2# show router bfd session detail lsp-  
 rsvp head src 10.20.1.2 dest 10.20.1.5 tunnel-id 1 lsp-id 31744

BFD On LSP Session

Rsvp Session Name : lsp1::path1  
 Remote Address : 10.20.1.5  
 Lsp Id : 31744 Tunnel Id : 1  
 Oper State : Up Protocols : lsp  
 Recd Msgs : 240 Sent Msgs : 240  
 Up Time : 0d 00:03:58 Up Transitions : 1  
 Down Time : None Down Transitions : 0  
 Version Mismatch : 0

Forwarding Information

Local Discr : 1 Local State : Up  
 Local Diag : 0 (None)  
 Local Mode : Async  
 Local Min Tx : 1000 Local Mult : 3  
 Last Sent : 07/28/2015 19:05:13 Local Min Rx : 1000

```
Type           : central
Remote Discr   : 1
Remote Diag    : 0 (None)
Remote Min Tx  : 1000
Last Recv     : 07/28/2015 19:05:13
Remote State   : Up
Remote Mode    : Async
Remote Mult    : 3
Remote Min Rx  : 1000
=====
```

A:node-2# show router bfd session

```
Legend:
  Session Id = Interface Name | LSP Name | Prefix | RSVP Sess Name | Service Id
  wp = Working path  pp = Protecting path
=====
```

BFD Session

```
=====
Session Id          State      Tx Pkts  Rx Pkts
Rem Addr/Info/SdpId:VcId  Multipl  Tx Intvl Rx Intvl
Protocols           Type      LAG Port  LAG ID
-----
2001:db8:696a:6b6c:6d6e:6f70:7172:7374/128  Down    4111222334 3111222334  <<<
LMB:  stub values
N/A                19        1000      2000
bgp                central   N/A       N/A
103.104.105.106/32  Init     N/A       N/A
102.103.104.105    19       1000     2000
rsvp mcIpsec bgpLsp  cpm-np   N/A      N/A
RSVP_session_name_20_24_28_32
2001:db8:6b6c:6d6e:6f70:7172:7374:7576    19       1000     2000
mc-ring ospf3 ldpLsp  iom      N/A      N/A
-----
No. of BFD sessions: 3
=====
```

The following output is an example of BFD information.

A:node-2# show router 3 bfd session

BFD Session

```
=====
InterfaceState      Tx Intvl  Rx Intvl  Multipl
Remote Address      Protocols Tx Pkts   Rx Pkts   Type
-----
ies-3-10.1.3.3      Up (3)    ospf2     N/A       N/A       cpm-np
10.1.3.2
ies-3-10.1.4.3      Up (3)    pim       100       100       3
10.1.4.2
pim                 455       464       iom
-----
No. of BFD sessions: 2
=====
```

A:node-2# show router bfd session src 10.120.1.4 dest 10.120.1.3

BFD Session

```
=====
Remote Address : 10.120.1.3
Admin State    : Up
Oper State     : Up (3)
Protocols      : static
Rx Interval    : 10
Tx Interval    : 10
Multiplier    : 3
Echo Interval  : 0
Up Time       : 1d 19:03:28
Up Transitions : 2
Down Time     : None
Down Transitions : 1
Version Mismatch : 0
=====
```

```

Forwarding Information
Local Discr      : 19269          Local State      : Up (3)
Local Diag      : 0 (None)       Local Mode       : Async
Local Min Tx    : 10             Local Mult       : 3
Last Sent (ms) : 6               Local Min Rx     : 10
Type            : cpm-np
Remote Discr    : 5101          Remote State     : Up (3)
Remote Diag     : 0 (None)       Remote Mode      : Async
Remote Min Tx   : 1000          Remote Mult      : 3
Last Recv (ms) : 367           Remote Min Rx    : 10
    
```

A:node-2# show router bfd session

=====

BFD Session

=====

Interface/Lsp Name Remote Address/Info	State Protocols	Tx Intvl Tx Pkts	Rx Intvl Rx Pkts	Multipl Type
wp::lsp-32	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-33	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-34	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-35	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-36	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-37	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-38	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-39	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-40	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
wp::lsp-41	Down (1)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-32	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-33	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-34	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-35	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-36	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-37	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-38	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-39	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-40	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np
pp::lsp-41	Up (3)	1000	1000	3
0::0.0.0.0	mplsTp	N/A	N/A	cpm-np

-----

No. of BFD sessions: 20

-----

wp = Working path    pp = Protecting path

Table 482: BFD Session Field Descriptions

Label	Description
State	Displays the administrative state for this BFD session
Protocol	Displays the active protocol
Tx Intvl	Displays the interval, in milliseconds, between the transmitted BFD messages to maintain the session
Tx Pkts	Displays the number of transmitted BFD packets
Rx Intvl	Displays the expected interval, in milliseconds, between the received BFD messages to maintain the session
Rx Pkts	Displays the number of received packets
Mult	Displays the integer used by BFD to declare when the neighbor is down

## session

### Syntax

**session** [*session-type*] [**from** *ip-address* [**to** *ip-address*] [**lsp-name** *session-name*] [**status** {**up** | **down**}] [**detail**] [**interface** *ip-int-name*]

### Context

[\[Tree\]](#) (show>router>rsvp session)

### Full Context

show router rsvp session

### Description

This command shows RSVP session information.

### Parameters

#### *session-type*

Specifies the session type.

**Values** originate, transit, terminate, detour, detour-transit, detour-terminate, bypass-tunnel

#### **from** *ip-address*

Specifies the IP address of the originating router.

**to ip-address**

Specifies the IP address of the egress router.

**session-name**

Specifies the name, up to 160 characters in length, of the LSP used in the path. "\*" can be used as a wildcard character.

**status up**

Specifies to display a session that is operationally up.

**status down**

Specifies to display a session that is operationally down.

**detail**

Displays detailed information.

**ip-int-name**

Specifies the name of an existing MPLS interface.

If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.

The **interface** option filters the display to include all RSVP sessions that use this interface name as "In Interface" or as "Out Interface".

**Platforms**

All

**Output**

The following output is an example of RSVP session information.

[Table 483: RSVP Session Output Fields](#) describes RSVP session output fields.

*Table 483: RSVP Session Output Fields*

Label	Description
From	The IP address of the originating router.
To	The IP address of the egress router.
Tunnel ID	The IP address of the tunnel's ingress node supporting this RSVP session.
LSP ID	The ID assigned by the agent to this RSVP session.
Name	The administrative name assigned to the RSVP session by the agent.
State	Down — The operational state of this RSVP session is down. Up — The operational state of this RSVP session is up.

**Output Example**

```
*A:SRU4>show>router>rsvp# session
```

```

=====
RSVP Sessions
=====
From          To            Tunnel LSP   Name                State
            ID          ID
-----
10.30.1.5     10.30.1.4     18     27648 b4-1::b4-1         Up
10.30.1.5     10.30.1.4     1       37902 gsr::gsr           Up
10.30.1.5     10.20.1.22    11     53760 to_10_20_1_22_cspf::to_10_2* Up
10.30.1.4     10.20.1.20    146    17920 to_10_20_1_20_cspf_3::to_10* Up
10.30.1.4     10.20.1.20    145    34816 to_10_20_1_20_cspf_2::to_10* Up
10.30.1.4     10.20.1.20    147    45056 to_10_20_1_20_cspf_4::to_10* Up
10.30.1.4     10.20.1.20    148    6656  to_10_20_1_20_cspf_5::to_10* Up
10.30.1.4     10.20.1.20    149    58880 to_10_20_1_20_cspf_6::to_10* Up
10.30.1.4     10.20.1.20    150    13312 to_10_20_1_20_cspf_7::to_10* Up
10.30.1.4     10.20.1.20    152    40448 to_10_20_1_20_cspf_9::to_10* Up
10.30.1.4     10.20.1.20    154    27648 to_10_20_1_20_cspf_11::to_1* Up
10.30.1.4     10.20.1.20    155    12288 to_10_20_1_20_cspf_12::to_1* Up
10.30.1.4     10.20.1.20    151    46080 to_10_20_1_20_cspf_8::to_10* Up
10.30.1.4     10.20.1.20    153    512   to_10_20_1_20_cspf_10::to_1* Up
10.30.1.4     10.20.1.22    164    62464 to_10_20_1_22_cspf_2::to_10* Up
10.30.1.4     10.20.1.20    156    37888 to_10_20_1_20_cspf_13::to_1* Up
10.30.1.4     10.20.1.20    157    24064 to_10_20_1_20_cspf_14::to_1* Up
10.30.1.4     10.20.1.20    158    19968 to_10_20_1_20_cspf_15::to_1* Up
10.30.1.4     10.20.1.20    161    59904 to_10_20_1_20_cspf_18::to_1* Up
...
10.30.1.3     10.30.1.4     54     23088 to_10_30_1_4_cspf_4::to_11* Up
=====
    
```

Sessions : 1976

\* indicates that the corresponding row element may have been truncated.  
 \*A:SRU4>show>router>rsvp#

A:ALA-12# show router rsvp session lsp-name A\_C\_2::A\_C\_2 status up

```

=====
RSVP Sessions
=====
From          To            Tunnel LSP   Name                State
            ID          ID
-----
10.20.1.1     10.20.1.3     2       40    A_C_2::A_C_2         Up
=====
    
```

Sessions : 1

A:ALA-12#

A:Phoenix 199# show router rsvp session detail

```

=====
RSVP Sessions (Detailed)
=====
LSP : From Reno to Atlanta RSVP-TE::primary_empty
-----
From          : 192.168.48.194          To            : 192.168.48.224
Tunnel ID     : 4                          LSP ID        : 26682
Style         : SE                          State         : Up
Session Type  : Transit
In Interface  : 1/1/1                    Out Interface  : 1/1/7
In IF Name    : toSim194
Out IF Name   : toSim184
In Label     : 262126                  Out Label     : 262128
Previous Hop  : 10.202.5.194              Next Hop      : 10.0.13.184
    
```



```

SetupPriority : 7                Hold Priority : 0
Class Type    : 0
SubGrpOrig ID : 0                SubGrpOrig Addr:
P2MP ID      : 0
FrrAvailType : Facility
FrrBypassLspName: bypass-link10.0.13.184-61452
FrrSrlgStrict : N/A            SrlgDisjoint : N/A
Path Recd    : 22859           Path Sent   : 22813
Resv Recd    : 22891           Resv Sent   : 22848
Summary msgs :
SPath Recd   : 0                SPath Sent  : 0
SResv Recd   : 0                SResv Sent  : 0
LSP Attr Flags : N/A
-----
LSP : From Reno to Atlanta RSVP-TE::secondary_empty
-----
From          : 192.168.48.194    To          : 192.168.48.224
Tunnel ID    : 4                  LSP ID     : 26684
Style        : SE                 State       : Up
Session Type : Transit
In Interface : 1/1/2              Out Interface : 1/1/7
In IF Name   : toSim219
Out IF Name  : toSim184
In Label     : 262130             Out Label   : 262132
Previous Hop : 10.202.1.219       Next Hop    : 10.0.13.184
SetupPriority : 7                  Hold Priority : 0
Class Type   : 0
SubGrpOrig ID : 0                SubGrpOrig Addr:
P2MP ID     : 0
FrrAvailType : N/A
FrrSrlgStrict : N/A            SrlgDisjoint : N/A
Path Recd    : 22762           Path Sent   : 24117
Resv Recd    : 22870           Resv Sent   : 22781
Summary msgs :
SPath Recd   : 0                SPath Sent  : 0
SResv Recd   : 0                SResv Sent  : 0
LSP Attr Flags : N/A
-----
LSP : bypass-link10.202.5.199-61877
-----
From          : 192.168.48.194    To          : 10.202.1.199
Tunnel ID    : 61877            LSP ID     : 16
Style        : FF                 State       : Up
Session Type : Terminate
In Interface : 1/1/2              Out Interface : n/a
In IF Name   : toSim219
Out IF Name  : n/a
In Label     : 262125             Out Label   : n/a
Previous Hop : 10.202.1.219       Next Hop    : n/a
SetupPriority : 7                  Hold Priority : 0
Class Type   : 0
SubGrpOrig ID : 0                SubGrpOrig Addr:
P2MP ID     : 0
FrrAvailType : N/A
FrrSrlgStrict : N/A            SrlgDisjoint : N/A
Path Recd    : 22901           Path Sent   : 0
Resv Recd    : 0                Resv Sent   : 22749
Summary msgs :
SPath Recd   : 0                SPath Sent  : 0
SResv Recd   : 0                SResv Sent  : 0
LSP Attr Flags : N/A
-----
LSP : bypass-link10.0.13.184-61452
-----

```

```

From       : 192.168.48.199      To       : 10.0.3.184
Tunnel ID  : 61452                LSP ID   : 24
Style      : FF                   State     : Up
Session Type : Bypass Tunnel
In Interface : n/a                Out Interface : 1/1/3
In IF Name  : n/a
Out IF Name : toSim185
In Label    : n/a                Out Label   : 262126
Previous Hop : n/a              Next Hop    : 10.0.5.185
SetupPriority : 7                 Hold Priority : 0
Class Type  : 0
SubGrpOrig ID : 0                SubGrpOrig Addr:
P2MP ID     : 0
FrrAvailType : N/A
FrrSrlgStrict : N/A              SrlgDisjoint : N/A
Path Recd   : 0                 Path Sent   : 23423
Resv Recd   : 22912            Resv Sent   : 0
Summary msgs :
SPath Recd  : 0                 SPath Sent  : 0
SResv Recd  : 0                 SResv Sent  : 0
LSP Attr Flags : N/A
    
```

=====  
 A:Phoenix 199#

A:Phoenix 199# show router rsvp session interface toSim219 detail

=====  
 RSVP Sessions (Detailed)  
 =====

-----  
 LSP : From Reno to Atlanta RSVP-TE::secondary\_empty  
 -----

```

From       : 192.168.48.194      To       : 192.168.48.224
Tunnel ID  : 4                    LSP ID   : 26684
Style      : SE                   State     : Up
Session Type : Transit
In Interface : 1/1/2                Out Interface : 1/1/7
In IF Name  : toSim219
Out IF Name : toSim184
In Label    : 262130              Out Label   : 262132
Previous Hop : 10.202.1.219        Next Hop    : 10.0.13.184
SetupPriority : 7                 Hold Priority : 0
Class Type  : 0
SubGrpOrig ID : 0                SubGrpOrig Addr:
P2MP ID     : 0
FrrAvailType : N/A
FrrSrlgStrict : N/A              SrlgDisjoint : N/A
Path Recd   : 22768              Path Sent   : 24124
Resv Recd   : 22876              Resv Sent   : 22789
Summary msgs :
SPath Recd  : 0                 SPath Sent  : 0
SResv Recd  : 0                 SResv Sent  : 0
LSP Attr Flags : N/A
    
```

-----  
 LSP : bypass-link10.202.5.199-61877  
 -----

```

From       : 192.168.48.194      To       : 10.202.1.199
Tunnel ID  : 61877                LSP ID   : 16
Style      : FF                   State     : Up
Session Type : Terminate
In Interface : 1/1/2                Out Interface : n/a
In IF Name  : toSim219
Out IF Name : n/a
In Label    : 262125              Out Label   : n/a
    
```

```
Previous Hop      : 10.202.1.219      Next Hop         : n/a
SetupPriority     : 7                Hold Priority    : 0
Class Type       : 0
SubGrpOrig ID    : 0                SubGrpOrig Addr:
P2MP ID         : 0
FrrAvailType     : N/A
FrrSrlgStrict    : N/A              SrlgDisjoint    : N/A
Path Recd        : 22906            Path Sent       : 0
Resv Recd        : 0                Resv Sent       : 22756
Summary msgs     :
SPath Recd       : 0                SPath Sent      : 0
SResv Recd       : 0                SResv Sent      : 0
LSP Attr Flags   : N/A
```

```
=====
*A:Dut-C# show router mpls lsp transit detail
```

```
=====
MPLS LSPs (Transit) (Detail)
```

```
-----
LSP tof1::sec2
```

```
-----
From              : 10.20.1.2          To              : 10.20.1.4
State             : Up
SetupPriority     : 5                Hold Priority    : 5
Class Type       : 5
In Interface      : lag-1:0           In Label        : 131068
Out Interface     : 2/1/2             Out Label       : 131068
Previous Hop      : 10.10.12.2        Next Hop        : 10.10.11.4
Reserved BW      : 1000 Kbps
```

```
=====
*A:Dut-C#
```

```
*A:Dut-B# show router rsvp session detour-terminate detail
```

```
=====
RSVP Sessions (Detailed)
```

```
=====
LSP : tof878::1_detour
```

```
-----
From              : 10.20.1.2          To              : 10.20.1.4
Tunnel ID         : 878                LSP ID          : 14929
Style            : SE                  State           : Up
Session Type     : Terminate (Detour)
In Interface      : lag-1:0           Out Interface   : 1/1/2:8
In Label         : 131069             Out Label       : 127951
Previous Hop      : 10.10.12.3        Next Hop        : 10.10.108.4
SetupPriority     : 4                Hold Priority    : 4
Class Type       : 5
SugGrpOrig ID    : 0                SubGrpOrig Addr: 0.0.0.0
P2MP ID         : 0

Path Recd        : 128                Path Sent       : 0
Resv Recd        : 125                Resv Sent       : 124
```

```
Summary messages:
```

```
SPath Recd       : 0                SPath Sent      : 0
SResv Recd       : 0                SResv Sent      : 0
```

```
=====
*A:Dut-B#
```

```
*A:Dut-B# show router rsvp session bypass-tunnel detail
```

```
=====
RSVP Sessions (Detailed)
```

```
=====
LSP : bypass-link10.10.108.4
-----
From       : 10.20.1.2           To       : 10.10.109.4
Tunnel ID  : 4003                LSP ID   : 6
Style      : FF                  State    : Up
Session Type : Bypass Tunnel
In Interface : n/a              Out Interface : 1/1/2:9
In Label   : n/a                Out Label  : 124069
Previous Hop : n/a              Next Hop   : 10.10.109.4
SetupPriority : 7                Hold Priority : 0
Class Type : 0
SugGrpOrig ID : 0                SubGrpOrig Addr: 0.0.0.0
P2MP ID    : 0

Path Recd  : 0                    Path Sent : 3
Resv Recd  : 4                    Resv Sent : 0

Summary messages:
SPath Recd : 0                    SPath Sent : 0
SResv Recd : 0                    SResv Sent : 0
=====
*A:Dut-B#

*A:Dut-B# show router rsvp session detour detail
=====
RSVP Sessions (Detailed)
-----
LSP : tof919::1_detour
-----
From       : 10.20.1.2           To       : 10.20.1.4
Tunnel ID  : 919                 LSP ID   : 15441
Style      : SE                  State    : Up
Session Type : Originate (Detour)
In Interface : n/a              Out Interface : 1/1/2:1
In Label   : n/a                Out Label  : 129865
Previous Hop : n/a              Next Hop   : 10.10.101.4
SetupPriority : 4                Hold Priority : 4
Class Type  : 5
SugGrpOrig ID : 0                SubGrpOrig Addr: 0.0.0.0
P2MP ID    : 0

Path Recd  : 0                    Path Sent : 106
Resv Recd  : 113                  Resv Sent : 0

Summary messages:
SPath Recd : 0                    SPath Sent : 0
SResv Recd : 0                    SResv Sent : 0
=====
*A:Dut-B#

*A:Dut-B# show router rsvp session detour-transit detail
=====
RSVP Sessions (Detailed)
-----
LSP : tof919::1_detour
-----
From       : 10.20.1.2           To       : 10.20.1.4
Tunnel ID  : 919                 LSP ID   : 15441
Style      : SE                  State    : Up
Session Type : Transit (Detour)
In Interface : lag-1:0           Out Interface : 1/1/2:6
```

```

In Label      : 131071          Out Label     : 127952
Previous Hop  : 10.10.12.3     Next Hop      : 10.10.106.4
SetupPriority : 4              Hold Priority  : 4
Class Type   : 5
SugGrpOrig ID : 0              SubGrpOrig Addr: 0.0.0.0
P2MP ID      : 0

Path Recd    : 119            Path Sent     : 123
Resv Recd    : 121            Resv Sent     : 120
    
```

```

Summary messages:
SPath Recd    : 0              SPath Sent    : 0
SResv Recd    : 0              SResv Sent    : 0
    
```

=====  
 \*A:Dut-B#

\*A:Dut-B# show router rsvp session detour-terminate detail

=====  
 RSVP Sessions (Detailed)

-----  
 LSP : tof878::1\_detour

```

-----
From          : 10.20.1.2          To           : 10.20.1.4
Tunnel ID     : 878                LSP ID       : 14929
Style         : SE                 State        : Up
Session Type  : Terminate (Detour)
In Interface  : lag-1:0            Out Interface : 1/1/2:8
In Label      : 131069            Out Label     : 127951
Previous Hop  : 10.10.12.3         Next Hop      : 10.10.108.4
SetupPriority : 4                  Hold Priority  : 4
Class Type    : 5
SugGrpOrig ID : 0                  SubGrpOrig Addr: 0.0.0.0
P2MP ID       : 0

Path Recd     : 128                Path Sent     : 0
Resv Recd     : 125                Resv Sent     : 124
    
```

```

Summary messages:
SPath Recd    : 0              SPath Sent    : 0
SResv Recd    : 0              SResv Sent    : 0
    
```

=====  
 \*A:Dut-B#

\*A:Dut-B# show router rsvp session bypass-tunnel detail

=====  
 RSVP Sessions (Detailed)

-----  
 LSP : bypass-link10.10.108.4

```

-----
From          : 10.20.1.2          To           : 10.10.109.4
Tunnel ID     : 4003              LSP ID       : 6
Style         : FF                 State        : Up
Session Type  : Bypass Tunnel
In Interface  : n/a                Out Interface : 1/1/2:9
In Label      : n/a                Out Label     : 124069
Previous Hop  : n/a                Next Hop      : 10.10.109.4
SetupPriority : 7                  Hold Priority  : 0
Class Type    : 0
SugGrpOrig ID : 0                  SubGrpOrig Addr: 0.0.0.0
P2MP ID       : 0

Path Recd     : 0                  Path Sent     : 3
    
```

```
Resv Recd      : 4                Resv Sent      : 0
Summary messages:
SPath Recd     : 0                SPath Sent     : 0
SResv Recd     : 0                SResv Sent     : 0
=====
*A:Dut-B#
```

## session

### Syntax

```
session src-ip ip-address dst-ip ip-address
```

### Context

[\[Tree\]](#) (clear>router>bfd session)

### Full Context

```
clear router bfd session
```

### Description

This command clears BFD sessions.

### Parameters

**src-ip** *ip-address*

Specifies the address of the local endpoint of this BFD session.

**dst-ip** *ip-address*

Specifies the address of the remote endpoint of this BFD session.

### Platforms

All

## session

### Syntax

```
session all
```

```
session client srcAddr
```

### Context

[\[Tree\]](#) (clear>video>id session)

### Full Context

```
clear video id session
```

## Description

This command clears session information.

## Parameters

**all**

Clears all sessions.

**client *srcAddr***

Clears information for the client source address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s

## session

## Syntax

**session all [rt-server] [fcc-server]**

**session client *srcAddr* [rt-server] [fcc-server]**

## Context

[\[Tree\]](#) (clear>video>statistics>id session)

## Full Context

clear video statistics id session

## Description

This command clears video statistics for a particular channel.

## Parameters

**all**

Clears statistics for all sessions.

**rt-server**

Clears all RET server related statistics.

**fcc-server**

Clears all FCC server related statistics.

**client *srcAddr***

Clears statistics for the specified source address.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s

## session

### Syntax

```
session session-name [{all | base | bin-group | event-mon | meas-interval}]
```

### Context

**[Tree]** (show>oam-pm session)

### Full Context

```
show oam-pm session
```

### Description

Show the configuration and status information for an OAM Performance Monitoring session.

### Parameters

#### **session-name**

Specifies the session name up to 32 characters.

#### **all**

Displays all attributes.

#### **base**

Specifies the base configuration option for the session.

#### **bin-group**

Specifies the associated bin group and its attributes.

#### **event-mon**

Configures event monitoring and last TCA.

#### **meas-interval**

Configures event monitoring and last TCA.

### Platforms

All

### Output

The following output is an example of OAM-PM configuration information.

#### Output Example

```
show oam-pm session "vpls1000-PM-YL4-1/1/9:1000.1000" all
-----
Basic Session Configuration
-----
Session Name       : vpls1000-PM-YL4-1/1/9:1000.1000
Description        : (Not Specified)
Test Family        : ethernet           Session Type       : proactive
Bin Group          : 3
-----
```



-----  
 Ethernet Configuration  
 -----

Source MEP : 30 Priority : 7 (FC : nc)  
 Source Domain : 14 Dest MAC Address : 00:00:00:00:00:32  
 Source Assoc'n : 1000 Remote MEP : none  
 -----

-----  
 DMM Test Configuration and Status  
 -----

Test ID : 10001 Admin State : Up  
 Oper State : Up Data TLV Size : 0 octets  
 On-Demand Duration: Not Applicable On-Demand Remaining: Not Applicable  
 Interval : 1000 ms  
 Detectable Tx Err : none  
 -----

-----  
 SLM Test Configuration and Status  
 -----

Test ID : 10001 Admin State : Up  
 Oper State : Up Data TLV Size : 0 octets  
 On-Demand Duration: Not Applicable On-Demand Remaining: Not Applicable  
 Interval : 100 ms  
 CHLI Threshold : 4 HLIs Frames Per Delta-T : 10 SLM frames  
 Consec Delta-Ts : 10 FLR Threshold : 50%  
 HLI Force Count : no  
 Detectable Tx Err : none  
 -----

-----  
 5-mins Measurement Interval Configuration  
 -----

Duration : 5-mins Intervals Stored : 32  
 Boundary Type : clock-aligned Clock Offset : 0 seconds  
 Accounting Policy : none Event Monitoring : enabled  
 Delay Event Mon : enabled Loss Event Mon : enabled  
 -----

-----  
 Configured Lower Bounds for Delay Tests, in microseconds  
 -----

Group Description	Admin Bin	FD(us)	FDR(us)	IFDV(us)
3	Up	0	0	0
	1	1	500	250
	2	500	1000	500
	3	1000	1500	1000
	4	2000	2000	1500
	5	3000	2500	2000
	6	4000	3000	2500
	7	5000	3500	3000
	8	5500	4000	3500
	9	6500	4500	4000

-----

-----  
 Bins Excluded from Average  
 -----

Bin Type	Direction	Bins
FD	round-trip	0,9

-----  
 Bins Excluded from Delay Event Count

Bin Type	Direction	Lowest Excluded Bin	Lower Bound (us)
FD	round-trip	9	6500

-----  
 Delay Events for the DMM Test

Bin Type	Direction	LowerBound(us)	Raise	Clear	Last TCA (UTC)
FD	round-trip	2000	50	10	2017/01/04 16:55:00

-----  
 Loss Events for the SLM Test

Event Type	Direction	Raise	Clear	Last TCA (UTC)
HLI	aggregate	50	0	none

show oam-pm session "vpls1000-PM-YL4-1/1/9:1000.1000" base

-----  
 Basic Session Configuration

```

Session Name      : vpls1000-PM-YL4-1/1/9:1000.1000
Description       : (Not Specified)
Test Family      : ethernet          Session Type      : proactive
Bin Group        : 3
    
```

-----  
 Ethernet Configuration

```

Source MEP        : 30                Priority          : 7 (FC : nc)
Source Domain     : 14                Dest MAC Address : 00:00:00:00:00:32
Source Assoc'n    : 1000             Remote MEP       : none
    
```

-----  
 DMM Test Configuration and Status

```

Test ID          : 10001              Admin State      : Up
Oper State       : Up                 Data TLV Size    : 0 octets
On-Demand Duration: Not Applicable    On-Demand Remaining: Not Applicable
Interval        : 1000 ms
Detectable Tx Err : none
    
```

-----  
 SLM Test Configuration and Status

```

Test ID          : 10001              Admin State      : Up
Oper State       : Up                 Data TLV Size    : 0 octets
On-Demand Duration: Not Applicable    On-Demand Remaining: Not Applicable
Interval        : 100 ms
CHLI Threshold   : 4 HLIIs           Frames Per Delta-T : 10 SLM frames
Consec Delta-Ts  : 10                FLR Threshold    : 50%
    
```

```

HLI Force Count : no
Detectable Tx Err : none
-----

show oam-pm session "vpls1000-PM-YL4-1/1/9:1000.1000" bin-group
-----
Configured Lower Bounds for Delay Tests, in microseconds
-----
Group Description          Admin Bin    FD(us)    FDR(us)    IFDV(us)
-----
3                          Up          0         0          0          0
                          1         1         500        250
                          2         500       1000       500
                          3        1000       1500      1000
                          4        2000       2000      1500
                          5        3000       2500      2000
                          6        4000       3000      2500
                          7        5000       3500      3000
                          8        5500       4000      3500
                          9        6500       4500      4000
-----

-----
Bins Excluded from Average
-----
Bin Type    Direction    Bins
-----
FD          round-trip    0,9
-----

-----
Bins Excluded from Delay Event Count
-----
Bin Type    Direction    Lowest Excluded Bin    Lower Bound (us)
-----
FD          round-trip                9                6500
-----

show oam-pm session "vpls1000-PM-YL4-1/1/9:1000.1000" meas-interval
-----
5-mins Measurement Interval Configuration
-----
Duration           : 5-mins           Intervals Stored      : 32
Boundary Type     : clock-aligned    Clock Offset          : 0 seconds
Accounting Policy : none             Event Monitoring      : enabled
Delay Event Mon   : enabled         Loss Event Mon        : enabled
-----

show oam-pm statistics session "eth-pm-service-1000" lmm meas-interval 15-
mins interval-number 2
-----
Start (UTC)       : 2014/07/08 03:15:00      Status                : completed
Elapsed (seconds) : 900                          Suspect                : no
Frames Sent       : 90                          Frames Received        : 90
-----

-----
Data Frames Sent    Data Frames Received
-----
Forward             900                    900
Backward            18900                  18900
    
```

-----  
 Frame Loss Ratios  
 -----

	Minimum	Maximum	Average
Forward	0.000%	0.000%	0.000%
Backward	0.000%	0.000%	0.000%

-----

-----  
 Availability Counters (Und = Undetermined)  
 -----

	Available	Und-Avail	Unavailable	Und-Unavail	HLI	CHLI
Forward	90	0	0	0	0	0
Backward	90	0	0	0	0	0

-----

-----  
 Und-Delta-T  
 -----

Forward	0
Backward	0

-----

show oam-pm session "ies1500-PM-YL4-1/1/1:1500.1500"

-----  
 Basic Session Configuration  
 -----

Session Name : ies1500-PM-YL4-1/1/1:1500.1500  
 Description : (Not Specified)  
 Test Family : ethernet Session Type : proactive  
 Bin Group : 2

-----

-----  
 Ethernet Configuration  
 -----

Source MEP : 30 Priority : 5 (fc ef)  
 Source Domain : 14 Dest MAC Address : none  
 Source Assoc'n : 1500 Remote MEP : 33

-----

-----  
 LMM Test Configuration and Status  
 -----

Test ID : 1 Admin State : Up  
 Oper State : Up Interval : 1000 ms  
 On-Demand Duration: Not Applicable On-Demand Remaining: Not Applicable  
 Availability : Disabled  
 CHLI Threshold : 5 HLIs Frames Per Delta-T : 10 LMM frames  
 Consec Delta-Ts : 10 FLR Threshold : 50%  
 Detectable Tx Err : none  
 Enable FC Collect : yes| no

-----

-----  
 5-mins Measurement Interval Configuration  
 -----

Duration : 5-mins Intervals Stored : 32  
 Boundary Type : clock-aligned Clock Offset : 0 seconds

```
Accounting Policy : none          Event Monitoring : disabled
Delay Event Mon  : disabled      Loss Event Mon  : disabled
-----
-----
Configured Lower Bounds for Delay Tests, in microseconds
-----
Group Description          Admin Bin    FD(us)    FDR(us)    IFDV(us)
-----
2                          Up          0          0          0          0
                          1          1          500        250
                          2          500        1000       500
                          3          1000       1500       1000
                          4          2000       2000       1500
                          5          3000       2500       2000
                          6          4000       3000       2500
                          7          5000       3500       3000
                          8          5500       4000       3500
                          9          6500       4500       4000
-----
```

## session

### Syntax

**session** [**sap** *sap-id*] [**interface** *ip-int-name* | *ip-address*] [**mac** *ieee-address*] [**circuit-id** *circuit-id*]  
 [**remote-id** *remote-id*] [**inter-dest-id** *intermediate-destination-id*] [**no-inter-dest-id**] [**ip-address** *ip-  
 prefix[/prefix-length]*] [**port** *port-id*] [**subscriber** *sub-ident-string*] [**sap-session-id** *sap-session-index*]

**session all**

### Context

[\[Tree\]](#) (clear>service>id>ipoe session)

### Full Context

clear service id ipoe session

### Description

This commands clears all identified IPoE sessions for the specified service instance. All associated subscriber hosts are deleted from the system.

### Parameters

#### **sap-id**

Specifies the physical port identifier portion of the SAP definition.

#### **ip-int-name**

Specifies the name of the IP interface up to 32 characters.

#### **ieee-address**

Specifies the 48-bit MAC address for the static ARP in the form aa:bb:cc:dd:ee:ff or aa-bb-cc-dd-ee-ff where aa, bb, cc, dd, ee, and ff are hexadecimal numbers. Allowed values are any non-broadcast, non-multicast MAC and non-IEEE reserved MAC addresses.

***circuit-id***

Specifies the circuit ID up to 127 characters.

***remote-id***

Specifies that information that goes into the remote-id sub-option in the DHCP relay packet, up to 255 characters.

***ip-address[/prefix-length]***

Specifies information for the specified IP address and mask.

***no-inter-dest-id***

Displays the information about no intermediate destination ID.

***intermediate-destination-id***

Specifies the intermediate destination identifier which is encoded in the identification strings up to 32 characters.

***port-id***

Displays information about the specified port ID.

***sap-session-index***

Displays sap-session-index information.

***service-id***

Specifies the service ID of the wholesaler.

Values		
	<i>service-id:</i>	1 to 2147483647
	<i>svc-name:</i>	64 characters maximum

***sub-ident-string***

Specifies an existing subscriber identification profile.

***service-id***

Specifies information for the specified service ID.

Values		
	<i>service-id:</i>	1 to 2147483647
	<i>svc-name:</i>	64 characters maximum

***detail***

Displays all IPoE session details.

***all***

clears all active IPoE sessions for the specified service instance.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## session

### Syntax

#### session default-tunnel

**session** [**sap** *sap-id*] [**mac** *mac-address*] [**local-session-id** *local-id*] [**remote-session-id** *remote-id*]  
 [**detail**]

### Context

**[Tree]** (show>subscr-mgmt>pfcp session)

### Full Context

show subscriber-mgmt pfcp session

### Description

This command displays information on PFCP sessions, including the default session. By default, all sessions are shown; filters can be applied to reduce the number of sessions or select a specific session.

### Parameters

#### default-tunnel

Specifies that session information for the default tunnel is displayed.

#### detail

Specifies that associated forwarding information is displayed.

#### local-id

Specifies a local PFCP Session ID, up to 20 characters, which displays information for that local session ID.

#### remote-id

Specifies a remote PFCP session ID, up to 20 characters, which displays information for that remote session ID.

#### mac-address

Specifies the MAC address associated with the session, in the form xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx, which displays information associated with the specified MAC address.

#### sap-id

Specifies the SAP ID associated with the session.

#### Values

null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : <i>[qtag1</i>   <i>cp-conn-prof-id]</i>
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i>   <i>eth-sat-id</i> : <i>[qtag1</i>   <i>cp-conn-prof-id</i> ]. <i>[qtag2</i>   <i>cp-conn-prof-id]</i>
	<b>cp</b> keyword

	<i>conn-prof-id</i>	1 to 8000
cem	<i>slot/mda/port.channel</i>	
ima-grp	bundle-id [:vpi/vci   vpi   vpi1.vpi2   <b>cp.conn-prof-id</b> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port[.channel]</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
eth-tunnel	eth-tunnel-id[: <i>eth-tun-sap-id</i> ]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>   <i>lag-string</i>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 characters max
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	*   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	tunnel-id. <i>private</i>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
eth-sat-id	<b>esat-id</b> / <i>slot</i> / <i>port</i>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64



*sub-port*

a, b

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of this command.

### Output Example

```
A:BNG-UPF# show subscriber-mgmt pfc session
=====
PFCP Sessions
=====
Local Session Id           : 0x0000000000000001 (default*)
Local Peer Address         : 192.0.2.11
Local Router                : to_cp
Local TE-ID                : N/A
Remote Session Id         : 0x00000000000010100
Remote Peer Address       : 17.17.17.10
Remote TE-ID               : 0x0001fff0
PFCP Association           : smf
Data Upstream PDR-ID      : N/A
Data Downstream PDR-ID    : N/A
IBCP Upstream PDR-ID      : 0x0a00
IBCP Downstream PDR-ID    : N/A
StateId                    : N/A
Protocols                  : IPOE_DHCP4 PPPoE_DISC
=====
No. of PFCP Sessions: 1
=====
* indicates that the corresponding row element may have been truncated.
```

## session

### Syntax

**session lsp-path** [**lsp-index** *lsp-index*] [**path-lspid** *path-lspid*] [**prefix** *ip-prefix* /*prefix-length*] [**src** *ip-address* | *ipv6 address*]

**session lsp-path all**

**session sr-policy** [**lsp-index** *lsp-index*] [**path-lspid** *path-lspid*] [**prefix** *ip-prefix* /*prefix-length*] [**src** *ip-address* | *ipv6 address*]

**session sr-policy all**

### Context

**[Tree]** (clear>router>bfd>seamless-bfd session)

### Full Context

clear router bfd seamless-bfd session

## Description

This command clears Seamless-BFD (S-BFD) session information.

## Parameters

### **lsp-path**

Keyword to clear the S-BFD sessions for the LSP path.

### **sr-policy**

Keyword to clear the S-BFD sessions for the SR policy.

### **all**

Keyword to clear all S-BFD sessions.

### **lsp-index *lsp-index***

Specifies the LSP index.

**Values** 0 to 4294967295

### **path-lspid *path-lspid***

Specifies the path LSP ID.

**Values** 0 to 4294967295

### **prefix**

Keyword to clear information by far-end prefix.

### ***ip-prefix/prefix-length***

Specifies an IP prefix for which to clear S-BFD session information, and the length of the prefix.

**Values** *ipv4-prefix* — a.b.c.d (host bits must be zero)  
*ipv4-prefix-length* — 0 to 32  
*ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)  
*ipv6-prefix-length* — 0 to 128

### ***ip-address | ipv6-address***

Specifies the IP address for which to clear S-BFD session information.

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x[-interface]  
x:x:x:x:x:d.d.d.d[-interface]  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)  
interface — mandatory for link local address, up to 32 characters

## Platforms

All

## session

## Syntax

**session** *session-name*

## Context

[\[Tree\]](#) (monitor>oam-pm session)

## Full Context

monitor oam-pm session

## Description

This command monitors the raw measurement interval for the specified session and test.

## Platforms

All

## Output

The following output is an example of raw session measurement information.

### Output Example

```
monitor oam-pm session "eth-pm-service-4" dmm
-----
At time t = 0 sec (Base Statistics)
-----
Frame Delay (FD) Bin Counts
-----
Bin      Lower Bound      Forward      Backward      Round Trip
-----
0         0 us             3928         1125          0
1        1000 us          1197         1855         2611
2        2000 us           183          1361         1565
3        3000 us           36           762          778
4        4000 us           30           214          280
5        5000 us           14           45            81
6        6000 us            8            17            35
7        7000 us            1             5             16
8        8000 us            5            15            26
9       10000 us            1             4             11
-----
Frame Delay Range (FDR) Bin Counts
-----
Bin      Lower Bound      Forward      Backward      Round Trip
-----
0         0 us             5374         5317         5321
1        5000 us           29            86            82
-----
```

-----  
 Inter-Frame Delay Variation (IFDV) Bin Counts

Bin	Lower Bound	Forward	Backward	Round Trip
0	0 us	2475	1268	625
1	100 us	516	676	554
2	200 us	395	479	417
3	300 us	338	451	398
4	400 us	224	291	340
5	500 us	185	212	280
6	600 us	187	137	234
7	700 us	185	134	208
8	800 us	315	223	392
9	1000 us	582	1531	1954

-----  
 At time t = 10 sec (Mode: Delta)

-----  
 Frame Delay (FD) Bin Counts

Bin	Lower Bound	Forward	Backward	Round Trip
0	0 us	0	7	0
1	1000 us	10	2	6
2	2000 us	0	1	3
3	3000 us	0	0	1
4	4000 us	0	0	0
5	5000 us	0	0	0
6	6000 us	0	0	0
7	7000 us	0	0	0
8	8000 us	0	0	0
9	10000 us	0	0	0

-----  
 Frame Delay Range (FDR) Bin Counts

Bin	Lower Bound	Forward	Backward	Round Trip
0	0 us	10	10	10
1	5000 us	0	0	0

-----  
 Inter-Frame Delay Variation (IFDV) Bin Counts

Bin	Lower Bound	Forward	Backward	Round Trip
0	0 us	5	4	2
1	100 us	2	2	2
2	200 us	2	1	1
3	300 us	1	0	0
4	400 us	0	0	1
5	500 us	0	0	0
6	600 us	0	0	0
7	700 us	0	0	1
8	800 us	0	0	0
9	1000 us	0	3	3

-----  
 At time t = 20 sec (Mode: Delta)

-----  
 Frame Delay (FD) Bin Counts

```
-----
```

Bin	Lower Bound	Forward	Backward	Round Trip
0	0 us	9	0	0
1	1000 us	0	7	6
2	2000 us	0	3	3
3	3000 us	1	0	0
4	4000 us	0	0	0
5	5000 us	0	0	1
6	6000 us	0	0	0
7	7000 us	0	0	0
8	8000 us	0	0	0
9	10000 us	0	0	0

```
-----
```

Frame Delay Range (FDR) Bin Counts

```
-----
```

Bin	Lower Bound	Forward	Backward	Round Trip
0	0 us	10	10	10
1	5000 us	0	0	0

```
-----
```

Inter-Frame Delay Variation (IFDV) Bin Counts

```
-----
```

Bin	Lower Bound	Forward	Backward	Round Trip
0	0 us	5	3	2
1	100 us	0	2	2
2	200 us	0	1	0
3	300 us	0	3	1
4	400 us	2	0	0
5	500 us	1	0	0
6	600 us	0	1	2
7	700 us	0	0	0
8	800 us	0	0	0
9	1000 us	2	0	3

```
-----
```

monitor oam-pm session "eth-pm-service-4" slm

At time t = 0 sec (Base Statistics)

```
-----
```

	Frames Sent	Frames Received
Forward	54749	54749
Backward	54749	54749

```
-----
```

Availability Counters (Und = Undetermined)

```
-----
```

	Available	Und-Avail	Unavailable	Und-Unavail	HLI	CHLI
Forward	5475	0	0	0	0	0
Backward	5475	0	0	0	0	0

```
-----
```

At time t = 10 sec (Mode: Delta)

```
-----
```

	Frames Sent	Frames Received
--	-------------	-----------------

```
-----
```

```

Forward          100          100
Backward        100          100
-----
Availability Counters (Und = Undetermined)
-----
          Available  Und-Avail  Unavailable  Und-Unavail          HLI          CHLI
-----
Forward          10           0           0           0           0           0
Backward         10           0           0           0           0           0
-----
At time t = 20 sec (Mode: Delta)
-----
          Frames Sent      Frames Received
-----
Forward          100          100
Backward         100          100
-----
Availability Counters (Und = Undetermined)
-----
          Available  Und-Avail  Unavailable  Und-Unavail          HLI          CHLI
-----
Forward          10           0           0           0           0           0
Backward         10           0           0           0           0           0
-----

monitor oam-pm session "ip-vprn-500" twamp-light
-----
At time t = 0 sec (Base Statistics)
-----
Frame Delay (FD) Bin Counts
-----
Bin      Lower Bound      Forward      Backward      Round Trip
-----
0         0 us             89719       113813       82529
1        1000 us          51728       43288        62811
2        2000 us          19304       7882         16979
3        3000 us          5207        1300         3067
4        4000 us          1166        335          1280
5        5000 us          469         255          781
6        6000 us          227         129          361
7        7000 us          121         166          152
8        8000 us          83          253          114
9       10000 us        125         728          75
-----
Frame Delay Range (FDR) Bin Counts
-----
Bin      Lower Bound      Forward      Backward      Round Trip
-----
0         0 us             167124      166618       167138
1        5000 us          1025        1531         1011
-----
Inter-Frame Delay Variation (IFDV) Bin Counts
-----
Bin      Lower Bound      Forward      Backward      Round Trip
-----
0         0 us             29284       45291        36062
    
```

1	100 us	9615	10793	28238
2	200 us	9289	9827	20379
3	300 us	8933	8733	14325
4	400 us	8597	8362	10257
5	500 us	8216	7789	7635
6	600 us	8178	7606	5893
7	700 us	7782	7345	4963
8	800 us	14799	14500	8416
9	1000 us	63455	47902	31980

## session

### Syntax

**session** *ldp-id* [*ldp-id*] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[Tree] (monitor>router>ldp session)

### Full Context

monitor router ldp session

### Description

This command displays statistical information for LDP sessions at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified LDP session(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *ldp-id*

Specifies the IP address of the LDP session to display. Up to five IP addresses can be specified in a single statement.

#### Values

ipv4-address	label-space	
ipv6-address	[label-space]	
	label-space	0 to 65535
ipv4-address	a.b.c.d	
ipv6-address	x:x:x:x:x:x (16 eight-bit pieces)	
	x:x:x:x:x:d.d.d.d	

x: [0 to FFFF] H

d: [0 to 255] D

### **seconds**

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10 seconds

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Displays rate-per-second for each statistic instead of the delta.

## **Platforms**

All

## **Output**

The following output is an example of LDP session information.

### **Output Example**

```
A:ALA-103>monitor>router>ldp# session 10.10.10.104 interval 3 repeat 3 absolute
=====
Monitor statistics for LDP Session 10.10.10.104
=====
              Sent              Received
-----
At time t = 0 sec (Base Statistics)
-----
FECs                1                2
Hello               5288             5289
Keepalive           8225             8225
Init                 1                1
Label Mapping        1                4
Label Request        0                0
Label Release        0                0
Label Withdraw       0                0
Label Abort          0                0
Notification         0                0
Address              1                1
Address Withdraw     0                0
-----
At time t = 3 sec (Mode: Absolute)
```



```

-----
FECs                1                2
Hello               5288             5289
Keepalive           8226             8226
Init                1                1
Label Mapping       1                4
Label Request       0                0
Label Release       0                0
Label Withdraw      0                0
Label Abort         0                0
Notification        0                0
Address             1                1
Address Withdraw    0                0
-----
At time t = 6 sec (Mode: Absolute)
-----
FECs                1                2
Hello               5288             5290
Keepalive           8226             8226
Init                1                1
Label Mapping       1                4
Label Request       0                0
Label Release       0                0
Label Withdraw      0                0
Label Abort         0                0
Notification        0                0
Address             1                1
Address Withdraw    0                0
-----
At time t = 9 sec (Mode: Absolute)
-----
FECs                1                2
Hello               5288             5290
Keepalive           8226             8226
Init                1                1
Label Mapping       1                4
Label Request       0                0
Label Release       0                0
Label Withdraw      0                0
Label Abort         0                0
Notification        0                0
Address             1                1
Address Withdraw    0                0
=====
A:ALA-12>monitor>router>ldp#

A:ALA-12>monitor>router>ldp# session 10.10.10.104 interval 3 repeat 3 rate
=====
Monitor statistics for LDP Session 10.10.10.104
=====
                Sent                Received
-----
At time t = 0 sec (Base Statistics)
-----
FECs                1                2
Hello               5289             5290
Keepalive           8227             8227
Init                1                1
Label Mapping       1                4
Label Request       0                0
Label Release       0                0
Label Withdraw      0                0
Label Abort         0                0
    
```

```

Notification          0          0
Address              1          1
Address Withdraw     0          0
-----
At time t = 3 sec (Mode: Rate)
-----
FECs                 0          0
Hello                0          0
Keepalive            0          0
Init                 0          0
Label Mapping        0          0
Label Request        0          0
Label Release        0          0
Label Withdraw       0          0
Label Abort          0          0
Notification         0          0
Address              0          0
Address Withdraw     0          0
-----
At time t = 6 sec (Mode: Rate)
-----
FECs                 0          0
Hello                0          0
Keepalive            0          0
Init                 0          0
Label Mapping        0          0
Label Request        0          0
Label Release        0          0
Label Withdraw       0          0
Label Abort          0          0
Notification         0          0
Address              0          0
Address Withdraw     0          0
-----
At time t = 9 sec (Mode: Rate)
-----
FECs                 0          0
Hello                0          0
Keepalive            0          0
Init                 0          0
Label Mapping        0          0
Label Request        0          0
Label Release        0          0
Label Withdraw       0          0
Label Abort          0          0
Notification         0          0
Address              0          0
Address Withdraw     0          0
=====
A:ALA-12>monitor>router>ldp#
    
```

## session

### Syntax

**session** *imsi* *imsi* **apn** *apn-string*

**session** [**peer-address** *ip-address*] [**router** *router-instance*] [**remote-control-teid** *teid*] [**local-control-teid** *teid*] [**detail**]

**session** *imsi* *imsi*

## Context

[\[Tree\]](#) (show>subscr-mgmt>gtp>s11 session)

## Full Context

```
show subscriber-mgmt gtp s11 session
```

## Description

This command displays GTP S11 session information.

## Parameters

### *imsi*

Specifies the IMSI (International Mobile Subscriber Identity) of this UE.

### *apn-string*

Specifies the APN (Access Point Name), up to 100 characters.

### *ip-address*

Specifies the IP address.

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x - [0 to FFFF]H  
d - [0 to 255]D  
length: 0 to 128

### *router-instance*

Specifies the identifier of the virtual router instance where the GTP tunnel is terminated.

**Values** *router-name* | *vprn-svc-id*  
*router-name* — "Base"  
*vprn-svc-id* — 1 to 2147483647

### *remote-control-teid teid*

Specifies the remote control plane Tunnel Endpoint Identifier (TEID).

**Values** 1 to 4294967295

### *local-control-teid teid*

Specifies the local control plane TEID.

**Values** 1 to 4294967295

### *detail*

Displays detailed information.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of GTP S11 session information.

### Output Example

```
Node# show subscriber-mgmt gtp s11 session
=====
GTP S11 sessions
=====
IMSI                : 001020000000001
APN                 : demo.mnc001.mcc001.gprs
-----
Peer router         : 10
Peer address        : 192.168.100.1
Remote control TEID : 1
Local control TEID  : 4293919008
PDN TEID            : 4293919008
Charging characteristics : (None)
Uplink AMBR (kbps)  : 10000
Downlink AMBR (kbps) : 20000
Ipoe-session SAP    : [pxc-1.b:1.8]
Ipoe-session Mac Address : 00:03:ff:f0:01:20
-----
No. of GTP S11 sessions: 1
=====
```

## session

### Syntax

**session** *session-name*

### Context

[\[Tree\]](#) (show>oam-pm>stats session)

### Full Context

show oam-pm statistics session

### Description

This command selects the session for the statistical display.

### Parameters

***session-name***

Specifies the session name, up to 32 characters.

### Platforms

All

## 21.52 session-filter

### session-filter

#### Syntax

**session-filter**

**session-filter** *session-filter-name*

#### Context

**[Tree]** (show>app-assure>group session-filter)

#### Full Context

show application-assurance group session-filter

#### Description

This command displays session filter information.

#### Parameters

***session-filter-name***

Specifies a session-filter-name up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the **session-filter** command information.

#### Output Example

```
show application-assurance group <aa-group-id>[:<partition>] session-filter <filter-
name>
# session-filter<filter-id>
=====
AA Session Filter
=====
Filter Name   : Block UDP Session Initiation
Applied      : Yes                               Def. Action   : Permit
Entries      : 1
Description  : Block UDP initiated towards subscribers
-----
Filter Match Criteria
-----
Entry        : 1
Description  : (Not Specified)
Protocol     : 17
Action       : deny
Hit Count    : 0 pkts
```

---

## 21.53 session-parameters

### session-parameters

#### Syntax

**session-parameters** [*family*] [**community** *community*]

**session-parameters** *peer-ip-address*

#### Context

[\[Tree\]](#) (show>router>ldp session-parameters)

#### Full Context

show router ldp session-parameters

#### Description

This command displays LDP peer information.

#### Parameters

##### ***peer-ip-address***

Specify the peer IP address.

##### ***family***

Displays either IPv4 or IPv6 active LDP information.

**Values**    ipv4, ipv6

##### ***community***

The string defining the LDP community assigned to the session. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters excluding double quotes. If the string contains spaces, use double quotes to delimit the start and end of the string.

#### Platforms

All

#### Output

[Table 484: LDP Session Parameters Output Fields](#) describes the LDP session-parameters output.

Table 484: LDP Session Parameters Output Fields

Label	Description
Peer	The IP address of the peer.
TTL security	Enabled — LDP peering sessions protected. Disabled — LDP peering sessions unprotected.
Min-TTL-Value	Displays the minimum TTL value for an incoming packet.
Auth	Enabled — Authentication using MD5 message based digest protocol is enabled. Disabled — No authentication is used.

**Output Example**

Example with community RED:

```
*A:SRU4# show router ldp session-parameters 10.20.1.1
=====
LDP IPv4 Session Parameters
=====
-----
Peer : 10.20.1.1
-----
DOD                : Disabled          Adv Adj Addr Only : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit          : 0                 Fec Limit Threshold: 90
Fec Limit Log Only : Disabled
Import Policies    : None              Export Policies     : None
IPv4 Prefix Fec Cap: Enabled           IPv6 Prefix Fec Cap: Disabled
P2MP Fec Cap       : Enabled
Address Export      : None
LSRID advertise    : Enabled
Community          : RED
=====
No. of IPv4 Peers: 1
=====
* indicates that the corresponding row element may have been truncated.
```

Example without community

```
*A:Dut-A# show router ldp session-parameters
=====
LDP IPv4 Session Parameters
=====
-----
Peer : 10.20.1.2
-----
DOD                : Disabled          Adv Adj Addr Only : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit          : 0                 Fec Limit Threshold: 90
```

```
Fec Limit Log Only : Disabled
Import Policies   : None
IPv4 Prefix Fec Cap: Enabled
P2MP Fec Cap     : Enabled
Address Export   : None
LSRID advertise  :
Community        :
-----
Peer : 10.20.1.3
-----
DOD               : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit        : 0
Fec Limit Log Only : Disabled
Import Policies   : None
IPv4 Prefix Fec Cap: Enabled
P2MP Fec Cap     : Enabled
Address Export   : None
LSRID advertise  :
Community        :
-----
Peer : 10.20.1.6
-----
DOD               : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit        : 0
Fec Limit Log Only : Disabled
Import Policies   : None
IPv4 Prefix Fec Cap: Enabled
P2MP Fec Cap     : Enabled
Address Export   : None
LSRID advertise  :
Community        :
=====
No. of IPv4 Peers: 3
=====
* indicates that the corresponding row element may have been truncated.
=====
LDP IPv6 Session Parameters
=====
-----
Peer : 3ffe::a14:102
-----
DOD               : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit        : 0
Fec Limit Log Only : Disabled
Import Policies   : None
IPv4 Prefix Fec Cap: Disabled
P2MP Fec Cap     : Enabled
Address Export   : None
LSRID advertise  :
Community        :
-----
Peer : 3ffe::a14:103
-----
DOD               : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit        : 0
Adv Adj Addr Only : Disabled
Fec Limit Threshold: 90
Export Policies   : None
IPv6 Prefix Fec Cap: Enabled
```



```
Fec Limit Log Only : Disabled
Import Policies    : None
IPv4 Prefix Fec Cap: Disabled
P2MP Fec Cap      : Enabled
Address Export    : None
LSRID advertise   :
Community         :
=====
No. of IPv6 Peers: 2
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-A#

*A:Dut-A# show router ldp session-parameters 3ffe::a14:103
=====
LDP IPv6 Session Parameters
=====
-----
Peer : 3ffe::a14:103
-----
DOD                : Disabled          Adv Adj Addr Only : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit          : 0                  Fec Limit Threshold: 90
Fec Limit Log Only: Disabled
Import Policies    : None               Export Policies    : None
IPv4 Prefix Fec Cap: Disabled           IPv6 Prefix Fec Cap: Enabled
P2MP Fec Cap       : Enabled
Address Export     : None
LSRID advertise    :
Community         :
=====
No. of IPv6 Peers: 1
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-A#

*A:Dut-A# show router ldp session-parameters ipv4
=====
LDP IPv4 Session Parameters
=====
-----
Peer : 10.20.1.2
-----
DOD                : Disabled          Adv Adj Addr Only : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit          : 0                  Fec Limit Threshold: 90
Fec Limit Log Only: Disabled
Import Policies    : None               Export Policies    : None
IPv4 Prefix Fec Cap: Enabled           IPv6 Prefix Fec Cap: Disabled
P2MP Fec Cap       : Enabled
Address Export     : None
LSRID advertise    :
Community         :
-----
Peer : 10.20.1.3
-----
DOD                : Disabled          Adv Adj Addr Only : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit          : 0                  Fec Limit Threshold: 90
Fec Limit Log Only: Disabled
Import Policies    : None               Export Policies    : None
```

```

IPv4 Prefix Fec Cap: Enabled          IPv6 Prefix Fec Cap: Disabled
P2MP Fec Cap      : Enabled
Address Export    : None
LSRID advertise   :
Community         :
-----
Peer : 10.20.1.6
-----
DOD                : Disabled          Adv Adj Addr Only : Disabled
FEC129 Cisco Inter*: Disabled
PE-ID MAC Flush In*: Disabled
Fec Limit          : 0                  Fec Limit Threshold: 90
Fec Limit Log Only: Disabled
Import Policies    : None              Export Policies     : None
IPv4 Prefix Fec Cap: Enabled          IPv6 Prefix Fec Cap: Enabled
P2MP Fec Cap      : Enabled
Address Export     : None
LSRID advertise    :
Community          :
=====
No. of IPV4 Peers: 3
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-A#
  
```

## 21.54 sessions

### sessions

#### Syntax

**sessions** [**group** *name*] **neighbor** *ip-address*] [**port** *port-number*] [**association**] [**statistics**]

#### Context

[\[Tree\]](#) (show>service>id>gsmp sessions)

#### Full Context

show service id gsmp sessions

#### Description

This command displays GSMP sessions information.

#### Parameters

##### group

A GSMP group defines a set of GSMP neighbors which have the same properties.

##### name

Specifies a GSMP group name is unique only within the scope of the service in which it is defined.

**ip-address**

Specifies the ip-address of the neighbor.

**port**

Specifies the neighbor TCP port number use for this ANCP session.

**Values** 0 to 65535

**association**

Displays to what object the ANCP-string is associated.

**statistics**

Displays statistics information about an ANCP session known to the system.

**Platforms**

All

**Output**

The following output is an example of GSMP sessions information.

**Output Example**

This show command gives information about the open TCP connections with DSLAMs.

```
A:active>show>service>id>gsmp# sessions
=====
GSMP sessions for service 999 (VPRN)
=====
Port   Ngbr-IPAddr   Gsmp-Group
-----
40590  192.168.1.2   dslam1
-----
Number of GSMP sessions : 1
=====
A:active>show>service>id>gsmp#

A:active>show>service>id>gsmp# sessions neighbor 192.168.1.2 port 40590
=====
GSMP sessions for service 999 (VPRN), neighbor 192.168.1.2, Port 40590
=====
State           : Established
Peer Instance   : 1                Sender Instance : a3cf58
Peer Port       : 0                Sender Port     : 0
Peer Name       : 12:12:12:12:12:12  Sender Name     : 00:00:00:00:00:00
timeouts       : 0                Max. Timeouts  : 3
Peer Timer      : 100             Sender Timer    : 100
Capabilities    : DTD OAM
Conf Capabilities : DTD OAM
Priority Marking : dscp nc2
Local Addr.     : 192.168.1.4
Conf Local Addr. : N/A
=====
A:active>show>service>id>gsmp#
A:active>show>service>id>gsmp# sessions neighbor 192.168.1.2 port 40590 association
=====
ANCP-Strings
=====
ANCP-String                               Assoc. State
-----
```

```

No ANCP-Strings found
=====
A:active>show>service>id>gsm#
A:active>show>service>id>gsm# sessions neighbor 192.168.1.2 port 40590 statistics
=====
GSMP session stats, service 999 (VPRN), neighbor 192.168.1.2, Port 40590
=====
Event                               Received  Transmitted
-----
Dropped                             0         0
Syn                                  1         1
Syn Ack                              1         1
Ack                                  14        14
Rst Ack                              0         0
Port Up                              0         0
Port Down                            0         0
OAM Loopback                         0         0
=====
A:active>show>service>id>gsm#
    
```

The following table describes service ID GSMP sessions output fields:

*Table 485: Service-ID GSMP Sessions Field Descriptions*

Label	Description
Port	The port ID number
Nbr-IpAddr	The neighbor IP address
Gsm#-Group	The GSMP group ID
State	The GSMP state of this TCP connection
Peer Instance	The unique GSMP ID for each end of the GSMP connection
Peer Port	The unique GSMP ID for each end of the GSMP connection
Peer Name	The unique GSMP ID for each end of the GSMP connection
timeouts	The number of successive timeouts for this session
Peer Timer	The GSMP keepalive timer
Capabilities	The ANCP capabilities negotiated for this session
Conf Capabilities	The ANCP capabilities configured for this session
Priority Marking	The priority marking configured for this session
Local Addr	The IP address used by the box's side of the TCP connection
Conf. Local Addr.	The configured IP address used by the box's side of the TCP connection
Sender Instance	The instance sent to the neighbor in this session

Label	Description
Sender Port	The port sent to the neighbor in this session
Sender Name	The name sent to the neighbor in this session
Max. Timeouts	The maximum number of successive timeouts configured for this session
Sender Timer	The timeout value that is announced toward the neighbor. The neighbor uses this timeout value while waiting for an acknowledgment from this system.



**Note:**

The association command gives an overview of each ANCP string received from this session.

```
A:active>show>service>id>gsm# sessions neighbor 192.168.1.2 port 40590 association
=====
ANCP-Strings
=====
ANCP-String                               Assoc.
State
-----
7330-ISAM-E47 atm 1/1/01/01:19425.64048    ANCP    Up
-----
Number of ANCP-Strings : 1
=====
A:active>show>service>id>gsm#
```

## sessions

### Syntax

**sessions** [**nat-group** *nat-group-id*] [**mda** *mda-id*] [**protocol** { **gre** | **icmp** | **icmp6** | **tcp** | **udp** | **unknown**}] [**inside-ip** *ip-prefix*[/ *ip-prefix-length*]] [**inside-router** *router-instance*] [**inside-port** *port-number*] [**outside-ip** *ipv4-address*] [**outside-port** *port-number*] [**foreign-ip** *ip-address*] [**foreign-port** *port-number*] [**dslite-address** *ipv6-address*] [**wlan-gw-ue** *ieee-address*] [**next-index** *index*] [**upnp**] [**member** *member-id*] [**nat-policy** *policy-name*] [**dest-ip** *ip-address*] [**firewall-policy** *policy-name*] [**address-type** *addr-type*] [**I2-aware-subscriber** *sub-ident*]

### Context

[\[Tree\]](#) (tools>dump>nat sessions)

### Full Context

tools dump nat sessions

### Description

This command dumps ISA sessions.

## Parameters

### **icmp**

Specifies to dump only ICMP information.

### **ieee-address**

Specifies a MAC address, using the format xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx.

### **ip-address**

Specifies an IPv4 or IPv6 address.

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (in hexadecimal)  
d — 0 to 255 (in decimal)

### **ipv4-address**

Specifies an IPv4 address.

**Values** a.b.c.d

### **ipv6-address**

Specifies an IPv6 address.

**Values** x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (in hexadecimal)  
d — 0 to 255 (in decimal)

### **mda-id**

Specifies an MDA ID.

**Values** *slot/mda*

### **nat-group-id**

Specifies a NAT group ID.

**Values** 1 to 4

### **policy-name**

Specifies a policy name, up to 32 characters maximum.

### **port-number**

Specifies a port number.

**Values** 0 to 65535

### **router-instance**

Specifies a router name or service ID.

**tcp**

Specifies to dump only TCP information.

**udp**

Specifies to dump only UDP information.

**upnp**

Specifies to dump only UPNP information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of this command.

**Output Example**

```
*A:SR12_PPP0E# tools dump nat sessions
=====
Matched 2 sessions on Slot #3 MDA #1
=====
Owner           : LSN-Host@10.2.3.4
Router          : 100
FlowType        : UDP PortFwd
Inside IP Addr  : 10.2.3.4           Inside Port      : 666
Outside IP Addr : 10.0.0.6           Outside Port     : 666
Foreign IP Addr : *                   Foreign Port     : *
Dest IP Addr    : *                   Dest Port       : *
-----
Owner           : LSN-Host@10.2.3.4
Router          : 100
FlowType        : TCP PortFwd
Inside IP Addr  : 10.2.3.4           Inside Port      : 666
Outside IP Addr : 10.0.0.6           Outside Port     : 666
Foreign IP Addr : *                   Foreign Port     : *
Dest IP Addr    : *                   Dest Port       : *
-----
=====
Matched 1 session on Slot #3 MDA #2
=====
Owner           : LSN-Host@2001:db8:470:1f00:ffff:189
Router          : 100
FlowType        : TCP                Timeout (sec)    : 6769
Inside IP Addr  : 192.168.16.218      Inside Port      : 41555
Outside IP Addr : 10.0.0.5           Outside Port     : 1529
Foreign IP Addr : 10.0.0.1           Foreign Port     : 22
Dest IP Addr    : 10.0.0.1           Dest Port       : 22
-----
=====
*A:SR12_PPP0E#
```

## sessions

### Syntax

```
sessions [test-family {ethernet | ip | mpls}]  
sessions [test-family {ethernet | ip | mpls}] detectable-rx-errors  
sessions [test-family {ethernet | ip | mpls}] detectable-tx-errors  
sessions [test-family {ethernet | ip | mpls}] event-mon  
sessions [test-family {ethernet | ip | mpls}] streaming delay
```

### Context

[\[Tree\]](#) (show>oam-pm sessions)

### Full Context

```
show oam-pm sessions
```

### Description

This command shows a summary of the OAM Performance Monitoring sessions.

### Parameters

#### test-family

Shows all sessions that match the specified test family type when an optional filter is included.

#### ethernet

Specifies Ethernet session types.

#### ip

Specifies IP session types.

#### mpls

Specifies MPLS session types.

#### event-mon

Specifies a summary of all event monitoring and current state for each session.

#### detectable-rx-errors

Specifies to display all MPLS sessions with a reported non-successful return code. The results of all return codes, other than "success", are included. When a return code is not available it is reported as "none". Sessions with a successful return code are filtered and not displayed in the list. This is specific to **test-family mpls** only.

#### detectable-tx-errors

Specifies to provide a summary of tests with detectable transmission errors that prevent the test from sending packets. Not all errors are detectable.

#### streaming delay

Displays all sessions with an assigned delay template.



## Platforms

All

## Output

The following output is an example of OAM-PM session summary information.

### Output Example

```

show oam-pm sessions
=====
OAM Performance Monitoring Session Summary for the Ethernet Test Family
=====
Session                               State   Bin Group  Sess Type  Test Types
-----
vpls1000-PM-AL5-1/1/9:1000.1000      Act     2          proactive  DMM      SLM
vpls1000-PM-YL4-1/1/9:1000.1000      Act     3          proactive  DMM      SLM
=====

OAM Performance Monitoring Session Summary for the IP Test Family
=====
Session                               State   Bin Group  Sess Type  Test Types
-----
=====

OAM Performance Monitoring Session Summary for the MPLS Test Family
=====
Session                               State   Bin Group  Sess Type  Test Types
-----
mpls-dm-static-31-28                  Act     2          proactive  DM
mpls-dm-rsvp-31-to-28                 Act     2          proactive  DM
mpls-dm-rsvp-auto-31-to-28           Act     2          proactive  DM
=====

show oam-pm sessions event-mon
=====
OAM Performance Monitoring Event Summary for the Ethernet Test Family
=====
Event Monitoring Table Legend:
F = Forward, B = Backward, R = Round Trip, A = Aggregate,
- = Threshold Not Config, c = Threshold Config, * = TCA Active, P = Pending
=====
Session                               Test   FD FDR IFDV FLR CHLI HLI UNAV UDAV UDUN
Type   FBR FBR  FBR  FB  FBA FBA  FBA  FBA  FBA
-----
vpls1000-PM-AL5-1/1/9:1000.1000      DMM    - - - - -
vpls1000-PM-AL5-1/1/9:1000.1000      SLM    - - - - -
vpls1000-PM-YL4-1/1/9:1000.1000      DMM   --c - - - -
vpls1000-PM-YL4-1/1/9:1000.1000      SLM    - - - - -
=====

OAM Performance Monitoring Event Summary for the IP Test Family
=====
Event Monitoring Table Legend:
F = Forward, B = Backward, R = Round Trip, A = Aggregate,
- = Threshold Not Config, c = Threshold Config, * = TCA Active, P = Pending
=====
Session                               Test   FD FDR IFDV FLR CHLI HLI UNAV UDAV UDUN
Type   FBR FBR  FBR  FB  FBA FBA  FBA  FBA  FBA
-----
=====
    
```

```
show oam-pm sessions detectable-rx-errors
=====
OAM Performance Monitoring Receive Error Summary: MPLS Test Family
=====
```

Session	Test Type	MPLS DM Receive Status
S0	DM	unexpected MPLS test Rx status code
S2	DM	Notify: Data Format Invalid
S3	DM	Notify: Initialization in Progress
S4	DM	Notify: Data Reset Occurred
S5	DM	Notify: Resource Temporarily Unavail
S6	DM	unexpected MPLS test Rx status code
S16	DM	Error: Unspecified Error
S17	DM	Error: Unsupported Version
S18	DM	Error: Unsupported Control Code
S19	DM	Error: Unsupported Data Format
S20	DM	Error: Authentication Failure
S21	DM	Error: Invalid Destination Node Id
S22	DM	Error: Connection Mismatch
S23	DM	Error: Unsupported Mand TLV Object
S24	DM	Error: Unsupported Query Interval
S25	DM	Error: Administrative Block
S26	DM	Error: Resource Unavailable
S27	DM	Error: Resource Released
S28	DM	Error: Invalid Message
S29	DM	Error: Protocol Error
S30	DM	unexpected MPLS test Rx status code
S256	DM	none
S257	DM	Error: Timeout
S258	DM	unexpected MPLS test Rx status code

```
show oam-pm sessions detectable-tx-errors
=====
OAM Performance Monitoring Transmit Error Summary: Ethernet Test Family
=====
```

Session	Test Type	Detectable Transmit Error
vpls1000-PM-YL4-1/1/9:1000.1000	DMM	MEP is administratively down
vpls1000-PM-YL4-1/1/9:1000.1000	SLM	MEP is administratively down

```
=====
OAM Performance Monitoring Transmit Error Summary: IP Test Family
=====
```

Session	Test Type	Detectable Transmit Error
---------	-----------	---------------------------

```
show oam-pm sessions streaming delay
=====
OAM-PM Streaming Delay Summary for the Ethernet Test Family
=====
```

Session	Test Type	Test State	Str Template	Admin
eth-circuit-service-epipe1	DMM	Inact		Up

```

=====
OAM-PM Streaming Delay Summary for the IP Test Family
=====
Session                Test Type  Test State  Str Template Admin
-----
ip-lpb111-SR-TE-LSP    TWL        Act         Up
ip-circuit-service-vprn2  TWL        Act         Up
ip-rtr-telemetry-streaming TWL        Act         Up
=====

OAM-PM Streaming Delay Summary for the MPLS Test Family
=====
Session                Test Type  Test State  Str Template Admin
-----
mpls-dm-rsvp-PE-2-PE-1  DM         Act         Up
mpls-dm-static-PE-2-PE-1 DM         Act         Up
mpls-dm-rsvp-PE-2-PE-1-hop1 DM         Act         Up
mpls-dm-rsvp-auto-PE-2-PE-1 DM         Act         Template Not Found
=====
    
```

## 21.55 set-epoch-value

### set-epoch-value

#### Syntax

**set-epoch-value** *value*

#### Context

[\[Tree\]](#) (tools>perform>router>pcp-server set-epoch-value)

#### Full Context

tools perform router pcp-server set-epoch-value

#### Description

This command sets the epoch value for a specified PCP server.

#### Parameters

**value**

Specifies the epoch value.

**Values** 0 to 4294967295

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 21.56 set-fabric-speed

### set-fabric-speed

#### Syntax

**set-fabric-speed** *fabric-speed*

#### Context

[\[Tree\]](#) (tools>perform>system set-fabric-speed)

#### Full Context

tools perform system set-fabric-speed

#### Description

This command configures the fabric speed. This command is necessary to define the mode of operation for the system.

#### Default

set-fabric-speed none (for the 7750 SR-7s/14s FP4 and 7950 XRS systems)

set-fabric-speed fabric-speed-d (or the 7750 SR-7s/14s FP5 systems)

set-fabric-speed fabric-speed-a (for the other 7750 SR and 7450 ESS systems)

#### Parameters

##### *fabric-speed*

Specifies the fabric speed of the system.

**Values** fabric-speed-a — Sets the chassis to operate at the following speeds using N+1 switch fabric redundancy:

- up to 100 Gb/s per slot for the 7450 ESS-7/12 and the 7750 SR-7/12
- up to 200 Gb/s per slot for the 7750 SR-12e

This permits a mixture of FP2- and FP3-based cards to co-exist.

fabric-speed-b — Sets the chassis to operate at the following speeds using N+1 switch fabric redundancy:

- up to 200 Gb/s per slot for the 7450 ESS-7/12 and the 7750 SR-7/12
- up to 400 Gb/s per slot for the 7750 SR-12e

All cards in the system are required to be FP3-based (FP3 IMM or newer). The system does not support any FP2-based cards when the chassis is set to **fabric-speed-b**.

**fabric-speed-c** — Sets the use of both FP3- and FP4-based cards and is compatible with SFM6 for the 7750 SR-7/12/12e and 7450 ESS-7/12. This speed is mandatory if FP4 cards are used. The performance of FP3 cards is the same as **fabric-speed-b**. For the 7950 XRS 20/20e this parameter enables the use of both FP3- and FP4-based cards and is compatible with **sfm2-x20s**. The performance of FP3 cards is the same as the **none** parameter.

**fabric-speed-d** — Sets the use of FP4- and FP5-based cards and is compatible with **sfm2-s** for the 7750 SR-7s and 7750 SR-14s. This speed is mandatory if FP5 cards are used.

**none** — For a 7950 XRS-20/20e, enables use of only FP3 cards. For 7750 SR-7s/14s, enables the use of only FP4 cards.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## 21.57 set-role

### set-role

#### Syntax

```
set-role {extension | master | standalone}
```

#### Context

[\[Tree\]](#) (tools>perform>chassis set-role)

#### Full Context

```
tools perform chassis set-role
```

#### Description

This command sets the role of the 7950 XRS chassis from which the command is invoked.

- When run on a standalone chassis this will update the EEPROM on the (one) Chassis backplane.
- Master and Extension chassis are blocked if any SFMs are configured as type **sfm-x20** (must be **sfm-x20-b**). The following message displays:
- When the **extension** option is specified, the chassis will immediately reboot as part of the command. The following warning and prompt will be provided:

```
WARNING: You are about to provision the chassis as an XRS-40 Extension chassis.
This chassis will immediately reboot after the command is executed. No CLI shell is
available directly on an Extension chassis. An Extension chassis will not completely
boot up unless it is properly cabled to and controlled by an XRS-40 Master
chassis. Do you wish to proceed (yes/no) ?
```

- When the **master** option is specified, the chassis will immediately reboot as part of the command. The Operational mode is not changed until a reboot is performed. The following warning and prompt will be provided:

```
WARNING: You are about to provision the chassis as an XRS-40 Master chassis. This chassis will immediately reboot after the command is execute
```

```
Do you wish to proceed (yes/no) ?
```

- When the **master** or **extension** options are specified and the chassis has any SFM slots with a configured type of `sfm-x20`, then the command will fail with the following message:

```
Configured sfm-type of sfm-x20 is not compatible with XRS-40 mode operation.
```

If you want to change the role of the chassis anyways, you can deconfigure the SFMs and then change the role.

### Platforms

7950 XRS

## 21.58 set-trim-mode

### set-trim-mode

#### Syntax

```
set-trim-mode set-trim-mode
```

#### Context

[\[Tree\]](#) (tools>perform>system set-trim-mode)

#### Full Context

```
tools perform system set-trim-mode
```

#### Description

This command should only be used with authorized direction of Nokia technical support.

#### Parameters

**set-trim-mode**

Specifies the trim operating mode for the system.

**Values** trim-mode-a, trim-mode-b

#### Platforms

7450 ESS, 7750 SR-7/12/12e

## 21.59 sflow

### sflow

#### Syntax

sflow

#### Context

[\[Tree\]](#) (show sflow)

#### Full Context

show sflow

#### Description

This command displays the primary and backup receiver statistics, the mapping configuration and a summary of how many ports and SAPs have sFlow enabled.

#### Platforms

7750 SR, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of sFlow information. [Table 486: Show sFlow Output Fields](#) describes the show sFlow output fields.

#### Output Example

```
*B:bkvm10# show sflow
=====
sFlow Status
=====
Receiver           : pat
Max Data Size      : 312

IP Addr Primary    : 10.120.142.163:6343
Packets Sent       : 2572
Packet Errors      : 2
Last Packet Sent   : 07/08/2014 22:23:57nt

IP Addr Backup     : N/A
Packets Sent       : 0
Packet Errors      : 0
Last Packet Sent   : No Pkts sent
-----
Counter Pollers
-----
Port               No. of SAPs
-----
1/1/2              3
1/2/1              0
-----
```

```

No. of sFlow counter pollers: 2
-----
Counter Mappings
-----
Direction      Policer/Queue  Traffic Type
-----
egress         queue 1        unicast
egress         queue 5        multicast
egress         queue 8        broadcast
ingress        policer 1      unicast
ingress        policer 6      multicast
ingress        policer 12     broadcast
-----
No. of sFlow counter mappings: 6
=====
    
```

Table 486: Show sFlow Output Fields

Label	Description
<b>sFlow Status</b>	
Receiver	Displays the configured name for the sFlow receiver.
Max Data Size	The configured maximum data size for sFlow UDP packets.
IP Addr Primary	The primary IP address and destination port for sFlow receiver.
IP Addr Backup	The backup IP address and destination port for sFlow receiver.
Packets Sent	The number of packets sent successfully to the primary or backup receiver destination, since the destination was configured, CPM card HA switchover, or system reboot.
Packet Errors	The number of packets that could not be sent to the primary or backup receiver destination because of an error, since the destination was configured, CPM card HA switchover, or system reboot. An example of an error is destination IP not reachable.
Last Packet Sent	Displays the date and time of the last packet sent.
<b>Counter Pollers</b>	
Port	Displays the port on which sFlow is enabled.
No. of SAPs	The number of SAPs on the port with sFlow enabled.
No. of sFlow counter pollers	The number of sFlow counter pollers.
<b>Counter Mappings</b>	



Label	Description
Direction	Displays the direction of traffic (ingress or egress) the map entry applies to.
Policer/Queue	Displays the policer or queue instance being mapped by sFlow map.
Traffic type	Displays the type of sFlow traffic statistics (unicast, multicast or broadcast) that the policer/queue maps to.
No. of sFlow counter mappings	The number of entries in the sFlow ingress and egress counter map.

## 21.60 sfm

### sfm

#### Syntax

**sfm** *sfm-name* [**force**]

#### Context

[\[Tree\]](#) (clear sfm)

#### Full Context

clear sfm

#### Description

This command resets the SFM.

#### Parameters

##### *sfm-name*

Specifies the SFM identifier.

**Values** 1 to 16 (7950 XRS)  
1 to 8 (7750-SR-14s)  
1, 2 (all other platforms)

##### *force*

Performs the reset without a confirmation prompt.

#### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## sfm

### Syntax

**sfm** [*sfm-name*] [**detail**]

**sfm** [*sfm-name*] **icport** [**down**] [**degraded**]

### Context

[\[Tree\]](#) (show sfm)

### Full Context

show sfm

### Description

This command displays SFM status information.

### Parameters

#### **sfm-name**

Specifies the SFM identifier.

**Values** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16

#### **icport**

Displays interconnect port information.

#### **down**

Displays interconnect ports that are not operational.

#### **degraded**

Displays interconnect ports that are associated with fabric degradation.

#### **detail**

Displays detailed information about the SFM.

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s, 7950 XRS

### Output

See the following output examples:

- [Output Example: show sfm](#)
- [Output Example: show sfm <sfm-id> detail](#)
- [Output Example: show sfm icport](#)
- [Output Fields: show sfm](#)

#### **Output Example: show sfm**

```
A:7950 XRS-20# show sfm
```

```
=====
SFM Summary
=====
```

Slot	Provisioned Type Equipped Type (if different)	Admin State	Operational State	Comments
1	sfm-x20	up	up	
2	sfm-x20	up	up	
3	sfm-x20	up	up	
4	sfm-x20	up	up	
5	sfm-x20	up	up	
6	(not provisioned) sfm-x20	up	unprovisioned	
7	(not provisioned) sfm-x20	up	unprovisioned	
8	(not provisioned) sfm-x20	up	unprovisioned	

```
=====
```

**Output Example: show sfm <sfm-id> detail**

```
A:7950 XRS-20# show sfm 2 detail
=====
Fabric 2
=====
```

Slot	Provisioned Type Equipped Type (if different)	Admin State	Operational State	Comments
2	(not provisioned) sfm-x20	up	unprovisioned	

```
-----
Hardware Data
Part number           : xx
CLEI code             : xx
Serial number         : xx
Manufacture date     : xx
Manufacturing string  : xx
Manufacturing deviations : xx
Manufacturing assembly number : xx
Administrative state  : up
Operational state     : unprovisioned
Time of last boot     : N/A
Current alarm state   : alarm cleared
=====

Inter Chassis SFM Interconnect
SFM Interconnect Port 1
oper state : no-link
Misconnect Info : Fabric 3 IcPort 14
SFF Status : not-equipped
fabric degrade state : none
```

**Output Example: show sfm icport**

```
*A:myNode# show sfm icport
=====
SFM Interconnect Port Summary
=====
```

SFMSFM	IcPort	IcPort	Module	Degrade	Miscon.	Info
Oper State	Num	Oper State	Inserted State	SFM	IcPort	
1	unprovisioned	1	up	yes	none	
1	unprovisioned	2	invalid-conne*	no	degraded	3 14

```

2 up 2 indeterminate no none
2 up 3 up no degraded
2 up 5 no-link no none
2 up 14 indeterminate yes degraded
=====
* indicates that the corresponding row element may have been truncated.
=====

*A:myNode# show sfm icport down
=====
SFM Interconnect Port Summary
=====
SFM SFM IcPortIcPortModuleDegradeMiscon. Info
Oper StateNumOper StateInsertedStateSFMicPort
-----
1 unprovisioned 2invalid-conne*nodegraded 3 14
2 up 2indeterminatenonone
2 up5no-linknonone
2 up14indeterminateyesdegraded
=====
* indicates that the corresponding row element may have been truncated.

*A:myNode# show sfm icport degraded
=====
SFM Interconnect Port Summary
=====
SFM SFMicPortIcPortModuleDegradeMiscon. Info
Oper StateNumOper StateInserted State SFM IcPort
-----
2 up 3 up no degraded
2 up 14 indeterminate yes degraded
=====
    
```

**Output Fields: show sfm**

Table 487: Output Fields: show sfm describes output fields for the **show sfm** command.

Table 487: Output Fields: show sfm

Label	Description
Slot	The number of the slot in which the SFM is installed.
Provisioned Type Equipped Type (if different)	The SFM type provisioned.
Admin State	The administrative state.
Operational State	The operational state.
<b>Hardware Data</b>	
Part number	The SFM part number.
CLEI code	The SFM CLEI code.
Serial number	The SFM serial number.
Manufacture date	The date the SFM was manufactured.

Label	Description
Manufacturing deviations	Specifies any manufacturing deviations.
Manufacturing assembly number	The SFM assembly number.
Administrative state	Specifies the administrative state of the SFM.
Operational state	Specifies the operational state of the SFM.
Time of last boot	Indicates the time stamp of the last system restart.
Current alarm state	Indicates the current alarm state.
<b>Inter Chassis SFM Interconnect</b>	
SFM Interconnect Port	Port number of the interconnect port.
oper state	Up — The SFM is administratively up. Down — The SFM is administratively down.
Misconnect Info	Only displayed if the oper state is <b>invalid-connection</b> .
SFF Status	The SFF status
fabric degrade state	Indicates state.

## 21.61 sfm-interco-test

### sfm-interco-test

#### Syntax

**sfm-interco-test** [sfm x]

#### Context

[\[Tree\]](#) (tools>perform>system>inter-chassis sfm-interco-test)

#### Full Context

tools perform system inter-chassis sfm-interco-test

#### Description

Use this command to run inter-chassis SFM loopback tests for the 7950 XRS.

Run on an out-of-service standalone chassis that will later become the Extension chassis of an XRS-40 system. The out of service chassis (Chassis 1 – future Master chassis) must be connected by means of SFM interconnect links (cable bundles) before this test is run. This test operates without requiring any XCMs in either chassis, but they can be present.

The test should not be initiated from Chassis 1.

The following conditions must be satisfied for the test to be permitted:

- The system must be in standalone mode; error message:

```
The test can only be performed on a standalone system
```

- The system must have only XRS-40 compatible SFMs provisioned; error message:

```
The chassis can not have SFMs with a configured type of sfm-x20s-b  
when performing the test
```

- All provisioned SFMs must be operational; error message:

```
All provisioned SFMs must be operational before performing the test
```

- The same test cannot be running in another session (that is, only one test can be executed at a time); error message:

```
The test is already in-progress in another session
```

Other notes (which are also relayed to the operator when the test is attempted):

- All provisioned XCMs will be reset at the start of the test and will be held in the *booting* state until the test has completed.
- All SFMs will be cleared when the operator exits the test. This will trigger a reset of the XCMs and the standby CPM.

## Platforms

7950 XRS

## Output

The following output is an example of SFM interconnection test information.

### Output Example

```
*A:Dut-A# tools perform system inter-chassis sfm-interco-test  
WARNING: This test is intended for an out-of-service standalone chassis that is  
going to later become the extension chassis of an XRS-40 system.  
  
At the start of the test, all provisioned IOMs will be reset and will be held  
in the 'booting' state until the test has completed.  
  
While the test is running avoid altering this system or the attached system  
(e.g. do not shutdown, clear, or remove the CPMs/SFMs/IOMs and do not issue  
CPM switchovers)  
  
Once testing has completed all SFMs in this system will be cleared.  
  
Do you wish to proceed (y/n)? y  
Clearing provisioned IOMs ...  
Test executing ...  
Displaying results
```

```

=====
SFM Interconnect Port Summary
=====
SFM      SFM      IcPort  IcPort  Module  Degrade  Miscon Info
Oper State Num   Oper State  Inserted State   SFM  IcPort
-----
1        up        1        up        yes     none
1        up        2        up        yes     none
1        up        3        up        yes     none
1        up        4        up        yes     none
1        up        5        up        yes     none
1        up        6        up        yes     none
1        up        7        up        yes     none
1        up        8        up        yes     none
1        up        9        up        yes     none
1        up       10       up        yes     none
1        up       11       up        yes     none
1        up       12       up        yes     none
1        up       13       up        yes     none
1        up       14       up        yes     none
2        up        1        up        yes     none
2        up        2        up        yes     none
2        up        3        up        yes     none
2        up        4        up        yes     none
2        up        5        up        yes     none
2        up        6        up        yes     none
2        up        7        up        yes     none
2        up        8        up        yes     none
2        up        9        up        yes     none
2        up       10       up        yes     none
2        up       11       up        yes     none
2        up       12       up        yes     none
2        up       13       up        yes     none
2        up       14       up        yes     none
3        up        1        up        yes     none
3        up        2        up        yes     none
3        up        3        up        yes     none
3        up        4        up        yes     none
3        up        5        up        yes     none
3        up        6        up        yes     none
3        up        7        up        yes     none
3        up        8        up        yes     none
3        up        9        up        yes     none
3        up       10       up        yes     none
3        up       11       up        yes     none
3        up       12       up        yes     none
3        up       13       up        yes     none
3        up       14       up        yes     none
4        up        1        up        yes     none
4        up        2        up        yes     none
4        up        3        up        yes     none
4        up        4        up        yes     none
4        up        5        up        yes     none
4        up        6        up        yes     none
4        up        7        up        yes     none
4        up        8        up        yes     none
4        up        9        up        yes     none
4        up       10       up        yes     none
4        up       11       up        yes     none
4        up       12       up        yes     none
4        up       13       up        yes     none
4        up       14       up        yes     none
5        up        1        up        yes     none
    
```

```
5 up 2 up yes none
5 up 3 up yes none
5 up 4 up yes none
5 up 5 up yes none
5 up 6 up yes none
5 up 7 up yes none
5 up 8 up yes none
5 up 9 up yes none
5 up 10 up yes none
5 up 11 up yes none
5 up 12 up yes none
5 up 13 up yes none
5 up 14 up yes none
6 up 1 up yes none
6 up 2 up yes none
6 up 3 up yes none
6 up 4 up yes none
6 up 5 up yes none
6 up 6 up yes none
6 up 7 up yes none
6 up 8 up yes none
6 up 9 up yes none
6 up 10 up yes none
6 up 11 up yes none
6 up 12 up yes none
6 up 13 up yes none
6 up 14 up yes none
7 up 1 up yes none
7 up 2 up yes none
7 up 3 up yes none
7 up 4 up yes none
7 up 5 up yes none
7 up 6 up yes none
7 up 7 up yes none
7 up 8 up yes none
7 up 9 up yes none
7 up 10 up yes none
7 up 11 up yes none
7 up 12 up yes none
7 up 13 up yes none
7 up 14 up yes none
8 up 1 up yes none
8 up 2 up yes none
8 up 3 up yes none
8 up 4 up yes none
8 up 5 up yes none
8 up 6 up yes none
8 up 7 up yes none
8 up 8 up yes none
8 up 9 up yes none
8 up 10 up yes none
8 up 11 up yes none
8 up 12 up yes none
8 up 13 up yes none
8 up 14 up yes none
```

```
=====
Correct any mis-cabling and replace any suspected faulty equipment. Press Q to
quit the test or any other key to run the test again. q
Test complete, clearing the SFMs to return them to normal operational state.
Done. Exiting test.
```



## 21.62 sgt-qos

sgt-qos

### Syntax

**sgt-qos**

### Context

[\[Tree\]](#) (show>router sgt-qos)

### Full Context

show router sgt-qos

### Description

This command displays QoS information for self-generated traffic. In the output, "none" means that the default values for each application are used, not that there is no value set. For a list of application defaults, refer to "QoS for Self-Generated (CPU) Traffic on Network Interfaces" in the *7450 ESS, 7750 SR, 7950 XRS, and VSR Quality of Service Guide*.

### Platforms

All

## 21.63 sham-link

sham-link

### Syntax

**sham-link** [*interface-name*] [**detail**]

**sham-link** *interface-name* **remote** *ip-address* [**detail**]

### Context

[\[Tree\]](#) (show>router>ospf sham-link)

### Full Context

show router ospf sham-link

### Description

This command displays OSPFv2 sham-link neighbor information.

## Parameters

### *interface-name*

Displays only the sham link identified by this interface name, up to 32 characters.

### *remote*

Displays sham-link information for the sham link identified by the specified remote IP address.

### *ip-address*

Displays only the sham link identified by this IP address.

## Platforms

All

## Output

The following output is an example of OSPFv2 sham-link neighbor information and [Table 488: Sham Links Output Fields](#) describes the output fields.

### Output Example

```
show router 1 ospf sham-link detail
=====
Rtr vprn1 OSPFv2 Instance 0 Sham-Links (detail)
=====
-----
Interface: myshamif1 Remote Nbr: 50.0.1.2
-----
Local IP Address : 50.0.1.1
Area Id          : 0.0.0.0
Admin Status     : Enabled
Transit Delay    : 1 sec
Hello Intrvl     : 1 sec
Cfg Metric       : 10
If Events        : 1
Tot Rx Packets   : 0
Rx Hellos        : 0
Rx DBDs          : 0
Rx LSRs          : 0
Rx LSUs          : 0
Rx LS Acks       : 0
Discards         : 0
Last Enabled     : 08/12/2021 13:09:05
Oper State       : Point To Point
Retrans Intrvl   : 5 sec
Rtr Dead Intrvl  : 3 sec
Auth Type        : None
Tot Tx Packets   : 32
Tx Hellos        : 32
Tx DBDs          : 0
Tx LSRs          : 0
Tx LSUs          : 0
Tx LS Acks       : 0
Tx Failures      : 0
Retransmits      : 0
Bad Networks     : 0
Bad Areas        : 0
Bad Auth Types   : 0
Bad Neighbors    : 0
Bad Lengths      : 0
Bad Dead Int.    : 0
Bad Versions     : 0
Bad Dest Adrs    : 0
Auth Failures    : 0
Bad Pkt Types    : 0
Bad Hello Int.   : 0
Bad Options      : 0
Bad Checksums    : 0
=====
```

Table 488: Sham Links Output Fields

Label	Description
If Name	IP interface name

Label	Description
Nbr IP	IP address of the neighbor
Metric	The metric associated with the interface
Adm	The administrative state of the interface
Oper	The operational state of the interface
No. of OSPF Sham-links	Number of sham links configured
Tx Failures	Transmitted OSPF packets that are dropped due to resource shortage

## 21.64 sham-link-neighbor

### sham-link-neighbor

#### Syntax

**sham-link-neighbor** [**detail**]

**sham-link-neighbor** *interface-name* **remote** *ip-address* [**detail**]

#### Context

[\[Tree\]](#) (show>router>ospf sham-link-neighbor)

#### Full Context

show router ospf sham-link-neighbor

#### Description

This command displays OSPFv2 sham-link neighbor information.

#### Parameters

##### ***interface-name***

Displays only the sham-link neighbor identified by this interface name, up to 32 characters.

##### **remote**

Displays sham-link neighbor information for the neighbor identified by the specified remote IP address.

##### ***ip-address***

Displays only the sham-link neighbor identified by this IP address.

## Platforms

All

## 21.65 shared-queue

### shared-queue

#### Syntax

**shared-queue** [*shared-queue-policy-name*] [**detail**]

#### Context

[\[Tree\]](#) (show>qos shared-queue)

#### Full Context

show qos shared-queue

#### Description

This command displays shared-queue policy information.

#### Parameters

***shared-queue-policy-name***

The shared-queue policy name.

**detail**

Displays detailed information about the shared-queue policy.

#### Platforms

All

#### Output

The following output is an example of shared-queue QoS policy information, and [Table 489: Show QoS Shared Queue Output Fields](#) describes shared-queue QoS policy output fields.

#### Output Example

```
*A:PE# show qos shared-queue

=====
Shared Queue Policies
=====
Policy-Id          Description
-----
default            Default Shared Queue Policy
policer-output-queues  Default Policer Output Shared Queue Policy
egress-pbr-ingress-queues  Egress PBR Ingress Shared Queue Policy
=====
```

\*A:PE#

Table 489: Show QoS Shared Queue Output Fields

Label	Description
Policy	The ID that uniquely identifies the policy.
Description	A text string that helps identify the policy context in the configuration file.

## 21.66 shcv-policy

### shcv-policy

#### Syntax

**shcv-policy** [*policy-name*]

#### Context

[\[Tree\]](#) (show>subscr-mgmt shcv-policy)

#### Full Context

show subscriber-mgmt shcv-policy

#### Description

This command displays the SHCV policy parameters.

#### Parameters

***policy-name***

Specifies the SHCV policy name, up to 32 characters.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of SHCV policy information. [Table 490: SHCV Policy Field Descriptions](#) describes the output fields.

#### Output Example

```
# show subscriber-mgmt shcv-policy "shcv-1"
=====
SHCV policy "shcv-1"
=====
Description                : (Not Specified)
```

```

Last management change      : 09/27/2021 09:50:58
VPLS
IPv4 source address        : (Not Specified)
Source MAC address         : (Not Specified)
Layer 3
Source IP address origin    : interface
Unnumbered source IP address: (Not Specified)
Periodic
Administrative state       : enabled
Action                     : alarm
Interval (minutes)        : 30
Retry count                : 2
Retry timeout (s)         : 10
-----
Triggered
-----
ip-conflict
Administrative state       : enabled
Retry count               : 1
Retry timeout (s)         : 1
host-limit-exceeded
Administrative state       : enabled
Retry count               : 1
Retry timeout (s)         : 1
inactivity
Administrative state       : enabled
Retry count               : 2
Retry timeout (s)         : 10
mobility
Administrative state       : enabled
Retry count               : 1
Retry timeout (s)         : 1
mac-learning
Administrative state       : enabled
Retry count               : 2
Retry timeout (s)         : 10
=====
    
```

Table 490: SHCV Policy Field Descriptions

Label	Description
Description	Displays the SHCV policy description
Last management change	Displays the date and time when the policy was last changed
<b>VPLS</b>	SHCV parameters applicable for VPLS services
IPv4 source address	Displays the IPv4 source address (sender IP address) used in SHCV ARP requests sent to host addresses learned using DHCP snooping in a VPLS service
Source MAC address	Displays the source MAC address used in SHCV ARP requests sent to host addresses learned using DHCP snooping in a VPLS service
<b>Layer 3</b>	SHCV parameters applicable for Layer 3 services
Source IP address origin	Displays the source IP address origin:

Label	Description
	<ul style="list-style-type: none"> <li>interface = use the interface MAC and IP address as source addresses for SHCV ARP requests on regular IES or VPRN interfaces</li> <li>vrrp = use the VRRP MAC and IP address as source addresses for SHCV ARP requests on regular IES or VPRN interfaces when in SRRP master state</li> </ul>
Unnumbered source IP address	Displays the IPv4 source address (sender IP address) used in SHCV ARP requests for unnumbered hosts
<b>Periodic</b>	SHCV parameters applicable for periodic and OAM checks
Administrative state	Displays the administrative state for periodic and OAM checks (enabled, disabled)
Action	Displays the action for unsuccessful checks: <ul style="list-style-type: none"> <li>alarm = raise an event</li> <li>remove = raise an event and delete the subscriber host from the system</li> </ul>
Interval (minutes)	Displays the interval between subsequent periodic checks
Retry count	Displays the number of SHCV check retries when no response is received within the retry timeout interval
Retry timeout (s)	Displays the time to wait for an SHCV check response before the next retry or execution of the SHCV unsuccessful check action
<b>Triggered</b>	SHCV parameters applicable for triggered checks
<i>ip-conflict</i>	SHCV parameters applicable for checks triggered by an IP conflict: a new host with different MAC address and same IP address as an existing host active on the same SAP
Administrative state	Displays the administrative state for ip-conflict triggered checks (enabled, disabled)
Retry count	Displays the number of SHCV check retries when no response is received within the retry timeout interval
Retry timeout (s)	Displays the time to wait for an SHCV check response before the next retry or deletion of the existing host from the system
<i>host-limit-exceeded</i>	SHCV parameters applicable for checks triggered by a host limit exceeded event
Administrative state	Displays the administrative state for host-limit-exceeded triggered checks (enabled, disabled)
Retry count	Displays the number of SHCV check retries when no response is received within the retry timeout interval

Label	Description
Retry timeout (s)	Displays the time to wait for an SHCV check response before the next retry or deletion of the unresponsive existing host from the system
<i>inactivity</i>	SHCV parameters applicable for checks triggered by an inactivity detection
Administrative state	Displays the administrative state for host-limit-exceeded triggered checks (enabled, disabled)
Retry count	Displays the number of SHCV check retries when no response is received withing the retry timeout interval
Retry timeout (s)	Displays the time to wait for an SHCV check response before the next retry or deletion of the unresponsive inactive host from the system
<i>mobility</i>	SHCV parameters applicable for checks triggered by a mobility event: a new host with same MAC address and same IP address as an existing host active on a different SAP
Administrative state	Displays the administrative state for mobility triggered checks (enabled, disabled)
Retry count	Displays the number of SHCV check retries when no response is received withing the retry timeout interval
Retry timeout (s)	Displays the time to wait for an SHCV check response before the next retry or deletion of the existing host from the system
<i>mac-learning</i>	SHCV parameters applicable for checks triggered for mac learning of IP only static hosts
Administrative state	Displays the administrative state for mac-learning triggered checks (enabled, disabled)
Retry count	Displays the number of SHCV check retries when no response is received withing the retry timeout interval
Retry timeout (s)	Displays the time to wait for an SHCV check response before the next retry

## 21.67 sid-egress-stats

### sid-egress-stats

#### Syntax

**sid-egress-stats adj** [*interface-name*]



**sid-egress-stats adj-set** [*id*]  
**sid-egress-stats all**  
**sid-egress-stats node** [*ip-prefix*[/ *prefix-length*]]

## Context

**[Tree]** (clear>router>isis sid-egress-stats)

**[Tree]** (clear>router>ospf sid-egress-stats)

## Full Context

clear router isis sid-egress-stats

clear router ospf sid-egress-stats

## Description

This command clears the IS-IS or OSPF egress SID statistics.

## Parameters

### **adj**

Clears the egress statistics of the adjacency SID specified by the corresponding interface name. Clears all adjacency SIDs egress statistics if no adjacency SID is specified.

### **interface-name**

Clears the SID egress statistics for the interface specified by this interface name up to 32 characters.

### **adj-set**

Clears the egress statistics of the adjacency set specified by the corresponding ID. Clears all adjacency sets egress statistics if no adjacency set is specified.

### **id**

Clears the SID egress statistics for the identifier specified for this adjacency set.

**Values** 0 to 4294967295

### **all**

Clears all the SID egress statistics.

### **node**

Clears the egress statistics for the node SID specified by the corresponding prefix. Clears all node SIDs egress statistics if no node SID is specified.

### **ip-prefix**[/*prefix-length*]

Clears the IP prefix and prefix length of the node SID.

**Values** ipv4-prefix:  
• a.b.c.d (host bits must be 0)  
ipv4-prefix-length: [0 to 32]

## Platforms

All

## sid-egress-stats

### Syntax

**sid-egress-stats** **adj** [*interface-name*]

**sid-egress-stats** **all**

**sid-egress-stats** **node** [*ip-prefix*[/ *prefix-length*]]

### Context

**[Tree]** (clear>router>ospf3 sid-egress-stats)

### Full Context

clear router ospf3 sid-egress-stats

### Description

This command clears the OSPF3 egress SID statistics.

### Parameters

#### adj

Clears the egress statistics of the adjacency SID specified by the corresponding interface name. Clears all adjacency SIDs egress statistics if no adjacency SID is specified.

#### *interface-name*

Clears the SID egress statistics for the interface specified by this interface name up to 32 characters.

#### all

Clears all the SID egress statistics.

#### node

Clears the egress statistics for the node SID specified by the corresponding prefix. Clears all node SIDs egress statistics if no node SID is specified.

#### *ip-prefix*[/*prefix-length*]

Clears the IP prefix and prefix length of the node SID.

#### Values

ipv4-prefix:

- a.b.c.d (host bits must be 0)

ipv4-prefix-length: [0 to 32]

ipv6-prefix:

- x:x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H

- d: [0 to 255]D
- ipv6-prefix-length: [0 to 128]

## Platforms

All

## 21.68 sid-ingress-stats

### sid-ingress-stats

#### Syntax

**sid-ingress-stats adj** [*interface-name*]

**sid-ingress-stats adj-set** [*id*]

**sid-ingress-stats all**

**sid-ingress-stats node** [*ip-prefix*[/ *prefix-length*]]

#### Context

**[Tree]** (clear>router>ospf sid-ingress-stats)

**[Tree]** (clear>router>isis sid-ingress-stats)

#### Full Context

clear router ospf sid-ingress-stats

clear router isis sid-ingress-stats

#### Description

This command clears the IS-IS or OSPF ingress SID statistics.

#### Parameters

##### adj

Clears the ingress statistics of the adjacency SID specified by the corresponding interface name. Clears all adjacency SIDs ingress statistics if no adjacency SID is specified.

##### interface-name

Clears the SID ingress statistics for the interface specified by this interface name up to 32 characters.

##### adj-set

Clears the ingress statistics of the adjacency set specified by the corresponding ID. Clears all adjacency sets ingress statistics if no adjacency set is specified.

##### id

Clears the SID ingress statistics for the identifier specified for this adjacency set.

**Values** 0 to 4294967295

**all**

Clears all the SID ingress statistics.

**node**

Clears the ingress statistics for the node SID specified by the corresponding prefix. Clears all node SIDs ingress statistics if no node SID is specified.

***ip-prefix[/prefix-length]***

Clears the IP prefix and prefix length of the node SID.

**Values** ipv4-prefix:  
• a.b.c.d (host bits must be 0)  
ipv4-prefix-length: [0 to 32]

**Platforms**

All

## sid-ingress-stats

**Syntax**

**sid-ingress-stats adj** [*interface-name*]

**sid-ingress-stats all**

**sid-ingress-stats node** [*ip-prefix[/ prefix-length]*]

**Context**

[\[Tree\]](#) (clear>router>ospf3 sid-ingress-stats)

**Full Context**

clear router ospf3 sid-ingress-stats

**Description**

This command clears the OSPF3 ingress SID statistics.

**Parameters**

**adj**

Clears the ingress statistics of the adjacency SID specified by the corresponding interface name. Clears all adjacency SIDs ingress statistics if no adjacency SID is specified.

***interface-name***

Clears the SID ingress statistics for the interface specified by this interface name up to 32 characters.

**all**

Clears all the SID ingress statistics.

## node

Clears the ingress statistics for the node SID specified by the corresponding prefix. Clears all node SIDs ingress statistics if no node SID is specified.

### ***ip-prefix[/prefix-length]***

Clears the IP prefix and prefix length of the node SID.

- Values**
- ipv4-prefix:
    - a.b.c.d (host bits must be 0)
  - ipv4-prefix-length: [0 to 32]
  - ipv6-prefix:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF]H
    - d: [0 to 255]D
  - ipv6-prefix-length: [0 to 128]

## Platforms

All

## 21.69 sid-stats

### sid-stats

#### Syntax

**sid-stats adj** [*interface-name*]

**sid-stats adj-set** [*id*]

**sid-stats node** [*ip-prefix[/ prefix-length]*] [**algo** algo-id]

**sid-stats summary**

#### Context

**[Tree]** (show>router>ospf sid-stats)

**[Tree]** (show>router>isis sid-stats)

#### Full Context

show router ospf sid-stats

show router isis sid-stats

#### Description

This command displays information about IGP SIDs statistics.

## Parameters

### *interface-name*

Displays only the SID statistics identified by this interface name up to 32 characters.

### *id*

Displays the adjacency set ID.

**Values** 0 to 4294967295

### *ip-prefix[/prefix-length]*

Displays information for the specified IP prefix and prefix length.

**Values** ipv4-prefix:  
• a.b.c.d (host bits must be 0)  
ipv4-prefix-length: [0 to 32]

### *algo-id*

Displays the algorithm identifier.

**Values** 0 to 255

### *adj*

Displays the ingress and egress statistics, if any, of the adjacency SID specified by the corresponding interface name. Displays statistics for all adjacency SIDs if none is specified.

### *adj-set*

Displays the ingress and egress statistics, if any, of the adjacency set specified by its associated ID. Displays statistics for all adjacency sets if none is specified.

### *node*

Displays the ingress and egress statistics, if any, of the node SID specified by the corresponding prefix. Displays statistics for all node SIDs if none is specified.

### *algo*

Displays statistics for the specified algorithm identifier.

### *summary*

Displays statistics indices usage for SID statistics.

## Platforms

All

## Output

The following outputs are examples of SID statistics information and [Table 491: SID Statistics Adjacency Set Output Fields](#) describes the output fields.

### Output Example

The **show router ospf sid-stats adj** command displays statistics for adjacency SIDs.

```
=====
Label                : 20001                Type                : adjacency
```

```

Prefix      : 10.1.2.2/32
Interface   : to_Dut-B
Ingress Oper State: enabled      Egress Oper State : enabled
Ingress Octets : 0              Egress Octets      : 0
Ingress Packets : 0             Egress Packets     : 0
...
=====
    
```

The **show router ospf sid-stats adj-set** command displays statistics for adjacency set SIDs.

```

=====
Label       : 20001              Type           : adjacencySet
Prefix      : 2.1.20.10/32
Adjacency-set : 23
Ingress Oper State: enabled      Egress Oper State : enabled
Ingress Octets : 0              Egress Octets      : 0
Ingress Packets : 0             Egress Packets     : 0
...
=====
    
```

The **show router ospf sid-stats node** command displays statistics for the specified algorithm.

```

*A:Dut-C# show router ospf sid-stats node algo 128
=====
Rtr Base OSPFv2 Instance 0 Sid Statistics
=====
Ingress Label   : 101282          Type           : node
Prefix          : 10.20.1.2/32
Algorithm       : 128
Ingress Oper State: disabled      Egress Oper State : disabled
Ingress Octets  : 0              Egress Octets     : 0
Ingress Packets : 0             Egress Packets    : 0
Ingress Label   : 101283          Type           : node
Prefix          : 10.20.1.3/32
Algorithm       : 128
Ingress Oper State: disabled      Egress Oper State : disabled
Ingress Octets  : 0              Egress Octets     : 0
Ingress Packets : 0             Egress Packets    : 0
Ingress Label   : 101285          Type           : node
Prefix          : 10.20.1.5/32
Algorithm       : 128
Ingress Oper State: disabled      Egress Oper State : disabled
Ingress Octets  : 0              Egress Octets     : 0
Ingress Packets : 0             Egress Packets    : 0
-----
Sid count : 3
=====
*A:Dut-C#
    
```

The **show router ospf sid-stats node** command displays statistics for node SIDs.

```

=====
Label       : 20001              Type           : node
Prefix      : 1.1.1.1/32
Ingress Oper State: enabled      Egress Oper State : enabled
Ingress Octets : 0              Egress Octets      : 0
Ingress Packets : 0             Egress Packets     : 0
...
=====
    
```

The **show router ospf sid-stats summary** command displays summary statistics for SIDs.

```

=====
Rtr Base OSPFv2 Instance 0 Sid Statistics (summary)
=====
SID Statistics summary
=====
Node                Adj                Adj-Set
-----
SID Ingress Statistics indexes : 0/0                0/0                0/0
SID Egress Statistics indexes  : 0/0                0/0                0/0
-----
<stats>/<sids> : <stats> = number of statistics indexes of specified type
                  <sids> = total number of SIDs of specified type for which the
                      statistic is applicable
=====
    
```

Table 491: SID Statistics Adjacency Set Output Fields

Label	Description
Label	The ILM MPLS label corresponding to the SID.
Type	The type of the SID.
Prefix	The prefix corresponding to the node SID, or the IP address of the neighbor (adjacency SID) or the destination IP associated to the adjacency set.
Interface	The OSPF interface.
Ingress Oper State	Indicates if ingress statistics are enabled or disabled, or if no statistics index is allocated to that SID (no resources).
Egress Oper State	Indicates if egress statistics are enabled or disabled, or if no statistics index is allocated to that SID (no resources).
Ingress Octets	The number of octets received on ingress for that SID.
Egress Octets	The number of octets sent on egress for that SID.
Ingress Packets	The number of packets received on ingress for that SID.
Egress Packets	The number of packets sent on egress for that SID.

## sid-stats

### Syntax

```

sid-stats adj [interface-name]
sid-stats node [ip-prefix[/ prefix-length]]
sid-stats summary
    
```



## Context

[\[Tree\]](#) (show>router>ospf3 sid-stats)

## Full Context

```
show router ospf3 sid-stats
```

## Description

This command displays information about IGP SIDs statistics.

## Parameters

### adj

Displays the ingress and egress statistics, if any, of the adjacency SID specified by the corresponding interface name. Displays statistics for all adjacency SIDs if none is specified.

### interface-name

Displays only the SID statistics identified by this interface name up to 32 characters.

### node

Displays the ingress and egress statistics, if any, of the node SID specified by the corresponding prefix. Displays statistics for all node SIDs if none is specified.

### ip-prefix[/prefix-length]

Displays information for the specified IP prefix and prefix length.

**Values**    ipv4-prefix:  
              • a.b.c.d (host bits must be 0)  
              ipv4-prefix-length: [0 to 32]

### summary

Displays stat indices usage for SID statistics.

## Platforms

All

## Output

The following outputs are an example of SID statistics information

### Output Example

The **show router ospf3 sid-stats adj** command displays statistics for adjacency SIDs.

```
=====
Label           : 20001                Type           : adjacency
Prefix          : 10.1.2.2/32
Interface       : to_Dut-B
Ingress Oper State: enabled           Egress Oper State : enabled
Ingress Octets  : 0                   Egress Octets     : 0
Ingress Packets : 0                   Egress Packets    : 0
...
=====
```

The **show router ospf3 sid-stats node** command displays statistics for node SIDs.

```
=====
Label           : 20001           Type           : node
Prefix          : 1.1.1.1/32
Ingress Oper State: enabled      Egress Oper State : enabled
Ingress Octets   : 0             Egress Octets     : 0
Ingress Packets  : 0             Egress Packets    : 0
...
=====
```

The **show router ospf3 sid-stats summary** command displays summary statistics for SIDs.

```
=====
Rtr Base OSPFv3 Instance 0 Sid Statistics (summary)
=====
SID Statistics summary
=====
                Node           Adj
-----
SID Ingress Statistics indexes : 0/0           0/0
SID Egress Statistics indexes  : 0/0           0/0
-----
<stats>/<sids> : <stats> = number of statistics indexes of specified type
                  <sids> = total number of SIDs of specified type for which the
                        statistic is applicable
=====
```

## 21.70 site

### site

#### Syntax

**site** [detail]

**site** *name*

#### Context

[\[Tree\]](#) (show>service>id site)

#### Full Context

show service id site

#### Description

This command displays site-specific information for the service.

## Parameters

*name*

Specifies the site name, up to 32 characters in length.

## Platforms

All

site

## Syntax

**site** *name*

## Context

[\[Tree\]](#) (clear>service>id site)

## Full Context

clear service id site

## Description

This command clears site-specific information for the service.

## Parameters

*name*

Clears information about the specified service name, up to 32 characters.

**Values** 1 to 2147483648

## Platforms

All

## 21.71 site-using

site-using

## Syntax

**site-using** [**site-name** *name*] [**site-id** *site-id*]

## Context

[\[Tree\]](#) (show>service site-using)

## Full Context

show service site-using

## Description

This command displays BGP multihoming sites used by services.

## Parameters

### *name*

Specifies the BGP multihoming site name, up to 32 characters.

### *site-id*

Specifies the BGP multihoming site ID.

**Values** 1 to 65535

## Platforms

All

## 21.72 sla-profile

### sla-profile

## Syntax

**sla-profile** [*sla-profile-name* [association]]

## Context

[\[Tree\]](#) (show subscr-mgmt sla-profile)

## Full Context

show subscriber-mgmt sla-profile

## Description

This command displays SLA profile information.

## Parameters

### *sla-profile-name*

Specifies an existing SLA profile name.

### **association**

Displays the association information configured with the specified *sla-profile-name*.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management SLA profile information.

### Output Example

```
# show subscriber-mgmt sla-profile "sla-profile-1"
=====
SLA Profile sla-profile-1
=====
Description          : (Not Specified)
Control plane(s)     : local
Host Limits          : overall 1
                     : ipv4-overall 1
                     : ipv4-arp 1
                     : ipv4-dhcp 1
                     : ipv4-ppp 1
                     : ipv6-overall 1
                     : ipv6-pd-overall 1
                     : ipv6-pd-ipoe-dhcp 1
                     : ipv6-pd-ppp-dhcp 1
                     : ipv6-wan-overall 1
                     : ipv6-wan-ipoe-dhcp 1
                     : ipv6-wan-ipoe-slaac 1
                     : ipv6-wan-ppp-dhcp 1
                     : ipv6-wan-ppp-slaac 1
                     : lac-overall 1
                     : remove-oldest
Session Limits       : ipoe 1
                     : pppoe-local 1
                     : pppoe-lac 1
                     : pppoe-overall 1
                     : l2tp-lns 1
                     : l2tp-lts 1
                     : l2tp-overall 1
                     : overall 1
Egr Sched-Policy    : N/A
Ingress Qos-Policy  : 1
Egress Qos-Policy   : 1
Ingress Queuing Type : Service-queuing (Not Applicable to Policer)
Ingr IP Fltr-Id     : N/A
Egr IP Fltr-Id      : N/A
Ingr IPv6 Fltr-Id   : N/A
Egr IPv6 Fltr-Id    : N/A
Ingress Report-Rate : Maximum
Egress Report-Rate  : Maximum
Egress Remarking    : from Sap Qos
Credit Control Pol. : N/A
Category Map        : (Not Specified)
Use ing L2TP DSCP    : false
Default SPI sharing : per-sap
Hs-Agg-Rate-Limit   : Maximum
Egress HS Q stat mode : no-override
Bonding Rate-thresh. : high 90 low 80
Bonding Weight       : weight 100 5
Last Mgmt Change    : 09/30/2020 15:22:30
=====
-----
Ingress Queue Overrides
-----
Queue Rate      CIR      HiPrio  CBS      MBS      AvgOvrHd  StatMode
-----
No ingress overrides configured.
-----
Egress Queue Overrides
-----
Queue Rate      CIR      HiPrio  CBS      MBS      AvgOvrHd  StatMode
```

```

        HsClsWght HsWrrWght HsWredQueuePol
-----
No egress overrides configured.
-----
Ingress Policer Overrides
-----
Plcr Rate      CIR      CBS      MBS      ByteOffset StatMode
-----
No ingress overrides configured.
-----
Egress Policer Overrides
-----
Plcr Rate      CIR      CBS      MBS      ByteOffset StatMode
-----
No egress overrides configured.
-----
QoS statistics aggregation
-----
Ingress policers: all
Ingress queues  : all
Egress policers : all
Egress queues   : all
-----
Egress HS WRR Group Overrides
-----
WrrGroupId  ClassWeight  Rate
-----
No egress overrides configured.
=====
    
```

```

# show subscriber-mgmt sla-profile
=====
SLA Profiles
=====
Name                                     Description
-----
sla_default
sla_prof100_VOIP
sla_prof110_VOIP
sla_prof120_VOIP
sla_prof130_VOIP
sla_prof140_VOIP
sla_prof230_VOIP
sla_prof80
sla_prof80_VOIP
sla_prof81_VOIP
sla_prof90_VOIP
sla_profPC1
sla_profPC2
sla_profPC3
-----
Number of SLA Profiles : 14
=====
A:Dut-A#

# show subscriber-mgmt sla-profile sla_prof100_VOIP association
=====
SLA Profile sla_prof100_VOIP
-----
SAP Default-Profile Associations
-----
    
```

```

No associations found.
-----
SAP Static Host Associations
-----
No associations found.
-----
SAP Non-Sub-Traffic-Profile Associations
-----
No associations found.
-----
Sub-Ident-Policy Profile Map Associations
-----
Policy-name : sub_ident_all
- Key : sla_prof100_VOIP
-----
Sub-Profile Map Associations
-----
No associations found.
-----
Explicit Subscriber Map Associations
-----
No associations found.
=====
A:Dut-A#
    
```

[Table 492: SLA Profile Field Descriptions](#) describes subscriber management SLA profile output fields.

*Table 492: SLA Profile Field Descriptions*

Field	Description
Name	The Service Level Agreement (SLA) profile name
Description	The user provided description of this policy
Number of SLA Profiles	The total number of SLA profiles configured on this node
Control plane(s)	The SLA profile controlled by local control plane or CUPS control plane
Host Limits	The configured maximum number of hosts per SLA profile instance
Session Limits	The configured maximum number of sessions per SLA profile instance
Ingress Qos-Policy	The ingress QoS policy ID
Egress Qos-Policy	The egress QoS policy ID
Ingress Queuing Type	The queuing type
Ingress Filter-Id	The ingress IP filter
Egress Filter-Id	The egress IP filter
Last Mgmt Change	The time and date of the most recent management-initiated change

Field	Description
Queue	The ingress queue ID
Rate	The SLA profile queue rate
CIR	The CIR rate
HiPrio	The number of high priority packets as determined by the SLA profile ingress QoS policy
CBS	The amount of reserved buffer space (in bytes) for the policer
MBS	The amount of buffer space (in bytes) allowed for the policer

## 21.73 slaac

slaac

### Syntax

slaac

### Context

[\[Tree\]](#) (clear>service>id slaac)

### Full Context

clear service id slaac

### Description

Commands in this context clear Stateless Address Auto-Configuration (SLAAC) related data for the service.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

slaac

### Syntax

slaac



## Context

[\[Tree\]](#) (show>service>id slaac)

## Full Context

show service id slaac

## Description

This command displays SLAAC information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 21.74 slm

slm

## Syntax

**slm** *imm* [*interval seconds*] [*repeat repeat*] [*absolute | rate*]

## Context

[\[Tree\]](#) (monitor>oam-pm>session slm)

## Full Context

monitor oam-pm session slm

## Description

This command monitors the Ethernet Synthetic Loss Measurement (SLM) statistics for the specified test's raw measurement interval.

## Parameters

### *seconds*

Specifies the time interval, in seconds.

**Values** 3 to 60

**Default** 10

### *repeat*

Specifies the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

### **absolute**

Specifies that the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

### **rate**

Specifies that the rate-per-second is displayed.

**Default** delta

## **Platforms**

All

## **slm**

## **Syntax**

**slm**

## **Context**

[\[Tree\]](#) (show>oam-pm>stats>session slm)

## **Full Context**

show oam-pm statistics session slm

## **Description**

This command selects the session's Ethernet SLM test for the statistical display.

## **Platforms**

All

## **21.75 slope-policy**

## **slope-policy**

## **Syntax**

**slope-policy** [*slope-policy-name*] [**detail**]

## **Context**

[\[Tree\]](#) (show>qos slope-policy)

## **Full Context**

show qos slope-policy

## Description

This command displays slope policy information.

## Parameters

### *slope-policy-name*

The name of the slope policy.

### **detail**

Displays detailed information about the slope policy.

## Platforms

All

## Output

The following output is an example of slope QoS policy information, and [Table 493: Show QoS Slope Policy Output Fields](#) describes slope QoS policy output fields.

### Output Example

```
*A:PE# show qos slope-policy "slope1"
=====
QoS Slope Policy
=====
Policy          : slope1
Description     : (Not Specified)
Time Avg       : 7
-----
HighPlus Slope Parameters
-----
Start Avg      : 75                      Admin State   : Enabled
Max Avg        : 100                     Max Prob.    : 100
-----
High Slope Parameters
-----
Start Avg      : 50                      Admin State   : Enabled
Max Avg        : 65                      Max Prob.    : 100
-----
Low Slope Parameters
-----
Start Avg      : 30                      Admin State   : Enabled
Max Avg        : 40                      Max Prob.    : 100
-----
Exceed Slope Parameters
-----
Start Avg      : 10                      Admin State   : Enabled
Max Avg        : 25                      Max Prob.    : 100
=====
*A:PE#
*A:PE# show qos slope-policy "slope1" detail
=====
QoS Slope Policy
=====
Policy          : slope1
Description     : (Not Specified)
Time Avg       : 7
-----
HighPlus Slope Parameters
-----
```

```

Start Avg      : 75                Admin State  : Enabled
Max Avg       : 100               Max Prob.   : 100
-----
High Slope Parameters
-----
Start Avg      : 50                Admin State  : Enabled
Max Avg       : 65                Max Prob.   : 100
-----
Low Slope Parameters
-----
Start Avg      : 30                Admin State  : Enabled
Max Avg       : 40                Max Prob.   : 100
-----
Exceed Slope Parameters
-----
Start Avg      : 10                Admin State  : Enabled
Max Avg       : 25                Max Prob.   : 100
-----
Associations
-----
Object Type Object Id   Application   Pool
-----
No Matching Entries
-----
No Matching Entries
-----
WRED Slot/FP Associations
-----
Slot      FP
-----
No Matching Entries
-----
WRED SAP Queue Associations
-----
Policy-Id Queue-Id
-----
No Matching Entries
-----
WRED QoS Queue-Group Associations
-----
Queue-Group                               Queue-Id
-----
No Matching Entries
=====
*A:PE#
    
```

Table 493: Show QoS Slope Policy Output Fields

Label	Description
Policy	The ID that uniquely identifies the policy.
Description	A string that identifies the policy context in the configuration file.
Time Avg	The weighting between the previous shared buffer average utilization result and the new shared buffer utilization.
Slope Parameters	

Label	Description
Start Avg	Specifies the RED slope position for the shared buffer average utilization value where the packet discard probability starts to increase above zero.
Max Avg	Specifies the percentage of the shared buffer space for the buffer pool at which point the drop probability becomes one, expressed as a decimal integer.
Admin State	Enabled The administrative status of the RED slope is enabled. Disabled The administrative status of the RED slope is disabled.
Max Prob.	Specifies the RED slope position for the maximum non-one packet discard probability value before the packet discard probability rises directly to one.

## 21.76 smet

### smet

#### Syntax

```
smet [hunt | detail] [rd rd] [community comm-id] [tag tag] [next-hop next-hop] [aspath-regex reg-exp]
[originator-ip ip-address | ipv6-address]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes>evpn smet)

#### Full Context

```
show router bgp routes evpn smet
```

#### Description

This command displays BGP-EVPN SMET routes.

#### Parameters

##### hunt

Displays entries for the specified route.

##### detail

Displays detailed information.

### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### **comm-id**

Specifies the community ID, up to 72 characters.

**Values** *[as-num:comm-val | ext-comm | well-known-comm]*

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type:{ ip-address:comm-val1 | as-number1:comm-val2 | as-number2:comm-val1 }*  
where:
  - *as-number1* — 0 to 65535
  - *comm-val1* — 0 to 65535
  - **type** — target, origin
  - *ip-address* — a.b.c.d
  - *comm-val2* — 0 to 4294967295
  - *as-number2* — 0 to 4294967295
- *well-known-comm* — **null | no-export | no-export-subconfed | no-advertise |**

### **tag**

Specifies the SMET route tag.

**Values** *0to 4294967295 | MAX-ET*

### **next-hop**

Specifies the IPv4 or IPv6 BGP next-hop address.

**Values**

<i>ipv4-address:</i>	<i>a.b.c.d</i>
<i>ipv6-address:</i>	<i>x:x:x:x:x:x:x (eight 16-bit pieces)</i>
	<i>x:x:x:x:x:d.d.d.d</i>
	<i>x: [0 to FFFF]H</i>
	<i>d: [0 to 255]D</i>

### **reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

***ip-address* | *ipv6-address***

Specifies the originator IPv4 or IPv6 address, up to 64 characters.

**Platforms**

All

## 21.77 snippets

### snippets

**Syntax**

**snippets** [**detail**]

**snippets name** *snippet-name* [**instance** *snippet-instance*] [**detail**]

**Context**

[\[Tree\]](#) (show>service>dynsvc>script snippets)

**Full Context**

show service dynamic-services script snippets

**Description**

This command displays the dynamic services snippets information. A snippet is the name of a set of Python functions to create, modify or destroy configuration; for example: a snippet called 'vprn' to create, modify, or destroy VPRN services.

The CLI output generated by a single dynamic service python function call is a snippet instance.



**Note:**

This command is not available in the MD-CLI.

**Parameters**

**detail**

Displays dynamic services snippet information.

***snippet-name***

Specifies the snippet name.

***snippet-instance***

Specifies the snippet instance.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of dynamic service snippets.

### Output Example

```
# show service dynamic-services script snippets
=====
Dynamic Services Snippets
=====
Name                Instance                Ref-count  Dict-len
-----
vprn                 VRF-1                   1          75
vprn_1              1/1/1:1.901            0          190
-----
No. of Snippets: 2
=====

# show service dynamic-services script snippets detail
=====
Dynamic Service Snippets
=====
Snippet             : vprn:VRF-1
-----
reference-count     : 1
dictionary-length   : 75

Root-object
-----
oid                 : svcRowStatus.100000

Reserved-id
-----
id                  : service-id:100000
-----
Snippet             : vprn_1:1/1/1:1.901
-----
reference-count     : 0
dictionary-length   : 190

Referenced-snippet
-----
snippet             : vprn:VRF-1
-----
No. of Snippets: 2
=====
```

[Table 494: Snippets Field Descriptions](#) describes snippets fields.

*Table 494: Snippets Field Descriptions*

Output field	Description
Name	The snippet name.
Instance	The snippet instance.
Ref-count reference-count	The number of times this snippet is referenced by other snippets.



Output field	Description
Dict-len dictionary-length	The length of the python dictionary stored for this snippet.
Root-object	The object created by a Dynamic Service of which the parent is not created by a Dynamic Service.

## 21.78 snmp

snmp

### Syntax

snmp

### Context

[\[Tree\]](#) (show snmp)

### Full Context

show snmp

### Description

Commands in this context display SNMP configuration.

### Platforms

All

snmp

### Syntax

snmp

### Context

[\[Tree\]](#) (show>system>security snmp)

### Full Context

show system security snmp

### Description

Commands in this context show SNMP information.

## Platforms

All

## 21.79 snmp-trap-group

### snmp-trap-group

#### Syntax

```
snmp-trap-group [log-id]
```

#### Context

[\[Tree\]](#) (show>service>id>log snmp-trap-group)

#### Full Context

```
show service id log snmp-trap-group
```

#### Description

This command displays SNMP trap group configuration information.

#### Parameters

**log-id**

Displays only SNMP trap group information for the specified trap group log ID.

**Values** 1 to 100

## Platforms

All

## Output

### SNMP Trap Group Output

[Table 495: SNMP Trap Group Field Descriptions](#) describes SNMP trap group output fields.

*Table 495: SNMP Trap Group Field Descriptions*

Label	Description
Log-ID	The log destination ID for an event stream.
Address	The IP address of the trap receiver.
Port	The destination UDP port used for sending traps to the destination, expressed as a decimal integer.

Label	Description
Version	Specifies the SNMP version format to use for traps sent to the trap receiver. Valid values are <code>snmpv1</code> , <code>snmpv2c</code> , <code>snmpv3</code> .
Community	The community string required by <b>snmpv1</b> or <b>snmpv2c</b> trap receivers.
Security-Level	The required authentication and privacy levels required to access the views on this node.
Replay	Indicates whether or not the replay parameter has been configured, enabled or disabled, for the trap-target address.
Replay from	Indicates the sequence ID of the first missed notification that will be replayed when a route is added to the routing table by which trap-target address can be reached. If no notifications are waiting to be replayed this field shows <code>n/a</code> .
Last Replay	Indicates the last time missed events were replayed to the trap-target address. If no events have ever been replayed this field shows <code>never</code> .

## snmp-trap-group

### Syntax

```
snmp-trap-group [log-id-or-log-name]
```

### Context

[\[Tree\]](#) (show>log snmp-trap-group)

### Full Context

```
show log snmp-trap-group
```

### Description

This command displays SNMP trap group configuration information.

### Parameters

#### *log-id-or-log-name*

Displays only SNMP trap group information for the specified trap group log ID, up to 64 characters.

### Platforms

All

### Output

The following output is an example of SNMP trap group information.

**Table 496: SNMP Trap Group Output Fields** describes SNMP trap group output fields.

**Output Example**

```
A:SetupCLI>config>log>snmp-trap-group# show log snmp-trap-group 44
=====
SNMP Trap Group 44
=====
Description : none
-----
Name       : ntt-test
Address    : 10.10.10.3
Port       : 162
Version    : v2c
Community  : ntttesting
Sec. Level : none
Replay     : disabled
Replay from : n/a
Last replay : never
-----
Name       : test2
Address    : 10.20.20.5
Port       : 162
Version    : v2c
Community  : ntttesting
Sec. Level : none
Replay     : disabled
Replay from : n/a
Last replay : never
=====
A:SetupCLI>config>log>snmp-trap-group#
```

*Table 496: SNMP Trap Group Output Fields*

Label	Description
Log-ID/Name	The log destination ID or name for an event stream.
Address	The IP address of the trap receiver,
Port	The destination UDP port used for sending traps to the destination, expressed as a decimal integer.
Version	Specifies the SNMP version format to use for traps sent to the trap receiver. Valid values are <b>snmpv1</b> , <b>snmpv2c</b> , <b>snmpv3</b> .
Community	The community string required by <b>snmpv1</b> or <b>snmpv2c</b> trap receivers.
Security-Level	The required authentication and privacy levels required to access the views on this node.
Replay	Indicates whether or not the replay parameter has been configured, enabled or disabled, for the trap-target address.
Replay from	Indicates the sequence ID of the first missed notification that will be replayed when a route is added to the routing table by

Label	Description
	which trap-target address can be reached. If no notifications are waiting to be replayed this field shows n/a.
Last Replay	Indicates the last time missed events were replayed to the trap-target address. If no events have ever been replayed this field shows never.

## 21.80 sntp

sntp

### Syntax

sntp

### Context

[\[Tree\]](#) (show>system sntp)

### Full Context

show system sntp

### Description

This command displays SNTP protocol configuration and state.

### Platforms

All

### Output

The following output is an example of SNTP information, and [Table 497: System SNTP Field Descriptions](#) describes the output fields.

### Output Example

```
A:ALA-1# show system sntp
=====
SNTP
=====
SNTP Server      Version      Preference    Interval
-----
10.10.20.253    3            Preferred     64
=====
A:ALA-1#
```

Table 497: System SNTP Field Descriptions

Label	Description
SNTP Server	The SNTP server address for SNTP unicast client mode.
Version	The SNTP version number, expressed as an integer.
Preference	Normal — When more than one time server is configured, one server can be configured to have preference over another. Preferred — Indicates that this server has preference over another.
Interval	The frequency, in seconds, that the server is queried.

## 21.81 sockets

### sockets

#### Syntax

**sockets**

#### Context

[\[Tree\]](#) (tools>dump>router>ldp sockets)

#### Full Context

tools dump router ldp sockets

#### Description

This command dumps information for all LDP sockets.

#### Platforms

All

## 21.82 software-repository

### software-repository

#### Syntax

**software-repository** [*repository-name*]

## Context

[\[Tree\]](#) (show>system software-repository)

## Full Context

show system software-repository

## Description

This command displays software repository information.

## Parameters

*repository-name*

Specifies the software repository name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 21.83 source

### source

## Syntax

**source** [*ip-address/mask*] [**type** {**configured** | **dynamic** | **both**}] [**detail**]

## Context

[\[Tree\]](#) (show>router>msdp source)

## Full Context

show router msdp source

## Description

This command displays the discovery method for the multicast source.

## Parameters

*ip-address/mask*

Specifies the source IP address and mask.

**Values** *ip-address* — a.b.c.d  
*mask* — 1 to 32

**configured**

Keyword to display user-created sources.

**dynamic**

Keyword to display dynamically created sources.

**both**

Keyword to display both user-configured and dynamically created sources.

**detail**

Keyword to display detailed MSDP source information.

**Platforms**

All

## 21.84 source-active

### source-active

**Syntax**

**source-active** [{**group** *ip-address* | **local** | **originator** *ip-address* | **peer** *ip-address* | **source** *ip-address* | **group** *ip-address* **source** *ip-address*}] [**detail**]

**Context**

[\[Tree\]](#) (show>router>msdp source-active)

**Full Context**

show router msdp source-active

**Description**

This command displays SA messages accepted by MSDP.

**Parameters**

**group** *ip-address*

Displays information about the specified group IP address.

**local**

Keyword to display information about local source-active messages.

**originator** *ip-address*

Displays information about the specified originator IP address.

**peer** *ip-address*

Displays information about the specified peer IP address.

**source** *ip-address*

Displays information about the specified source IP address.



**group ip-address**

Displays information about the specified group IP address.

**detail**

Keyword to display detailed MSDP source-active information.

**Platforms**

All

**Output**

The following output is an example of MSDP source active information, and [Table 498: Output fields: MSDP source-active](#) describes the output fields.

**Output example**

```
A:ALA-48# show router msdp source-active
=====
MSDP Source Active Info
=====
Grp Address      Src Address      Origin RP        Peer Address     State Timer
-----
239.100.0.0     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.1     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.2     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.3     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.4     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.5     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.6     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.7     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.8     10.112.1.2      10.20.1.1       10.20.1.1 69
239.100.0.9     10.112.1.2      10.20.1.1       10.20.1.1 69
-----
MSDP Source Active : 10
=====
A:ALA-48#

A:ALA-48# show router msdp source-active detail
=====
MSDP Source Active
=====
Group Address      : 239.100.0.0      Source Address      : 10.112.1.2
Origin RP          : 10.20.1.1       Peer Address       : 10.20.1.1
State Timer        : 64              Up Time           : 3d 01:44:25
Group Address      : 239.100.0.1      Source Address      : 10.112.1.2
Origin RP          : 10.20.1.1       Peer Address       : 10.20.1.1
State Timer        : 64              Up Time           : 48d 18:22:29
Group Address      : 239.100.0.2      Source Address      : 10.112.1.2
Origin RP          : 10.20.1.1       Peer Address       : 10.20.1.1
State Timer        : 64              Up Time           : 48d 18:22:29
Group Address      : 239.100.0.3      Source Address      : 10.112.1.2
Origin RP          : 10.20.1.1       Peer Address       : 10.20.1.1
State Timer        : 64              Up Time           : 48d 18:22:29
Group Address      : 239.100.0.4      Source Address      : 10.112.1.2
Origin RP          : 10.20.1.1       Peer Address       : 10.20.1.1
State Timer        : 64              Up Time           : 48d 18:22:29
Group Address      : 239.100.0.5      Source Address      : 10.112.1.2
Origin RP          : 10.20.1.1       Peer Address       : 10.20.1.1
Origin RP          : 10.20.1.1       Peer Address       : 10.20.1.1
State Timer        : 64              Up Time           : 48d 18:22:29
```

```

Group Address      : 239.100.0.7      Source Address     : 10.112.1.2
Origin RP         : 10.20.1.1      Peer Address      : 10.20.1.1
State Timer       : 64              Up Time           : 48d 18:22:29
Group Address     : 239.100.0.8      Source Address     : 10.112.1.2
Origin RP         : 10.20.1.1      Peer Address      : 10.20.1.1
State Timer       : 64              Up Time           : 48d 18:22:29
Group Address     : 239.100.0.9      Source Address     : 10.112.1.2
Origin RP         : 10.20.1.1      Peer Address      : 10.20.1.1
State Timer       : 64              Up Time           : 48d 18:22:29
-----
MSDP Source Active : 10
=====
A:ALA-48#
    
```

Table 498: Output fields: MSDP source-active

Label	Description
Grp Address	The IP address of the group
Src Address	The IP address of the source
Origin RP	The origination RP address
Peer Address	The address of the peer
State Timer	The time-out value. If the value reaches zero, the SA is removed.
Up time	The duration that the SA has been active

## 21.85 source-active-rejected

### source-active-rejected

#### Syntax

**source-active-rejected** [**peer-group** *name*] [**group** *ip-address*] [**source** *ip-address*] [**originator** *ip-address*] [**peer** *ip-address*]

#### Context

[\[Tree\]](#) (show>router>msdp source-active-rejected)

#### Full Context

show router msdp source-active-rejected

#### Description

This command displays SA messages rejected by MSDP.

## Parameters

**peer-group** *name*

Displays information about rejected SA messages for the specified peer group.

**group** *ip-address*

Displays information about the specified group IP address.

**source** *ip-address*

Displays information about the source address of the source active entry that is rejected.

**originator** *ip-address*

Displays information about the specified originator IP address.

**peer** *ip-address*

Displays information about the peer from which this rejected source active entry was last received.

## Platforms

All

## Output

The following output is an example of MSDP rejected source active information, and [Table 499: Output fields: MSDP source-active-rejected](#) describes the output fields.

### Output example

```
*A:ALA-48# show router msdp source-active-rejected
=====
MSDP Source Active Rejected Info
=====
Grp Address      Src Address      Origin RP        Peer Address     Reject Reason
-----
239.100.0.1     10.0.0.1        10.20.0.1       239.0.0.1       Import Policy
239.100.0.2     10.0.0.2        10.20.0.2       239.0.0.2       Export Policy
239.100.0.3     10.0.0.3        10.20.0.3       239.0.0.3       RPF Failure
239.100.0.4     10.0.0.4        10.20.0.4       239.0.0.4       Limit Exceeded
239.100.0.5     10.0.0.5        10.20.0.5       239.0.0.5       Limit Exceeded
239.100.0.6     10.0.0.6        10.20.0.6       239.0.0.6       Limit Exceeded
239.100.0.7     10.0.0.7        10.20.0.7       239.0.0.7       Limit Exceeded
-----
SA Rejected Entries : 7
=====
*A:ALA-48#
```

Table 499: Output fields: MSDP source-active-rejected

Label	Description
Grp Address	The IP address of the group
Src Address	The IP address of the source
Origin RP	The origination rendezvous point (RP) address
Peer Address	The address of the peer

Label	Description
Reject Reason	The reason that the source active entry was rejected

## 21.86 source-address

### source-address

#### Syntax

**source-address**

#### Context

[\[Tree\]](#) (show>system>security source-address)

#### Full Context

show system security source-address

#### Description

This command displays source-address configured for applications.

#### Platforms

All

#### Output

The following output is an example of source address output information.

[Table 500: Show Source Address Output Fields](#) describes source address output fields.

#### Output Example

```
A:SR-7# show system security source-address
=====
Source-Address applications
=====
Application          IP address/Interface Name          Oper status
-----
telnet                10.20.1.7                          Up
radius                loopback1                            Up
=====
A:SR-7#
```

*Table 500: Show Source Address Output Fields*

Label	Description
Application	Displays the source-address application.

Label	Description
IP address Interface Name	Displays the source address IP address or interface name.
Oper status	Up: The source address is operationally up. Down: The source address is operationally down.

## 21.87 spb

spb

### Syntax

spb

### Context

[\[Tree\]](#) (clear>service>id spb)

### Full Context

clear service id spb

### Description

This command clears SPB related data.

### Platforms

All

spb

### Syntax

spb

### Context

[\[Tree\]](#) (show>service>id spb)

### Full Context

show service id spb

### Description

Commands in this context display SPB related information.

## Platforms

All

## 21.88 spf

```
spf
```

### Syntax

```
spf
```

### Context

[\[Tree\]](#) (show>service>id>spb spf)

### Full Context

```
show service id spb spf
```

### Description

This command displays SPF information.

### Platforms

All

### Output

The following output is an example of service SPB SPF information.

#### Output Example

```
A:cses-B01# show service id spb spf
=====
Path Table
=====
Node                               Interface                               Nexthop
-----
Fwd Tree: unicast,   ECT Alg: low-path-id
-----
cses-B07.00                sap:1/1/20:500                        cses-B07
cses-B01.00                sap:1/1/20:500                        cses-B07
cses-B07.00                sap:1/1/20:500                        cses-B07
Fwd Tree: unicast,   ECT Alg: high-path-id
-----
cses-B07.00                sap:1/1/20:500                        cses-B07
cses-B01.00                sap:1/1/20:500                        cses-B07
cses-B07.00                sap:1/1/20:500                        cses-B07
Fwd Tree: multicast, ECT Alg: low-path-id
-----
cses-B07.00                sap:1/1/20:500                        cses-B07
```

```

ces-B01.00          sap:1/1/20:500          ces-B07
ces-B07.00          sap:1/1/20:500          ces-B07

Fwd Tree: multicast,  ECT Alg: high-path-id
-----
ces-B07.00          sap:1/1/20:500          ces-B07
ces-B01.00          sap:1/1/20:500          ces-B07
ces-B07.00          sap:1/1/20:500          ces-B07
=====
    
```

## spf

### Syntax

**spf** [*lfa*]

### Context

[\[Tree\]](#) (show>router>ospf spf)

[\[Tree\]](#) (show>router>ospf3 spf)

### Full Context

show router ospf spf

show router ospf3 spf

### Description

This command displays statistics of shortest-path-first (SPF) calculations.

### Parameters

**lfa**

Displays Loop-Free Alternate (LFA) next-hop information.

### Platforms

All

### Output

SPF Output Fields

[Table 501: SPF Output Fields](#) describes SPF output fields.

*Table 501: SPF Output Fields*

Label	Description
Total SPF Runs	The total number of SPF runs triggered by new or updated LSAs.
Last Full SPF run @	The date and time when the last full SPF was run.

Label	Description
Last Full SPF Time	The duration, in seconds, of the last full SPF calculation. Last Full SPF Time = Intra SPF Time + Inter SPF Time + Extern SPF Time + RTM Updt Time.
Intra SPF Time	The duration, in seconds, of the Intra-area phase of the last SPF calculation.
Inter SPF Time	The duration, in seconds, of the Inter-area phase of the last SPF calculation.
Extern SPF Time	The duration, in seconds, of the External phase of the last SPF calculation.
RTM Updt Time	The duration, in seconds, of the RTM update phase of the last SPF calculation.
Min/Avg/Max Full SPF Time	Min The minimum time, in seconds, used to perform a full SPF calculation. Avg The average time, in seconds, of all the full SPF calculations performed by this OSPF router. Max The maximum time, in seconds, used to perform a full SPF calculation.
Total Sum Incr SPF Runs	The total number of incremental SPF runs triggered by new or updated type-3 and type-4 summary LSAs.
Total Ext Incr SPF Runs	The total number of incremental SPF runs triggered by new or updated type-5 external LSAs.

### Output Example

```
*A:Dut-C# show router ospf spf
=====
Rtr Base OSPFv2 Instance 0 SPF Statistics
=====
Total SPF Runs           : 6
Last Full SPF run @     : 05/27/2015 08:45:25
Last Full SPF Time      : < 0.01 secs
  Intra SPF Time         : < 0.01 secs
  Inter SPF Time         : < 0.01 secs
  Extern SPF Time        : < 0.01 secs
  RTM Updt Time          : < 0.01 secs

Min/Avg/Max Full SPF Times : 0.00/0.00/0.00 secs
Min/Avg/Max RTM Updt Times : 0.00/0.00/0.00 secs

Total Sum Incr SPF Runs : 9
Last Sum Incr SPF run @ : 05/27/2015 08:36:14
Last Sum Incr Calc Time : < 0.01 secs
```



```
Total Ext Incr SPF Runs : 0
```

```
=====  
*A:Dut-C# show router ospf spf lfa  
=====
```

```
Rtr Base OSPFv2 Instance 0 SPF Statistics  
=====
```

```
Total SPF Runs      : 6  
Last Full SPF run @  : 05/27/2015 08:45:25  
Last Full SPF Time   : < 0.01 secs  
  Intra SPF Time     : < 0.01 secs  
  Inter SPF Time     : < 0.01 secs  
  Extern SPF Time    : < 0.01 secs  
  RTM Updt Time      : < 0.01 secs
```

```
Min/Avg/Max Full SPF Times : 0.00/0.00/0.00 secs  
Min/Avg/Max RTM Updt Times : 0.00/0.00/0.00 secs
```

```
Total Sum Incr SPF Runs : 9  
Last Sum Incr SPF run @  : 05/27/2015 08:36:14  
Last Sum Incr Calc Time  : < 0.01 secs
```

```
Total Ext Incr SPF Runs : 0
```

```
Total LFA SPF Runs      : 1  
Last LFA SPF run @      : 05/27/2015 08:45:25  
Last LFA SPF Time       : < 0.01 secs  
Min/Avg/Max LFA SPF Times : 0.00/0.00/0.00 secs  
=====
```

```
A:Dut-A# show router ospf 1 spf lfa  
=====
```

```
Rtr Base OSPFv2 Instance 1 SPF Statistics  
=====
```

```
Total SPF Runs      : 6  
Last Full SPF run @  : 02/20/2012 09:19:35  
Last Full SPF Time   : < 0.01 secs  
  Intra SPF Time     : < 0.01 secs  
  Inter SPF Time     : < 0.01 secs  
  Extern SPF Time    : < 0.01 secs  
  RTM Updt Time      : < 0.01 secs
```

```
Min/Avg/Max Full SPF Times : 0.00/0.00/0.00 secs  
Min/Avg/Max RTM Updt Times : 0.00/0.00/0.00 secs
```

```
Total Sum Incr SPF Runs : 0
```

```
Total Ext Incr SPF Runs : 0
```

```
Total LFA SPF Runs      : 5  
Last LFA SPF run @      : 02/20/2012 09:19:35  
Last LFA SPF Time       : < 0.01 secs  
Min/Avg/Max LFA SPF Times : 0.00/0.00/0.00 secs  
=====
```

```
A:ALA-A# show router ospf 1 spf  
=====
```

```
Rtr Base OSPFv2 Instance 1 SPF Statistics  
=====
```

```
Total SPF Runs      : 109  
Last Full SPF run @  : 11/07/2006 18:43:07  
Last Full SPF Time   : < 0.01 secs  
  Intra SPF Time     : < 0.01 secs
```

```
Inter SPF Time      : < 0.01 secs
Extern SPF Time     : < 0.01 secs
RTM Updt Time      : < 0.01 secs

Min/Avg/Max Full SPF Times : 0.02/0.00/0.06 secs
Min/Avg/Max RTM Updt Times : 0.02/0.00/0.06 secs

Total Sum Incr SPF Runs : 333
Last Sum Incr SPF run @ : 11/07/2006 18:43:09
Last Sum Incr Calc Time : < 0.01 secs

Total Ext Incr SPF Runs : 0
=====
A:ALA-A#
```

## 21.89 spf-log

### spf-log

#### Syntax

spf-log

#### Context

[\[Tree\]](#) (show>service>id>spb spf-log)

#### Full Context

show service id spb spf-log

#### Description

This command displays SPF Log information.

#### Platforms

All

#### Output

The following output is an example of service SPB SPF log information.

#### Output Example

```
A:cses-B01# show service id spb spf-log
=====
ISIS SPF Log
=====
When                Duration      L1 Nodes  L2 Nodes  Event Count  Type
-----
07/23/2012 16:01:13 <0.01s     1         0          1           Reg
07/23/2012 16:01:19 <0.01s     1         0          4           Reg
07/23/2012 16:01:24 <0.01s     3         0          2           Reg
07/23/2012 16:01:29 <0.01s     4         0          1           Reg
-----
```

```
Log Entries : 4
-----
```

## spf-log

### Syntax

```
spf-log [detail]
```

### Context

[\[Tree\]](#) (show>router>isis spf-log)

### Full Context

```
show router isis spf-log
```

### Description

This command displays IS-IS SPF log information.

### Parameters

**detail**

Displays detailed spf-log information.

### Platforms

All

### Output

The following output is an example of SPF log information.

#### Output Example

```
*A:Dut-C# show router isis spf-log

=====
Rtr Base ISIS Instance 0 SPF Log
=====
When                Duration      L1 Nodes  L2 Nodes  Event Count  Type
-----
01/26/2015 11:22:19 <0.01s     -         -           -           pLfa
01/26/2015 11:22:19 <0.01s     -         -           -           rLfa
01/26/2015 11:22:20 <0.01s     4         4           25          Reg
01/26/2015 11:22:20 <0.01s     -         -           -           Lfa
01/26/2015 11:22:20 <0.01s     -         -           -           rLfa
01/26/2015 11:22:24 <0.01s     4         4           11          Reg
01/26/2015 11:22:24 <0.01s     -         -           -           Lfa
01/26/2015 11:22:24 <0.01s     -         -           -           rLfa
01/26/2015 11:22:32 <0.01s     4         4           21          Reg
01/26/2015 11:22:32 <0.01s     -         -           -           Lfa
01/26/2015 11:22:32 <0.01s     -         -           -           rLfa
01/26/2015 11:22:33 <0.01s     -         -           -           pSpf
01/26/2015 11:22:33 <0.01s     -         -           -           pLfa
01/26/2015 11:22:33 <0.01s     -         -           -           rLfa
01/26/2015 11:22:41 <0.01s     -         -           -           pSpf
```

```

01/26/2015 11:22:41 <0.01s - - - pLfa
01/26/2015 11:22:41 <0.01s - - - rLfa
01/26/2015 11:22:51 <0.01s 4 4 4 Reg
01/26/2015 11:22:51 <0.01s - - - Lfa
01/26/2015 11:22:51 <0.01s - - - rLfa
-----
Log Entries : 20
=====
*A:Dut-C#

A:SetupCLI# show router isis spf-log detail
=====
Rtr Base ISIS Instance 0 SPF Log
=====
When      : 10/01/2011 03:40:25      Duration   : <0.01s
L1 Nodes  : 1                        L2 Nodes  : 1
Trigger LSP: SetupCLI.00-00         Event Count : 78
SPF Type  : Reg
Reason    : LSPCONTENT

When      : 10/01/2011 03:40:26      Duration   : <0.01s
L1 Nodes  : 1                        L2 Nodes  : 1
Trigger LSP: SetupCLI.00-00         Event Count : 1
SPF Type  : Reg
Reason    : LSPCONTENT

When      : 10/01/2011 03:40:25      Duration   : <0.01s
L1 Nodes  : 1                        L2 Nodes  : 1
Trigger LSP: SetupCLI.00-00         Event Count : 25
SPF Type  : Reg
Reason    : NEWAREA NEWREACH LSPCONTENT MANUALREQ

When      : 10/01/2011 03:40:27      Duration   : <0.01s
L1 Nodes  : 1                        L2 Nodes  : 1
Trigger LSP: SetupCLI.00-00         Event Count : 1
SPF Type  : Reg
Reason    : LSPCONTENT

When      : 10/01/2011 03:40:27      Duration   : <0.01s
L1 Nodes  : 0                        L2 Nodes  : 0
Trigger LSP: SetupCLI.00-00         Event Count : 1
SPF Type  : Lfa
Reason    : LSPCONTENT

When      : 10/01/2011 03:40:25      Duration   : <0.01s
L1 Nodes  : 1                        L2 Nodes  : 1
Trigger LSP: SetupCLI.00-00         Event Count : 75
SPF Type  : Reg
Reason    : LSPCONTENT

When      : 10/01/2011 03:40:27      Duration   : <0.01s
L1 Nodes  : 1                        L2 Nodes  : 1
Trigger LSP: SetupCLI.00-00         Event Count : 1
SPF Type  : Reg
Reason    : LSPCONTENT
=====
A:SetupCLI#
    
```

Table 502: IS-IS SPF Log Output Fields describes the IS-IS SPF log output fields.

Table 502: IS-IS SPF Log Output Fields

Label	Description
When	Displays the timestamp when the SPF run started on the system.
Duration	Displays the time (in hundredths of a second) required to complete the SPF run.
L1 Nodes	Displays the number of Level 1 nodes involved in the SPF run.
L2 Nodes	Displays the number of Level 2 nodes involved in the SPF run.
Event Count	Displays the number of SPF events that triggered the SPF calculation.
Type	Displays the SPF type, Reg (regular) or Lfa (loop free alternative).
Trigger LSP	Displays the LSP that triggered the SPF run.
Reason	Displays the reason(s) for the SPF run. NEWADJ: An adjacency changed. NEWLSP: A new LSP was received. NEWAREA: An area changed. NEWREACH: A prefix changed. ECMPCHANGED: An ECMP path changed. NEWMETRIC: A prefix metric changed. RESTART: The graceful restart exited. LSPEXPIRED: An LSP expired. DBCHANGED: The LSP database was cleared by an administrator. LSPCONTENT: The content of an LSP changed. NEWPREF: The external route preference changed. NEWNLPID: The routed protocols (IPv4 or IPv6) changed. MANUALREQ: An SPF calculation was requested by an administrator. ADMINTAGCHANGED: An administrative tag changed. TUNNELCHANGED: An MPLS tunnel changed.

## spf-log

### Syntax

**spf-log**

### Context

**[Tree]** (clear>service>id>spb spf-log)

**[Tree]** (clear>router>isis spf-log)

### Full Context

clear service id spb spf-log

clear router isis spf-log

### Description

This command clears the SPF log.

### Platforms

All

## 21.90 split-horizon-group

## split-horizon-group

### Syntax

**split-horizon-group** [*group-name*]

### Context

**[Tree]** (show>service>id split-horizon-group)

### Full Context

show service id split-horizon-group

### Description

This command displays service split horizon groups.

### Parameters

***group-name***

Specifies a group name up to 32 characters.

## Platforms

All

## Output

The following output is an example of service split horizon group information.

### Output Example

```
A:ALA-1# show service id 700 split-horizon-group
=====
Service: Split Horizon Group
=====
Name                Description
-----
R DSL-group1        Split horizon group for DSL
-----
R = Residential Split Horizon Group
No. of Split Horizon Groups: 1
=====
A:ALA-1#

A:ALA-1# show service id 700 split-horizon-group DSL-group1
=====
Service: Split Horizon Group
=====
Name                Description
-----
R DSL-group1        Split horizon group for DSL
-----
Associations
-----
SAP                  1/1/3:1
SDP                  108:1
SDP                  109:1
-----
R = Residential Split Horizon Group
SAPs Associated : 1      SDPs Associated : 2
=====
A:ALA-1#
```

## 21.91 spmsi-ad

### spmsi-ad

#### Syntax

```
spmsi-ad [hunt | detail] [rd rd] [community comm-id] [tag tag] [next-hop next-hop] [aspath-regex reg-
exp] [originator-ip ip-address | ipv6-address]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes>evpn spmsi-ad)

## Full Context

```
show router bgp routes evpn spmsi-ad
```

## Description

This command displays BGP-EVPN SPMSI AD routes.

## Parameters

### hunt

Displays entries for the specified route.

### detail

Displays detailed information.

### rd

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### comm-id

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val | ext-comm | well-known-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as the following:  
*type:{ ip-address:comm-val1 | as-number1:comm-val2 | as-number2:comm-val1 }*  
where:
  - *as-number1* — 0 to 65535
  - *comm-val1* — 0 to 65535
  - **type** — target, origin
  - *ip-address* — a.b.c.d
  - *comm-val2* — 0 to 4294967295
  - *as-number2* — 0 to 4294967295
- *well-known-comm* — **null | no-export | no-export-subconfed | no-advertise |**

### tag

Specifies the SPMSI AD route tag.

**Values** 0to 4294967295 | MAX-ET

### next-hop

Specifies the IPv4 or IPv6 BGP next-hop address.



<b>Values</b>	ipv4-address:	a.b.c.d
	ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
		x:x:x:x:x:d.d.d.d
		x: [0 to FFFF]H d: [0 to 255]D

### ***reg-exp***

Displays routes matching the specified regular expression, up to 80 characters.

### ***ip-address | ipv6-address***

Specifies the originator IPv4 or IPv6 address, up to 64 characters.

## **Platforms**

All

## **21.92 spoke-sdp**

### **spoke-sdp**

#### **Syntax**

**spoke-sdp** *sdp-id[:vc-id]* {**all** | **counters** | **stp** | **l2pt** | **mrp**}

#### **Context**

[\[Tree\]](#) (clear>service>statistics>id spoke-sdp)

#### **Full Context**

clear service statistics id spoke-sdp

#### **Description**

This command clears statistics for the spoke SDP bound to the service.

#### **Parameters**

##### ***sdp-id***

The spoke SDP ID for which to clear statistics

**Values** 1 to 17407

##### ***vc-id***

The virtual circuit ID on the SDP ID to be reset

**Values** 1 to 4294967295

**all**

Clears all queue statistics and STP statistics associated with the SDP

**counters**

Clears all queue statistics associated with the SDP

**stp**

Clears all STP statistics associated with the SDP

**l2pt**

Clears all L2PT statistics associated with the SDP

**mrp**

Clears all MRP statistics associated with the SDP

**Platforms**

All

**spoke-sdp**

**Syntax**

**spoke-sdp** *sdp-id:vc-id* **ingress-vc-label**

**spoke-sdp** *sdp-id:vc-id* **l2tpv3**

**spoke-sdp** *sdp-id:vc-id* **vccv-bfd** {**session** | **statistics**}

**Context**

[\[Tree\]](#) (clear>service>id spoke-sdp)

**Full Context**

clear service id spoke-sdp

**Description**

This command clears and resets the spoke SDP bindings for the service.

**Parameters**

***sdp-id***

The spoke SDP ID to be reset.

**Values** 1 to 17407

***vc-id***

The virtual circuit ID on the SDP ID to be reset.

**Values** 1 to 4294967295

**ingress-vc-label**

Specifies to clear the ingress VC label.

### **l2tpv3**

Specifies to clear the session mismatch flag on the spoke-SDP binding after the flag was set to true by a detected mismatch between the configured parameters and the received parameters.

### **vccv-bfd**

Specifies to clear the following information related to VCCV BFD on the spoke-sdp.

### **session**

Clears session information.

### **statistics**

Clears spoke SDP statistics.

## **Platforms**

All

## **21.93 spoke-sdp-fec**

### **spoke-sdp-fec**

#### **Syntax**

**spoke-sdp-fec** [1 to 4294967295]

#### **Context**

[\[Tree\]](#) (show>service>id spoke-sdp-fec)

#### **Full Context**

show service id spoke-sdp-fec

#### **Description**

This command displays spoke-SDP FEC information.

#### **Parameters**

##### **detail**

Displays detailed information.

#### **Platforms**

All

#### **Output**

The following output is an example of spoke-SDP FEC information.

## Output Example

```
=====
Service Spoke-SDP FEC Information
=====
Spoke-Sdp-Fec-Id      : 1                Admin State      : enabled
FEC Type              : 129                AII Type        : 2
Standby Sig Slave    : disabled           ICB             : disabled
Signaling             : auto              Auto Config     : disabled
PW Template Id       : (none)            Precedence      : 4
Retry Timer           : 10 secs           Retry Count     : 10
Retry Timer Remaining: 0 secs            Retries Remaining: 0
SAII Type2            : 3:10.20.1.3:1
TAII Type2            : 6:10.20.1.6:1
Path                  : n/a
Endpoint              : n/a
Oper SDP-Bind         : 17407:4294967246
Last Error            : <none>
=====
Entries found: 1
=====
```

## 21.94 spoke-sdp-fec-using

### spoke-sdp-fec-using

#### Syntax

```
spoke-sdp-fec-using [spoke-sdp-fec-id spoke-sdp-fec-id] [saii-type2 global-id:prefix:ac-id] [taii-type2 global-id:prefix:ac-id] [path name] [expired]
```

#### Context

[\[Tree\]](#) (show>service spoke-sdp-fec-using)

#### Full Context

```
show service spoke-sdp-fec-using
```

#### Description

Displays the SDPs used by spoke-sdp-fecs at this node.

#### Parameters

##### ***spoke-sdp-fec-id***

Specifies the spoke-SDP FEC ID for which to show SDP information.

**Values** 1 to 4294967295

##### ***global-id***

Specifies the SAII or TAI global ID.

**Values** 1 to 4294967295

**prefix**

Specifies the SAII or TAII prefix.

**Values** a.b.c.d, 1 to 4294967295

**ac-id**

Specifies the SAII or TAII AC ID.

**Values** 1 to 4294967295

**name**

Specifies the path name. 32 characters maximum.

**expired**

Displays information for expired SDPs.

**Platforms**

All

**Output**

The following output is an example of spoke-SDP information.

**Output Example**

```
*A:Dut-C# show service spoke-sdp-fec-using
=====
Service Spoke-SDP-Fec Information
=====
SvcId      SpokeSdpFec  Oper-SdpBind   SAII-Type2
Path                                     TAII-Type2
-----
1          1             17407:4294967245 3:10.20.1.3:1
n/a                                     6:10.20.1.6:1
2          2             17407:4294967247 3:10.20.1.3:2
n/a                                     6:10.20.1.6:2
3          3             17407:4294967248 3:10.20.1.3:3
n/a                                     6:10.20.1.6:3
4          4             17407:4294967249 3:10.20.1.3:4
n/a                                     6:10.20.1.6:4
5          5             17407:4294967250 3:10.20.1.3:5
n/a                                     6:10.20.1.6:5
6          6             17407:4294967251 3:10.20.1.3:6
n/a                                     6:10.20.1.6:6
7          7             17407:4294967252 3:10.20.1.3:7
n/a                                     6:10.20.1.6:7
8          8             17407:4294967253 3:10.20.1.3:8
n/a                                     6:10.20.1.6:8
9          9             17407:4294967254 3:10.20.1.3:9
n/a                                     6:10.20.1.6:9
10         10            17407:4294967255 3:10.20.1.3:10
n/a                                     6:10.20.1.6:10
-----
Entries found: 10
```

## 21.95 squelch-ingress-levels

### squelch-ingress-levels

#### Syntax

**squelch-ingress-levels** [all | ctag-space] [ sdp-id[:vc-id]]

#### Context

[\[Tree\]](#) (show>service>sdp-using>eth-cfm squelch-ingress-levels)

#### Full Context

show service sdp-using eth-cfm squelch-ingress-levels

#### Description

This command displays the squelch ingress levels associated with SDP bindings.

#### Parameters

**sdp-id[:vc-id]**

Specifies the SDP ID and virtual circuit ID on the SDP ID.

**Values**    sdp-id: 1 to 32767  
              vc-id: 1 to 4294967295

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 21.96 sr-adj-sets

### sr-adj-sets

#### Syntax

**sr-adj-sets** [adjacency-set-id] [detail]

#### Context

[\[Tree\]](#) (show>router>isis sr-adj-sets)

#### Full Context

show router isis sr-adj-sets

## Description

This command displays IS-IS SR adjacency set log information.

## Parameters

### *adjacency-set-id*

Displays SR adjacency set ID information.

**Values** 1 to 4294967295

### *detail*

Displays detailed SR adjacency set information.

## Platforms

All

## Output

The following output is an example of **sr-adj-sets** log information.

### Output Example

```
*A:Dut-C# show router isis sr-adj-sets

=====
Rtr Base ISIS Instance 0 Adjacency Sets
=====
ID          State          Label Label Members Members Neighbor
            State          Value Type  Total  Active  System Id
-----
1003        active          524285 DL    1      1      0100.2000.1001
1006        active          524284 DL    1      1      0100.2000.1005
1015        active          18448  SL    1      1      0100.2000.1001
1018        active          18451  SL    1      1      0100.2000.1005
1027        active          524283 DL    1      1      0100.2000.1001
1030        active          524282 DL    1      1      0100.2000.1005
1039        active          18460  SL    1      1      0100.2000.1001
1042        active          18463  SL    1      1      0100.2000.1005
1050        active          524281 DL    2      2      none
1056        active          18471  SL    2      2      none
1063        active          524280 DL    1      1      0100.2000.1001
1066        active          524279 DL    1      1      0100.2000.1005
1075        active          18478  SL    1      1      0100.2000.1001
1078        active          18481  SL    1      1      0100.2000.1005
1087        active          524278 DL    1      1      0100.2000.1001
1090        active          524277 DL    1      1      0100.2000.1005
1099        active          18490  SL    1      1      0100.2000.1001
1102        active          18493  SL    1      1      0100.2000.1005
1110        active          524276 DL    2      2      none
1116        active          18501  SL    2      2      none
-----
DL: dynamic local
SL: static local
-----
No. of SR Adjacency Sets: 20
=====
```

[Table 503: IS-IS SR Adjacency Set Output Fields](#) describes the IS-IS **sr-adj-sets** output fields.

Table 503: IS-IS SR Adjacency Set Output Fields

Label	Description
ID	Displays the ID
State	Displays the state (active or inactive)
Label Value	Displays the label value
Label Type	Displays the label type, Dynamic Local (DL) or Static Local (SL)
Members Total	Displays the number of total members
Members Active	Displays the number of active members
Neighbor System Id	Displays the neighbor system ID
No. of SR Adjacency Sets	Displays the number of SR adjacency sets

## sr-adj-sets

### Syntax

**sr-adj-sets** [*adjacency-set-id*] [**detail**]

### Context

[\[Tree\]](#) (show>router>ospf sr-adj-sets)

### Full Context

show router ospf sr-adj-sets

### Description

This command displays OSPF SR adjacency set log information.

### Parameters

#### **adjacency-set-id**

Displays SR adjacency set ID information.

**Values** 1 to 4294967295

#### **detail**

Displays detailed SR adjacency set information.

### Platforms

All



## Output

The following output is an example of **sr-adj-sets** log information.

### Output Example

```
*A:Dut-C# show router ospf sr-adj-sets

=====
Rtr Base OSPF Instance 0 Adjacency Sets
=====
ID          State          Label Value Label Type Members Total Members Active Neighbor System Id
-----
1003       active         524285 DL      1          1          1          0100.2000.1001
1006       active         524284 DL      1          1          1          0100.2000.1005
1015       active         18448  SL      1          1          1          0100.2000.1001
1018       active         18451  SL      1          1          1          0100.2000.1005
1027       active         524283 DL      1          1          1          0100.2000.1001
1030       active         524282 DL      1          1          1          0100.2000.1005
1039       active         18460  SL      1          1          1          0100.2000.1001
1042       active         18463  SL      1          1          1          0100.2000.1005
1050       active         524281 DL      2          2          2          none
1056       active         18471  SL      2          2          2          none
1063       active         524280 DL      1          1          1          0100.2000.1001
1066       active         524279 DL      1          1          1          0100.2000.1005
1075       active         18478  SL      1          1          1          0100.2000.1001
1078       active         18481  SL      1          1          1          0100.2000.1005
1087       active         524278 DL      1          1          1          0100.2000.1001
1090       active         524277 DL      1          1          1          0100.2000.1005
1099       active         18490  SL      1          1          1          0100.2000.1001
1102       active         18493  SL      1          1          1          0100.2000.1005
1110       active         524276 DL      2          2          2          none
1116       active         18501  SL      2          2          2          none
-----
DL: dynamic local
SL: static local
-----
No. of SR Adjacency Sets: 20
=====
```

**Table 504: OSPF SR Adjacency Set Output Fields** describes the OSPF **sr-adj-sets** output fields.

*Table 504: OSPF SR Adjacency Set Output Fields*

Label	Description
ID	Displays the ID.
State	Displays the state (active or inactive).
Label Value	Displays the label value.
Label Type	Displays the label type, Dynamic Local (DL) or Static Local (SL).
Members Total	Displays the number of total members.
Members Active	Displays the number of active members.
Neighbor System Id	Displays the neighbor system ID.

Label	Description
No. of SR Adjacency Sets	Displays the number of SR adjacency sets.

## 22 s Commands – Part II

### 22.1 sr-adjacencies

#### sr-adjacencies

##### Syntax

**sr-adjacencies** [*ip-int-name* | *ip-address*] [**detail**]

##### Context

**[Tree]** (tools>dump>router>isis sr-adjacencies)

##### Full Context

tools dump router isis sr-adjacencies

##### Description

This command displays IS-IS SR adjacency information.

##### Parameters

###### *ip-int-name*

Specifies the IP interface name. An interface name cannot be in the form of an IP address. Interface names can be any string up to 32 characters long composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, etc.), the entire string must be enclosed within double quotes.

###### *ip-address*

Specifies the interface's IP address.

**Values** a.b.c.d

##### Platforms

All

#### sr-adjacencies

##### Syntax

**sr-adjacencies** [*ip-int-name* | *ip-address*] [**detail**]

**sr-adjacencies** [**remote** *ip-address*] [**detail**]

## Context

**[Tree]** (tools>dump>router>ospf3 sr-adjacencies)

**[Tree]** (tools>dump>router>ospf sr-adjacencies)

## Full Context

tools dump router ospf3 sr-adjacencies

tools dump router ospf sr-adjacencies

## Description

This command displays OSPFv2 or OSPFv3 SR adjacency information.

## Parameters

### *ip-int-name*

Specifies the IP interface name. An interface name cannot be in the form of an IP address. Interface names can be any string up to 32 characters, composed of printable, 7-bit ASCII characters. If the string contains special characters (#, \$, spaces, etc.), the entire string must be enclosed within double quotes.

### *ip-address*

Specifies the interface's IP address.

**Values** a.b.c.d

## Platforms

All

## Output

### Output Example

```
*A:Dut-C>config>router>ospf3# /tools dump router ospf3 0 sr-adjacencies detail
=====
Rtr Base OSPFv3 Instance 0 Segment Routing Adjacencies (detail)
Legend:
label stack is ordered from bottom-most to top-most
=====
-----
Interface DUTC_TO_DUTA.1.0
-----
Nbr RouterID   : 10.20.1.1           Nbr State      : FULL
Label          : 524287             PgID           : 9
SID Protection : Enabled             Curr Hold Time : 15
Area ID        : 0.0.0.1           SR MTU         : 1492
Neighbor IP    : fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"
LFA Labels     : 30004/70005
LFA Next hop   : fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"
LFA Glob Itf id: 26                 LFA Loc Itf id : 3
-----
Interface DUTC_TO_DUTF.1.0
-----
Nbr RouterID   : 10.20.1.6           Nbr State      : FULL
Label          : 524286             PgID           : 10
SID Protection : Enabled             Curr Hold Time : 15
```

```
Area ID       : 0.0.0.1           SR MTU       : 1492
Neighbor IP   : fe80::200:ff:fe00:6-"DUTC_TO_DUTF.1.0"
LFA Labels    : 30003/20005
LFA Next hop  : fe80::200:ff:fe00:1-"DUTC_TO_DUTA.1.0"
LFA Glob Itf id: 25             LFA Loc Itf id : 2
-----
No. of SR Adjacencies: 2
=====
```

## 22.2 sr-database

### sr-database

#### Syntax

```
sr-database [sid sid] [prefix ip-address] [nh-type {sr | bgp | rsvp}] [ipv4-unicast | ipv6-unicast] [algo algo-id] [detail]
```

#### Context

[\[Tree\]](#) (tools>dump>router>isis sr-database)

#### Full Context

tools dump router isis sr-database

#### Description

This command displays IS-IS SR database information.

#### Parameters

##### *sid*

Displays information for the specific segment identifier.

**Values** 0 to 524287

##### *ip-address*

Specifies the IP address in dotted decimal notation.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x [eight 16-bit pieces]
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

**sr**

Displays information for SR next-hop route.

**bgp**

Displays information for BGP next-hop route.

**rsvp**

Displays information for RSVP next-hop route.

**ipv4-unicast**

Displays IPv4 unicast parameters.

**ipv6-unicast**

Displays IPv6 unicast parameters.

**algo *algo-id***

Filters information based on the specific algorithm only.

**Values** 0 to 255

**detail**

Displays detailed IS-IS SR database information.

**Platforms**

All

**Output**

The following outputs are examples of IS-IS SR database information, and [Table 505: IS-IS SR Database Output Fields](#) describes the output fields.

**Output Example**

```
*A:Dut-E# tools dump router isis sr-database
=====
Rtr Base ISIS Instance 0 SR Database
=====
SID  Label Prefix          Last-act Lev MT RtmPref TtmPref Metric IpNh SrNh
 Mtu  MtuPrim MtuBk   D xL LT Act AdvSystemId  SrErr
-----
0    60000 1.0.33.3      LfaNhops 1  0 15      11      100    1  1
1484 1500 1500    0 0  T +R 0100.2000.1003 SR_ERR_OK
1    60001 1.0.44.4      LfaNhops 1  0 15      11      200    1  1
1484 1500 1500    0 0  Tn +R 0100.2000.1004 SR_ERR_OK
2    60002 1.0.55.5      Local    -  -  -      -      -      -  -
-    -      -            0 -  - +R 0100.2000.1005 SR_ERR_OK
3    60003 1.0.66.6      LfaNhops 1  0 15      11      100    1  1
1484 1500 1500    0 0  T +R 0100.2000.1006 SR_ERR_OK
4    60004 1.0.11.1      LfaNhops 1  0 15      11      200    1  1
1484 1500 1500    0 0  Tn +R 0100.2000.1001 SR_ERR_OK
5    60005 1.0.22.2      LfaNhops 1  0 15      11      300    1  1
1484 1500 1500    0 0  Tn +R 0100.2000.1002 SR_ERR_OK
6    60006 10.20.1.3     LfaNhops 1  0 15      11      100    1  1
1484 1500 1500    0 0  T +R 0100.2000.1003 SR_ERR_OK
7    60007 10.20.1.4     LfaNhops 1  0 15      11      200    1  1
1484 1500 1500    0 0  Tn +R 0100.2000.1004 SR_ERR_OK
8    60008 10.20.1.5     Local    -  -  -      -      -      -  -
-    -      -            0 -  - +R 0100.2000.1005 SR_ERR_OK
9    60009 10.20.1.6     LfaNhops 1  0 15      11      100    1  1
```

```

1484 1500 1500 0 0 T +R 0100.2000.1006 SR_ERR_OK
10 60010 10.20.1.1 LfaNhops 1 0 15 11 200 1 1
1484 1500 1500 0 0 Tn +R 0100.2000.1001 SR_ERR_OK
11 60011 10.20.1.2 LfaNhops 1 0 15 11 300 1 1
1484 1500 1500 0 0 Tn +R 0100.2000.1002 SR_ERR_OK
-----
No. of Entries: 12
-----
Lev = route level
IpNh = number of IP next-hops
SrNh = number of SR-tunnel next-hops
D = duplicate pending
xL = exclude from LFA
LT = LFA type (L:LFA, R:RLFA, T:TILFA, n:nodeProtection)
Act = tunnel active state (R:reported, F:failed, +:SR-ack)
=====
    
```

### Output Example

```

*A:Dut-C# tools dump router isis sr-database detail
=====
Rtr Base ISIS Instance 0 SR Database
Legend:
label stack is ordered from bottom-most to top-most
=====
SID 601
-----
Label          : 20601                Adv System Id   : 0010.0100.1001
Prefix         : 1.1.1.1
Route Level    : 1                    MT Id           : 0
Rtm Preference : 15                   Ttm Preference  : 11
Metric         : 10                   Last Action     : TnlChange
Num Ip NextHop : 1                    Num SR-Tnl NextHop : 1
Mtu            : 1560
Mtu Prim       : 1564                 Mtu Backup      : -
Exclude from LFA : 0                  LFA Type        : -
Duplicate Pending : 0                 Tunnel Active State : Reported/Ack
SR Error       : SR_ERR_OK
NHOP: IP      IsTunl GIfId/  IfId/ PgId IsAdv Label  IsLfaX
                TunlType LspId
-----
1.1.3.1        N      4      2      19      1      20601  0
-----
SID 602
-----
Label          : 20602                Adv System Id   : 0010.0100.1002
Prefix         : 1.1.1.2
Route Level    : 2                    MT Id           : 0
Rtm Preference : 18                   Ttm Preference  : 11
Metric         : 10                   Last Action     : AddTnl
Num Ip NextHop : 1                    Num SR-Tnl NextHop : 1
Mtu            : 1560
Mtu Prim       : 1564                 Mtu Backup      : -
Exclude from LFA : 0                  LFA Type        : -
Duplicate Pending : 0                 Tunnel Active State : Reported/Ack
SR Error       : SR_ERR_OK
NHOP: IP      IsTunl GIfId/  IfId/ PgId IsAdv Label  IsLfaX
                TunlType LspId
-----
1.2.3.2        N      5      3      15      1      20602  0
-----
SID 603
    
```

```

-----
Label           : 20603                Adv System Id   : 0010.0100.1003
Prefix          : 1.1.1.3              Type            : Local
Duplicate Pending : 0                  Tunnel Active State : Reported/Ack
SR Error        : SR_ERR_OK
-----
SID 604
-----
Label           : 20604                Adv System Id   : 0010.0100.1004
Prefix          : 1.1.1.4
Route Level     : 2                    MT Id           : 0
Rtm Preference  : 18                   Ttm Preference  : 11
Metric          : 20                   Last Action     : AddTnl
Num Ip NextHop  : 1                    Num SR-Tnl NextHop : 1
Mtu             : 1560
Mtu Prim        : 1564                 Mtu Backup      : -
Exclude from LFA : 0                   LFA Type        : -
Duplicate Pending : 0                  Tunnel Active State : Reported/Ack
SR Error        : SR_ERR_OK
NHOP: IP
-----
IsTunl  GIIfId/  IfId/ PgId  IsAdv  Label  IsLfaX
         TunlType LspId
-----
1.2.3.2      N      5      3      15      0      20604  0
-----
SID 605
-----
Label           : 20605                Adv System Id   : 0010.0100.1005
Prefix          : 1.1.1.5
Route Level     : 2                    MT Id           : 0
Rtm Preference  : 18                   Ttm Preference  : 11
Metric          : 10                   Last Action     : AddTnl
Num Ip NextHop  : 1                    Num SR-Tnl NextHop : 1
Mtu             : 1560
Mtu Prim        : 1564                 Mtu Backup      : -
Exclude from LFA : 0                   LFA Type        : -
Duplicate Pending : 0                  Tunnel Active State : Reported/Ack
SR Error        : SR_ERR_OK
NHOP: IP
-----
IsTunl  GIIfId/  IfId/ PgId  IsAdv  Label  IsLfaX
         TunlType LspId
-----
1.3.5.5      N      6      4      17      1      20605  0
-----
SID 606
-----
Label           : 20606                Adv System Id   : 0010.0100.1006
Prefix          : 1.1.1.6
Route Level     : 2                    MT Id           : 0
Rtm Preference  : 18                   Ttm Preference  : 11
Metric          : 20                   Last Action     : AddTnl
Num Ip NextHop  : 1                    Num SR-Tnl NextHop : 1
Mtu             : 1560
Mtu Prim        : 1564                 Mtu Backup      : -
Exclude from LFA : 0                   LFA Type        : -
Duplicate Pending : 0                  Tunnel Active State : Reported/Ack
SR Error        : SR_ERR_OK
NHOP: IP
-----
IsTunl  GIIfId/  IfId/ PgId  IsAdv  Label  IsLfaX
         TunlType LspId
-----
1.3.5.5      N      6      4      17      0      20606  0
-----
SID 611 Algorithm 128
-----
Label           : 20611                Adv System Id   : 0010.0100.1001
Prefix          : 1.1.1.1
    
```



```

Route Level      : 1                MT Id           : 0
Rtm Preference   : 15               Ttm Preference   : 11
Metric           : 10               Last Action      : TnlChange
Num Ip NextHop   : 1                Num SR-Tnl NextHop : 1
Mtu              : 1560
Mtu Prim        : 1564              Mtu Backup       : -
Exclude from LFA : 0                LFA Type         : -
Duplicate Pending : 0                Tunnel Active State : Reported/Ack
SR Error         : SR_ERR_OK
NHOP: IP
                IsTunl GIIfId/  IfId/ PgId  IsAdv Label  IsLfaX
                TunlType LspId
-----
1.1.3.1         N      4      2      19      1      20611  0
-----
SID 613
-----
Label           : 20613              Adv System Id    : 0010.0100.1003
Prefix          : 1.1.1.3            Type              : Local
Duplicate Pending : 0                Tunnel Active State : Reported/Ack
SR Error        : SR_ERR_OK
-----
SID 614 Algorithm 128
-----
Label           : 20614              Adv System Id    : 0010.0100.1004
Prefix          : 1.1.1.4            MT Id            : 0
Route Level     : 2                  Ttm Preference   : 11
Rtm Preference   : 18               Last Action      : AddTnl
Metric          : 20                Num SR-Tnl NextHop : 1
Num Ip NextHop   : 1                Mtu Backup       : -
Mtu              : 1560              LFA Type         : -
Mtu Prim        : 1564              Tunnel Active State : Reported/Ack
Exclude from LFA : 0
Duplicate Pending : 0
SR Error        : SR_ERR_OK
NHOP: IP
                IsTunl GIIfId/  IfId/ PgId  IsAdv Label  IsLfaX
                TunlType LspId
-----
1.2.3.2         N      5      3      15      0      20614  0
-----
SID 615 Algorithm 128
-----
Label           : 20615              Adv System Id    : 0010.0100.1005
Prefix          : 1.1.1.5            MT Id            : 0
Route Level     : 2                  Ttm Preference   : 11
Rtm Preference   : 18               Last Action      : AddTnl
Metric          : 10                Num SR-Tnl NextHop : 1
Num Ip NextHop   : 1                Mtu Backup       : -
Mtu              : 1560              LFA Type         : -
Mtu Prim        : 1564              Tunnel Active State : Reported/Ack
Exclude from LFA : 0
Duplicate Pending : 0
SR Error        : SR_ERR_OK
NHOP: IP
                IsTunl GIIfId/  IfId/ PgId  IsAdv Label  IsLfaX
                TunlType LspId
-----
1.3.5.5         N      6      4      17      1      20615  0
    
```

Table 505: IS-IS SR Database Output Fields

Label	Description
Label	The ILM MPLS label corresponding to the SID

Label	Description
Prefix	The route prefix and mask
Metric	Interface metric for Level 1 and Level 2; if none are set to 0

## sr-database

### Syntax

```
sr-database [sid sid] [prefix ip-address] [nh-type {sr | ldp | rsvp}] [algo algo-id] [detail]
```

### Context

[\[Tree\]](#) (tools>dump>router>ospf sr-database)

### Full Context

```
tools dump router ospf sr-database
```

### Description

This command displays OSPFv2 SR database information.

### Parameters

#### *sid*

Displays information for the specific segment identifier.

**Values** 0 to 524287

#### *ip-address*

Specifies the IP address in dotted decimal notation.

**Values** ipv4-address:

- a.b.c.d

ipv6-address:

- x:x:x:x:x:x [eight 16-bit pieces]
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF]H
- d: [0 to 255]D

#### *algo-id*

Displays the OSPFv2 database information for the specified algorithm identifier.

**Values** 0 to 255

### Platforms

All

## Output

The following output is an example of OSPFv2 SR database information.

### Output Example

```
*A:Dut-C# tools dump router ospf sr-database
=====
Rtr Base OSPFv2 Instance 0 Segment Routing Database
=====
SID          Label St Type Prefix          AdvRtr          Area Flags          Stitching
              Algo                               FRR
-----
2            100002 +R  T1 10.20.1.2/32
              0            10.20.1.2        0.0.0.0 [NnP      ] L(R)  -
3            100003 +R  LT1 10.20.1.3/32
              0            10.20.1.3        0.0.0.0 [NnP      ] -
5            100005 +R  T1 10.20.1.5/32
              0            10.20.1.5        0.0.0.0 [NnP      ] L(R)  -
1282         101282 +R  T1 10.20.1.2/32
              128          10.20.1.2        0.0.0.0 [NnP      ] -
1283         101283 +R  LT1 10.20.1.3/32
              128          10.20.1.3        0.0.0.0 [NnP      ] -
1285         101285 +R  T1 10.20.1.5/32
              128          10.20.1.5        0.0.0.0 [NnP      ] -
-----
No. of Entries: 6
-----
St:  R:reported I:incomplete W:wrong N:not reported F:failed
     +:SR-ack -:no route
Type: L:local M: mapping Srv Tx: route type
FRR:  L:Lfa R:RLfa T:Tilfa (R):Reported (F):Failed
     Ln, Rn, Tn: FRR providing node-protection
=====
*A:Dut-C# tools dump router ospf sr-database algo 128
=====
Rtr Base OSPFv2 Instance 0 Algo 128 Segment Routing Database
=====
SID          Label St Type Prefix          AdvRtr          Area Flags          Stitching
              Algo                               FRR
-----
1282         101282 +R  T1 10.20.1.2/32
              128          10.20.1.2        0.0.0.0 [NnP      ] -
1283         101283 +R  LT1 10.20.1.3/32
              128          10.20.1.3        0.0.0.0 [NnP      ] -
1285         101285 +R  T1 10.20.1.5/32
              128          10.20.1.5        0.0.0.0 [NnP      ] -
-----
No. of Entries: 3
-----
St:  R:reported I:incomplete W:wrong N:not reported F:failed
     +:SR-ack -:no route
Type: L:local M: mapping Srv Tx: route type
FRR:  L:Lfa R:RLfa T:Tilfa (R):Reported (F):Failed
     Ln, Rn, Tn: FRR providing node-protection
=====
```



```

0      60000 +R  T1 1.0.33.3/32
          10.20.1.3      0.0.0.0 [NnP  ] T(R) -
1      60001 +R  T1 1.0.44.4/32
          10.20.1.4      0.0.0.0 [NnP  ] Tn(R) -
2      60002 +R  LT1 1.0.55.5/32
          10.20.1.5      0.0.0.0 [NnP  ] -
3      60003 +R  T1 1.0.66.6/32
          10.20.1.6      0.0.0.0 [NnP  ] T(R) -
4      60004 +R  T1 1.0.11.1/32
          10.20.1.1      0.0.0.0 [NnP  ] Tn(R) -
5      60005 +R  T1 1.0.22.2/32
          10.20.1.2      0.0.0.0 [NnP  ] Tn(R) -
6      60006 +R  T1 10.20.1.3/32
          10.20.1.3      0.0.0.0 [NnP  ] T(R) -
7      60007 +R  T1 10.20.1.4/32
          10.20.1.4      0.0.0.0 [NnP  ] Tn(R) -
8      60008 +R  LT1 10.20.1.5/32
          10.20.1.5      0.0.0.0 [NnP  ] -
9      60009 +R  T1 10.20.1.6/32
          10.20.1.6      0.0.0.0 [NnP  ] T(R) -
10     60010 +R  T1 10.20.1.1/32
          10.20.1.1      0.0.0.0 [NnP  ] Tn(R) -
11     60011 +R  T1 10.20.1.2/32
          10.20.1.2      0.0.0.0 [NnP  ] Tn(R) -
    
```

-----  
 No. of Entries: 12  
 -----

St: R:reported I:incomplete W:wrong N:not reported F:failed  
 +:SR-ack -:no route  
 Type: L:local M: mapping Srv Tx: route type  
 FRR: L:Lfa R:RLfa T:TLfa (R):Reported (F):Failed  
 Rn: RLfa + node-protect Tn: TLfa + node-protect  
 =====

\*A:Dut-F# tools dump router ospf sr-database detail

=====

Rtr Base OSPFv2 Instance 0 Segment Routing Database (detail)

=====

SID	Label	Sts	Prefix	Type	AdvRtr	Area	Flags
TnID	FRR		AdvRtr				
	lsId				Type		
0	70000	+R	1.0.33.3/				
32	T1		10.20.1.3	0.0.0.1 [NnP ]	2	R(R)	
			7.16.0.9	10.20.1.2	0.0.0.0	T3	
			7.0.0.4	10.20.1.3	0.0.0.1	T1	<<<< Best
1	70001	+R	1.0.44.4/				
32	T1		10.20.1.4	0.0.0.0 [NnP ]	2	L(R)	
			7.16.0.5	10.20.1.2	0.0.0.1	T3	
			7.0.0.4	10.20.1.4	0.0.0.0	T1	<<<< Best
2	70002	+R	1.0.55.5/				
32	T1		10.20.1.5	0.0.0.0 [NnP ]	2	R(R)	
			7.16.0.3	10.20.1.2	0.0.0.1	T3	
			7.0.0.4	10.20.1.5	0.0.0.0	T1	<<<< Best
3	70003	+R	1.0.66.6/				
32	LT1		10.20.1.6	0.0.0.1 [NnP ]	0	-	
			7.16.0.8	10.20.1.2	0.0.0.0	T3	
			7.0.0.6	10.20.1.6	0.0.0.1	T1	<<<< Best
4	70004	+R	1.0.11.1/				
32	T1		10.20.1.1	0.0.0.1 [NnP ]	2	L(R)	
			7.16.0.13	10.20.1.2	0.0.0.0	T3	
			7.0.0.4	10.20.1.1	0.0.0.1	T1	<<<< Best
5	70005	+R	1.0.22.2/				

```

32  T1      10.20.1.2      0.0.0.1 [NnP      ]      2 R(R)
      7.16.0.11      10.20.1.2      0.0.0.0      T3
      7.0.0.6        10.20.1.2      0.0.0.1      T1 <<<< Best
6  70006 +R      10.20.1.3/
32  T1      10.20.1.3      0.0.0.1 [NnP      ]      2 R(R)
      7.16.0.10      10.20.1.2      0.0.0.0      T3
      7.0.0.5        10.20.1.3      0.0.0.1      T1 <<<< Best
7  70007 +R      10.20.1.4/
32  T1      10.20.1.4      0.0.0.0 [NnP      ]      2 L(R)
      7.16.0.6        10.20.1.2      0.0.0.1      T3
      7.0.0.5        10.20.1.4      0.0.0.0      T1 <<<< Best
8  70008 +R      10.20.1.5/
32  T1      10.20.1.5      0.0.0.0 [NnP      ]      2 R(R)
      7.16.0.4        10.20.1.2      0.0.0.1      T3
      7.0.0.5        10.20.1.5      0.0.0.0      T1 <<<< Best
9  70009 +R      10.20.1.6/
32  LT1     10.20.1.6      0.0.0.0 [NnP      ]      0 -
      7.16.0.2        10.20.1.2      0.0.0.1      T3
      7.0.0.7        10.20.1.6      0.0.0.0      T1 <<<< Best
10 70010 +R      10.20.1.1/
32  T1      10.20.1.1      0.0.0.1 [NnP      ]      2 L(R)
      7.16.0.12      10.20.1.2      0.0.0.0      T3
      7.0.0.5        10.20.1.1      0.0.0.1      T1 <<<< Best
11 70011 +R      10.20.1.2/
32  T1      10.20.1.2      0.0.0.0 [NnP      ]      2 R(R)
      7.16.0.7        10.20.1.2      0.0.0.1      T3
      7.0.0.7        10.20.1.2      0.0.0.0      T1 <<<< Best
994 70994 +R      1.0.44.4/
32  T1      10.20.1.5      0.0.0.0 [NnPB     ]      0 -
      7.16.0.1        10.20.1.5      0.0.0.0      T1 <<<< Best
995 70995 +R      1.0.55.5/
32  T1      10.20.1.4      0.0.0.0 [NnPB     ]      0 -
      7.16.0.1        10.20.1.4      0.0.0.0      T1 <<<< Best
996 70996 +R      1.0.22.2/
32  LT1     10.20.1.6      0.0.0.1 [NnPB     ]      0 -
997 70997 -      1.0.66.6/
32  T1      10.20.1.2      0.0.0.1 [NnPB     ]      - -
      7.16.0.1        10.20.1.2      0.0.0.1      T1 <<<< Best
998 70998 +R      1.0.33.3/
32  T1      10.20.1.1      0.0.0.1 [NnPB     ]      0 -
      7.16.0.1        10.20.1.1      0.0.0.1      T1 <<<< Best
999 70999 +R      1.0.11.1/
32  T1      10.20.1.3      0.0.0.1 [NnPB     ]      0 -
      7.16.0.1        10.20.1.3      0.0.0.1      T1 <<<< Best
    
```

-----  
 Sts: R:reported I:incomplete W:wrong N:not reported F:failed +:SR-ack -  
 :no route

Type: L:local M: mapping Srv Tx: route type

FRR: L:Lfa R:RLfa (R):Reported (F):Failed

=====  
 \*A:Dut-F#

## 22.3 sr-label

### sr-label

#### Syntax

sr-label

#### Context

[\[Tree\]](#) (show>router>bgp sr-label)

#### Full Context

show router bgp sr-label

#### Description

This command displays BGP SR label information.

#### Platforms

All

## 22.4 sr-lfa-coverage

### sr-lfa-coverage

#### Syntax

sr-lfa-coverage [flex-algo {*flex-algo-id* | all}]

#### Context

[\[Tree\]](#) (show>router>isis sr-lfa-coverage)

#### Full Context

show router isis sr-lfa-coverage

#### Description

This command displays IS-IS SR LFA coverage information. This corresponds to the coverage provided by the various LFA algorithms for SR-ISIS tunnel, SR-TE LSP, and LDP FEC if the **fast-reroute backup-sr-tunnel** option is enabled. The LFA algorithms activate the backup next hops in the following preference order:

1. TI-LFA
2. LFA

### 3. R-LFA

#### Parameters

**flex-algo** *flex-algo-id*

Displays SR LFA coverage information for the specified algorithm.

**Values** 128 to 255

**all**

Displays all the flexible algorithms that are configured.

**Values** 128 to 255, all

#### Platforms

All

#### Output

The following output is an example of SR LFA coverage information, and [Table 506: IS-IS SR LFA Coverage Output Fields](#) describes the output fields.

#### Output Example

```
*A:Dut-C>config>router>isis# show router isis 0 sr-lfa-coverage
=====
Rtr Base ISIS Instance 0 SR LFA Coverage
=====
MT-ID  SidType  Level  Proto    LFA      RLFA     TILFA    Coverage
-----
      node-sid          4      40%     6(60%)   0(0%)    10/10(100%)
      adj-sid           0(0%)   2(100%)  0(0%)    2/2(100%)
=====
```

#### Output Example

```
A:Dut-A# show router isis 0 sr-lfa-coverage flex-algo 128
=====
Rtr Base ISIS Instance 0 Flex-Algo 128 SR LFA Coverage
=====
MT-ID  SidType  Level  Proto  LFA      RLFA     TILFA    Coverage
-----
No Matching Entries
=====
A:Dut-A# show router isis 0 sr-lfa-coverage flex-algo all
=====
Rtr Base ISIS Instance 0 Flex-Algo 128 SR LFA Coverage
=====
MT-ID  SidType  Level  Proto  LFA      RLFA     TILFA    Coverage
-----
No Matching Entries
=====
```

[Table 506: IS-IS SR LFA Coverage Output Fields](#) describes the IS-IS SR LFA coverage output fields.



Table 506: IS-IS SR LFA Coverage Output Fields

Label	Description
MT-ID	Displays the MT identification
SidType	Displays the SID type
Level	Displays the level
Proto	Displays the protocol
LFA	Displays the LFA
RLFA	Displays the RLFA
TIFLA	Displays the TI-LFA
Coverage	Displays the percentage of coverage

## sr-lfa-coverage

### Syntax

**sr-lfa-coverage** [**area** *area-id*] [**flex-algo** { *flex-algo-id* | **all**}]

### Context

[\[Tree\]](#) (show>router>ospf sr-lfa-coverage)

### Full Context

show router ospf sr-lfa-coverage

### Description

This command displays the details of the OSPF SR LFA coverage. This corresponds to the coverage provided by the various LFA algorithms for SR-OSPF tunnel, SR-TE LSP, and LDP FEC if **fast-reroute backup-sr-tunnel** option is enabled. The LFA algorithms activate the backup next hops using the preference order:

1. TI-LFA
2. LFA
3. R-LFA

### Parameters

**area** *area-id*

Displays all interfaces configured in this area.

**Values** ip-address — a.b.c.d

area — 0 to 4294967295

**flex-algo flex-algo-id**

Displays the OSPF SR LFA coverage details for the specified segment routing algorithm.

**Values** 128 to 255

**flex-algo all**

Displays the OSPF SR LFA coverage details for all segment routing algorithms.

**Platforms**

All

**Output**

The following output is an example of OSPF SR LFA coverage, and [Table 507: OSPF SR LFA Coverage Output Fields](#) describes the output fields.

**Output Example**

```
*A:Dut-C# show router ospf sr-lfa-coverage flex-algo 128
=====
Rtr Base OSPFv2 Instance 0 Flex-Algo 128 SR LFA Coverage
=====
SidType      Area          LFA          RLFA         TILFA        Coverage
-----
node-sid     0.0.0.0      2(100%)     0(0%)       0(0%)       2/2(100%)
=====
*A:Dut-C#
```

Table 507: OSPF SR LFA Coverage Output Fields

Label	Description
SidType	Displays the SID type.
Area	Displays the OSPF area.
LFA	Displays the LFA.
RLFA	Displays the RLFA.
TIFLA	Displays the TI-LFA.
Coverage	Displays the percentage of coverage.

**sr-lfa-coverage**

**Syntax**

**sr-lfa-coverage** [area *area-id*]

## Context

[\[Tree\]](#) (show>router>ospf3 sr-lfa-coverage)

## Full Context

show router ospf3 sr-lfa-coverage

## Description

This command displays the details of the OSPF SR LFA coverage. This corresponds to the coverage provided by the various LFA algorithms for SR-OSPF tunnel, SR-TE LSP, and LDP FEC if **fast-reroute backup-sr-tunnel** option is enabled. The LFA algorithms activate the backup next hops using the preference order:

1. TI-LFA
2. LFA
3. R-LFA

## Parameters

**area** *area-id*

Displays all interfaces configured in this area.

**Values** ip-address — a.b.c.d  
 area — 0 to 4294967295

## Platforms

All

## Output

### Output Example

```
*A:Dut-C>>config>router>ospf3# show router ospf3 0 sr-lfa-coverage
=====
Rtr Base OSPFv3 Instance 0 SR LFA Coverage
=====
SidType      Area          LFA           RLFA          TILFA         Coverage
-----
node-sid     0.0.0.1       4 (40%)       6 (60%)       0 (0%)        10/10 (100%)
adj-sid      0.0.0.1       0 (0%)        2 (100%)      0 (0%)        2/2 (100%)
=====
```

The following table describes the OSPF SR LFA coverage output fields.

Table 508: OSPF SR LFA Coverage Output Fields

Label	Description
SidType	Displays the SID type.
Area	Displays the OSPF area.

Label	Description
LFA	Displays the LFA.
RLFA	Displays the RLFA.
TIFLA	Displays the TI-LFA.
Coverage	Displays the percentage of coverage.

## 22.5 sr-lfa-info

### sr-lfa-info

#### Syntax

```
sr-lfa-info [ipv4-unicast | ipv6-unicast | mt mt-id-number] [prefix ip-prefix[/prefix-length]] [algo algo-id]  
[detail]
```

#### Context

[\[Tree\]](#) (show>router>isis sr-lfa-info)

#### Full Context

```
show router isis sr-lfa-info
```

#### Description

This command displays IS-IS SR LFA information.

#### Parameters

##### **ipv4-unicast**

Keyword used to display IPv4 unicast parameters.

##### **ipv6-unicast**

Keyword used to display IPv6 unicast parameters.

##### **mt-id-number**

Displays the MT ID parameters.

**Values** 0 | 2 | 3 | 4

##### **ip-prefix/prefix-length**

Displays the specified IP prefix.

**Values** *ipv4-prefix* — a.b.c.d (host bits must be 0)

*ipv4-prefix-length* — 0 to 32

*ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d  
 x — 0 to FFFF (hexadecimal)  
 d — 0 to 255 (decimal)  
*ipv6-prefix-length* — 0 to 128

**algo-id**

Filters information based on the specific algorithm only.

**Values** 0 | 128 to 255

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of SR LFA information, and [Table 509: IS-IS SR LFA information Output Fields](#) describes the output fields.

**Output Example**

```
show router isis sr-lfa-info prefix 192.0.2.2/32 algo 253

=====
Rtr Base ISIS Instance 0 SR LFA Info
=====
Prefix                               Algo      MT
NextHop
LFA-NextHop                           LfaType (Pr-Type)
Backup-Node                             NodeType  SID      SID-Type
-----
192.0.2.1/32                           253      0
192.168.13.1
192.168.36.2(L)                         TI-LFA (Link)
1920.0000.2006                           P-Node   524285   Adjacency
1920.0000.2004                           TR-Node  524287   Adjacency
1920.0000.2002                           TR-Node  524287   Adjacency
1920.0000.2001                           Q-Node   -        -
-----
No. of Entries: 1
Pr-Type      : Link = linkProtection, Node = nodeProtection
=====
```

*Table 509: IS-IS SR LFA information Output Fields*

Label	Description
Rtr Base ISIS Instance 0 SR LFA Info	
Prefix	Displays the prefix IP address
Algo	Displays the algorithm ID

Label	Description
MT	Displays the Multi-Topology value
NextHop	Displays the next-hop IP address
LFA-NextHop	Displays the LFA next-hop IP address
LfaType (Pr-Type)	Displays the LFA type
Backup-Node	Displays the backup node system ID
NodeType	Displays the node type
SID	Displays the SID value
SID-Type	Displays the SID type
No. of Entries	Displays the total number of entries

The following output is an example of detailed SR LFA information, and [Table 510: IS-IS SR LFA detailed information Output Fields](#) describes the output fields.

### Output Example

```

show router isis sr-lfa-info prefix 192.0.2.2/32 algo 253 detail

=====
Rtr Base ISIS Instance 0 SR LFA Info (detail)
=====
-----
SR Tunnel Prefix : 192.0.2.1/32
-----
Algorithm       : 253
MT              : 0
NextHop        : 192.168.13.1
LFA-NextHop    : 192.168.36.2
LFA-Type       : TI-LFA
LFA-Protection : Link Protection
-----
Displaying Backup-Node-Info
-----
Node-count      : 4
Node-SysID     : 1920.0000.2006
Node-Type      : P-Node
SID            : 524285
SID-Type       : Adjacency
Node-SysID     : 1920.0000.2004
Node-Type      : TR-Node
SID            : 524287
SID-Type       : Adjacency
Node-SysID     : 1920.0000.2002
Node-Type      : TR-Node
SID            : 524287
SID-Type       : Adjacency
Node-SysID     : 1920.0000.2001
Node-Type      : Q-Node
SID            : -
SID-Type       : -
-----
    
```

```
No. of Entries: 1
=====
```

Table 510: IS-IS SR LFA detailed information Output Fields

Label	Description
Rtr Base ISIS Instance 0 SR LFA Info (detail)	
SR Tunnel Prefix	Displays the SR tunnel prefix IP address
Algorithm	Displays the algorithm ID
MT	Displays the MT value
NextHop	Displays the next-hop IP address
LFA-NextHop	Displays the LFA next-hop IP address
LFA-Type	Displays the LFA type
LFA-Protection	Displays the LFA protection type
Displaying Backup-Node-Info	
Node-count	Displays the number of nodes
Node-SysID	Displays the node system ID
Node-Type	Displays the node type
SID	Displays the SID value
SID-Type	Displays the SID type
No. of Entries	Displays the total number of entries

## 22.6 sr-policies

### sr-policies

#### Syntax

**sr-policies**

#### Context

[\[Tree\]](#) (clear>router>seg-rt sr-policies)

#### Full Context

clear router segment-routing sr-policies

## Description

Commands in this context clear SR policies statistics.

## Platforms

All

sr-policies

## Syntax

sr-policies

## Context

[\[Tree\]](#) (show>router>seg-rt sr-policies)

## Full Context

show router segment-routing sr-policies

## Description

Commands in this context display SR policy information.

## Platforms

All

sr-policies

## Syntax

sr-policies

## Context

[\[Tree\]](#) (monitor>router>seg-rt sr-policies)

## Full Context

monitor router segment-routing sr-policies

## Description

Commands in this context monitor Segment Routing SR Policy Statistics.

## Platforms

All



## 22.7 sr-policy-ipv4

### sr-policy-ipv4

#### Syntax

```
sr-policy-ipv4 [rd rd] [color color] [endpoint ip-address]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes sr-policy-ipv4)

#### Full Context

```
show router bgp routes sr-policy-ipv4
```

#### Description

This command displays BGP SR policy IPv4 routes.

#### Parameters

##### *ip-address*

Specifies the endpoint IPv4 address.

**Values** a.b.c.d

#### Platforms

All

## 22.8 sr-policy-ipv6

### sr-policy-ipv6

#### Syntax

```
sr-policy-ipv6 [rd rd] [color color] [endpoint ipv6-address]
```

```
sr-policy-ipv6 hunt [rd rd] [color color] [endpoint ipv6-address]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes sr-policy-ipv6)

#### Full Context

```
show router bgp routes sr-policy-ipv6
```

### Description

This command displays BGP SR policy IPv6 routes.

### Parameters

#### *ipv6-address*

Specifies the endpoint IPv6 address, up to 64 characters

### Platforms

All

## 22.9 sr-te

### sr-te

### Syntax

sr-te

### Context

[\[Tree\]](#) (clear>router>mpls>lsp>auto-lsp sr-te)

### Full Context

clear router mpls lsp auto-lsp sr-te

### Description

This command resets and restarts all auto SR-TE LSPs.

### Platforms

All

### sr-te

### Syntax

sr-te

### Context

[\[Tree\]](#) (clear>router>mpls>lsp sr-te)

### Full Context

clear router mpls lsp sr-te

## Description

This command resets and restarts all SR-TE LSPs.

## Platforms

All

## 22.10 sr-te-cspf

### sr-te-cspf

#### Syntax

```
sr-te-cspf [path-computation-method path-computation-method] to ip-address [path path-name] [from  
ip-address] [include-bitmap bitmap] [exclude-bitmap bitmap] [hop-limit limit] [metric-type-te] [  
local-sr-protection local-sr-protection] [label-stack-reduction] [max-sr-labels label-stack-size] [  
exclude-address excl-addr [excl-addr]] [exclude-node excl-node-id [excl-node-id]] [skip-interface  
interface-name]
```

#### Context

[\[Tree\]](#) (tools>perform>router>mpls sr-te-cspf)

#### Full Context

```
tools perform router mpls sr-te-cspf
```

#### Description

This command computes and returns one or more SR-TE paths and corresponding label stack to a given destination router and with the specified constraints.

By default, or when the user specifies the value of **ip-to-label** for the **path-computation-method** parameter, MPLS passes the **to** path and the **from** parameters to TE-DB, which converts the list of hops into a label stack by scanning the TE database for adjacency and node SID information that belongs to the router or link identified by each hop address. If the conversion is successful, the TE database returns the actual selected hop SIDs plus labels, as well as the configured path hop addresses that were used as the input for this conversion. None of the TE constraint parameters are used in this path computation method.

When the user specifies the value of **local-cspf** for the **path-computation-method** parameter, MPLS passes all parameters of the **tools** command, including the TE constraint parameters. In this case, a full CSPF is run using these parameters.

When the user runs this **tools** command without specifying a path name, CSPF returns the set of candidate ECMP paths. When the user specifies a path name, CSPF returns a single path, which is selected randomly similar to a configured SR-TE LSP, with the **path-computation-method local-cspf** command enabled.

#### Parameters

##### to *ip-address*

Specifies the destination address.

**Values** a.b.c.d

**path *path-name***

Specifies the path name, up to 64 characters.

**from *ip-address***

Specifies the originating IP address.

**Values** a.b.c.d

***path-computation-method path-computation-method***

Specifies the path computation method of the LSP path.

**Values** ip-to-label, local-cspf

***hop-limit limit***

Specifies the maximum number of hops for the path.

**Values** 0 to 255

**exclude-bitmap *bitmap***

Specifies a bit-map of the admin groups that should be excluded in the path computation. Accepted in decimal, hex, or binary.

**Values** 0 to 4294967295

**include-bitmap *bitmap***

Specifies a bit-map of the admin groups that should be included in the path. Accepted in decimal, hex, or binary.

**Values** 0 to 4294967295

**metric-type-te**

Specifies the use of the traffic engineering metric to optimize the path. By default, the link IGP metric is used.

**local-sr-protection**

Specifies the local LFA protection desired for the CSPF computed explicit path with adjacency SIDs.

**Values** none, preferred, mandatory

**label-stack-reduction**

Specifies to apply label stack reduction to the CSPF computed explicit path with adjacency SIDs.

***max-sr-labels label-stack-size***

Specifies the maximum label stack size of the CSPF computed path with or without label stack reduction.

**Values** 1 to 11

**exclude-address** *ip-addr*

Specifies a list of up to eight IP addresses that should be excluded in the path computation.

**Values** a.b.c.d

**exclude-node** *excl-node-id*

Specifies a list of up to eight addresses that should be excluded during the path computation.

**Values** a.b.c.d

**skip-interface** *interface-name*

Specifies an interface name, up to 32 characters, that should be skipped during the path computation.

**Platforms**

All

## 22.11 sr-te-lsp

### sr-te-lsp

**Syntax**

**sr-te-lsp** [*lsp-name*] [status {up | down}] [detail] path [*path-name*] [auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-srte}] [family *family*]

**sr-te-lsp count**

**sr-te-lsp** [*lsp-name*] [detail] [ auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-srte}] [family *family*]

**sr-te-lsp** [*lsp-name*] [status {up | down}] [to {*ip-address* | *ipv6-address*}] [detail] [auto-lsp { all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-srte}] [family *family*]

**sr-te-lsp** [*lsp-name*] activepath [ auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-srte}] [family *family*]

**sr-te-lsp** [*lsp-name*] egress-stats

**sr-te-lsp** [*lsp-name*] path [*path-name*] [ auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-srte}] mbb

**sr-te-lsp** [*lsp-name*] path [*path-name*] [auto-lsp {all | mesh-p2p-srte | one-hop-p2p-srte | on-demand-p2p-srte}] [detail] [dns]

**Context**

[\[Tree\]](#) (show>router>mpls sr-te-lsp)

## Full Context

```
show router mpls sr-te-lsp
```

## Description

This command displays SR-TE LSP information.

## Parameters

### *lsp-name*

Specifies the SR-TE LSP name, up to 64 characters.

### **status**

Keyword used to filter the output based on the status of the SR-TE LSP.

**Values** up, down

### **detail**

Keyword used to display detailed information.

### *path-name*

Specifies the SR-TE LSP path name, up to 64 characters.

### **auto-lsp**

Keyword used to display the type of automatic LSP.

**Values** all, mesh-p2p-srte, one-hop-p2p-srte, on-demand-p2p-srte

### *family*

Displays the family of IP addresses.

**Values** ipv4, ipv6

### **count**

Keyword used to display the total number of SR-TE LSPs.

### **to {ip-address | ipv6-address}**

Keyword used to display the IPv4 or IPv6 address of the egress router for the LSP.

### **egress-stats**

Keyword used to display the traffic statistics for the specified SR-TE LSP or for all SR-TE LSPs if none is explicitly specified. Traffic statistics are provided for primary path, secondary path if any, and secondary standby paths, if any. Statistics are preserved across switchover only for primary and secondary standby paths.

### **mbb**

Keyword used to display make-before-break (MBB) information.

### **activepath**

Keyword used to display the SR-TE active paths, which are candidate paths selected as the best paths by the SR policy make-before-break (MBB) information.

### **dns**

Keyword used to display reverse DNS resolution of actual and explicit hop information.

## Platforms

All

## Output

The following outputs are examples of MPLS SR-TE LSP information. The associated tables describe the output fields.

### Output Example

The following outputs apply to an SR-TE LSP for which the path is computed using the local SR-TE CSPF method.

```
*A:Dut-C# show router mpls sr-te-lsp "C_F_70000"
=====
MPLS SR-TE LSPs (Originating)
=====
LSP Name                To                Tun   Protect  Adm  Opr
Id                      Path
-----
C_F_70000              10.20.1.6        1     N/A      Up   Up
-----
LSPs : 1
=====
```

```
*A:Dut-C# show router mpls sr-te-lsp "C_F_70000" detail
=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
Legend :
+ - Inherited
=====
Type : Originating
-----
LSP Name      : C_F_70000
LSP Type      : SrTeLsp                LSP Tunnel ID      : 1
LSP Index     : 65536                  TTM Tunnel Id     : 655362
From          : 10.20.1.3              To                 : 10.20.1.6
Adm State     : Up                    Oper State         : Up
LSP Up Time   : 0d 11:40:44            LSP Down Time     : 0d 00:00:00
Transitions   : 3                     Path Changes       : 3
Retry Limit   : 0                      Retry Timer        : 10 sec
Hop Limit     : 255                    Negotiated MTU    : 1484
PathCompMethod : local-cspf
FallbkPathComp : not-applicable
Metric        : 1000
Local Sr Protec* : preferred           Metric Type        : igp
Load Bal Wt   : N/A                   Label Stack Reduction: Enabled
Include Grps  :                       ClassForwarding    : Disabled
None          :                       Exclude Grps       :
BFD Template  : None                  BFD Ping Intvl    : N/A
BFD Enable    : False                 BFD Failure-action : None
WaitForUpTimer : 4
Revert Timer  : Disabled               Next Revert In    : N/A
Entropy Label : Enabled+                    Oper Entropy Label : Enabled
Negotiated EL : Disabled
VprnAutoBind  : Enabled
IGP Shortcut  : Enabled                 BGP Shortcut      : Enabled
IGP LFA       : Disabled               IGP Rel Metric    : Disabled
BGPTransTun   : Enabled
Oper Metric   : 1000
```

```
PCE Report      : Disabled+
PCE Control     : Disabled
Max SR Labels   : 6                Additional FRR Labels: 1
Path Profile    : None
Admin Tags     : None
Primary(a)     : C_F_70000
Up Time        : 0d 11:40:44
Bandwidth      : 0 Mbps
=====
* indicates that the corresponding row element may have been truncated.
```

```
*A:Dut-C# show router mpls sr-te-lsp "C_F_70000" activepath
=====
MPLS LSP: C_F_70000 (active paths)
=====
Legend :
# - Manually switched path
#F - Manually forced switched path
=====
LSP Name      : C_F_70000
LSP Id       : 26114
Path Name     : C_F_70000
Active Path   : Primary
To           : 10.20.1.6                LSP Type      : SR-TE
=====
```

```
*A:Dut-C# tools perform router mpls sr-te-cspf to 10.20.1.6 path "C_F_70000" hop-
limit 3 label-stack-reduction path-computation-method local-cspf max-sr-labels 4
Req CSPF TE path
From: this node To: 10.20.1.6
CSPF TE Path
To: 10.20.1.6
[1] Source Add 10.20.1.3    Cost 4000
Hop 1 -> Label 524242 NH 10.10.2.3 --> 10.10.2.1 (10.20.1.1) Cost 1000 Color 0x0
Hop 2 -> Label 434687 NH :: --> 10.20.1.2 (10.20.1.2) Cost 1000 Color 0x0
Hop 3 -> Label 435087 NH :: --> 10.20.1.4 (10.20.1.4) Cost 1000 Color 0x0
Hop 4 -> Label 435487 NH :: --> 10.20.1.6 (10.20.1.6) Cost 1000 Color 0x0
*A:Dut-C#
```

```
*A:Dut-C# tools perform router mpls resignal sr-te-lsp "C_F_70000" path "C_F_70000"
*A:Dut-C#
1 2019/07/03 19:36:37.768 UTC WARNING: MPLS #2014 Base VR 1:
"LSP path C_F_70000::C_F_70000 resignaled as a result of manualResignal MBB"
```

```
*A:Dut-C# tools perform router mpls sr-te-cspf to 10.20.1.6 path "C_F_70000" hop-
limit 3 label-stack-reduction path-computation-method local-cspf max-sr-labels 4
Req CSPF TE path
From: this node To: 10.20.1.6
CSPF TE Path
To: 10.20.1.6
[1] Source Add 10.20.1.3    Cost 4000
Hop 1 -> Label 524242 NH 10.10.2.3 --> 10.10.2.1 (10.20.1.1) Cost 1000 Color 0x0
Hop 2 -> Label 434687 NH :: --> 10.20.1.2 (10.20.1.2) Cost 1000 Color 0x0
Hop 3 -> Label 435087 NH :: --> 10.20.1.4 (10.20.1.4) Cost 1000 Color 0x0
Hop 4 -> Label 435487 NH :: --> 10.20.1.6 (10.20.1.6) Cost 1000 Color 0x0
*A:Dut-C#
```

```
*A:Dut-C# tools perform router mpls resignal sr-te-lsp "C_F_70000" path "C_F_70000"
*A:Dut-C#
```



```
1 2019/07/03 19:36:37.768 UTC WARNING: MPLS #2014 Base VR 1:
"LSP path C_F_70000::C_F_70000 resigned as a result of manualResignal MBB"
```

### Output Example

The following show outputs display an LSP with BFD configured to use controlled return path. The following tables describe the MPLS SR-TE LSP detail fields and the MPLS SR-TE LSP path detail fields.

```
*A:Dut-C# /show router mpls sr-te-lsp detail

=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
Legend :
+ - Inherited
=====
-----
Type : Originating
-----
LSP Name      : to_A_SR_TE
LSP Type      : SrTeLsp                LSP Tunnel ID      : 1
LSP Index     : 65536                  TTM Tunnel Id     : 655362
From          : 3.3.3.3
To            : 1.1.1.1
Adm State     : Up                      Oper State         : Up
LSP Up Time   : 0d 00:00:05            LSP Down Time     : 0d 00:00:00
Transitions   : 1                      Path Changes      : 1
Retry Limit   : 0                      Retry Timer        : 2 sec
Hop Limit     : 255                    Negotiated MTU    : 1496
PathCompMethod : none
FallbkPathComp : not-applicable
Metric        : N/A
Local Sr Protec* : preferred           Label Stack Reduction: Disabled
Load Bal Wt   : N/A                   ClassForwarding   : Disabled
Include Grps  :                        Exclude Grps      :
None          :                        None
Egress Stats  : Disabled
BFD Template  : None                  BFD Ping Intvl    : N/A
BFD Enable    : False                 BFD Failure-action : None
WaitForUpTimer : 4
ReturnPathLabel : None

Revert Timer  : Disabled               Next Revert In    : N/A
Entropy Label : Enabled+               Oper Entropy Label : Enabled
Negotiated EL : Disabled               Override Tunnel ELC : Disabled
VprnAutoBind  : Enabled
IGP Shortcut  : Enabled                BGP Shortcut      : Enabled
IGP LFA       : Disabled               IGP Rel Metric    : Disabled
BGPTransTun   : Enabled
Oper Metric    : 16777215
PCE Report    : Disabled+
PCE Control   : Disabled
Max SR Labels : 6                      Additional FRR Labels: 1
Path Profile   : None
Admin Tags    : None

Primary(a)    : path_A                  Up Time           : 0d 00:00:09
Bandwidth     : 0 Mbps
Secondary     : path_A2
Down Time     : 0d 00:00:50
Bandwidth     : 0 Mbps
-----
Type : Originating
```

```

-----
LSP Name      : template-1.1.1.1-671747
LSP Type      : OneHop2PSrTe          LSP Tunnel ID      : 16386
LSP Index     : 81921                 TTM Tunnel Id     : 671747
From          : 30.30.2.2
To            : 1.1.1.1
Adm State     : Up                    Oper State         : Up
LSP Up Time   : 0d 00:00:08          LSP Down Time     : 0d 00:00:00
Transitions   : 1                    Path Changes      : 1
Retry Limit   : 0                    Retry Timer       : 30 sec
PathCompMethod : none
FallbkPathComp : not-applicable
Metric        : N/A
Local Sr Protec* : preferred          Label Stack Reduction: Disabled
Load Bal Wt   : N/A                  ClassForwarding   : Disabled
Include Grps  :                      Exclude Grps      :
None
Egress Stats  : Disabled
BFD Template  : srte                 BFD Ping Intvl   : N/A
BFD Enable    : True                 BFD Failure-action : None
WaitForUpTimer : 4
ReturnPathLabel : 35002

Revert Timer  : Disabled              Next Revert In    : N/A
Entropy Label : Enabled+             Oper Entropy Label : Enabled
Negotiated EL : Disabled             Override Tunnel ELC : Disabled
VprnAutoBind : Enabled
IGP Shortcut  : Enabled              BGP Shortcut      : Enabled
IGP LFA       : Disabled             IGP Rel Metric    : Disabled
BGPTransTun   : Enabled
Oper Metric    : 16777215
OriginTemplName : template

Admin Tags    : None
PCE Report    : Disabled+
PCE Control   : Disabled
Max SR Labels : 6                    Additional FRR Labels: 1
Path Profile   : None

Primary(a)    : path_A                Up Time           : 0d 00:00:09
Bandwidth     : 0 Mbps
=====
* indicates that the corresponding row element may have been truncated.
    
```

Table 511: Show Router MPLS SR-TE-LSP Detail Output Fields

Label	Description
LSP Name	The name of the LSP
LSP Type	The type of the LSP
LSP Tunnel ID	The tunnel ID number for the LSP used in the interaction with PCC/PCE
LSP Index	The LSP index used for indexing the LSP in the MIB table shared with the RSVP-TE LSP

Label	Description
TTM Tunnel Id	The tunnel ID number for the tunnel representing the LSP in the tunnel table
From	The IP address for the ingress router for the LSP
To	The IP address for the egress router for the LSP
Admin State	The administrative state of the LSP
Oper State	The operational state of the LSP
LSP Up Time	The length of time the LSP has been operational
LSP Down Time	The amount of time the LSP has been down
Transitions	The number of transitions that have occurred for the LSP
Path Changes	The number of times the path has changed
Retry Limit	The number of attempts that the software makes to reestablish the LSP after it has failed
Retry Timer	The time, in seconds, for LSP reestablishment attempts after LSP failure
Hop Limit	The maximum number of hops that an LSP can traverse, including the ingress and egress routers
Negotiated MTU	The size of the maximum transmission unit (MTU) that is negotiated during establishment of the LSP
PathCompMethod	pce — PCE path computation method is configured local-cspf — Local CSPF path computation method is configured none — No computation method is configured
FallbkPathComp	none — No fallback method is configured local-cspf — Local CSPF fallback is configured
Metric	The cost of the TE path for the LSP
Local Sr Protection	The local LFA protection wanted for the CSPF computed explicit path with adjacency SIDs
Label Stack Reduction	The label stack reduction applied to the CSPF computed explicit path with adjacency SIDs
Load Bal Wt	The load balance weight value
Include Grps	The included groups. None indicates that no groups are included

Label	Description
Exclude Grps	The excluded groups. None indicates that no groups are excluded
Egress Stats	The traffic statistics for the specified SR-TE LSP or for all SR-TE LSPs if none is explicitly specified. Traffic statistics are provided for primary path, secondary path, if any, and secondary standby paths, if any. Statistics are preserved across switch over for primary and secondary standby paths
BFD Template	The BFD template name
BFD Ping Intvl	The BFD ping interval
BFD Enable	The operational state of the BFD on the LSP
BFD Failure-action	The failure action that is configured for the BFD LSP
WaitForUpTimer	The BFD wait for up timer value
ReturnPathLabel	The return path label added to the MPLS label to the bottom of the label stack for S-BFD. With this configured, the S-BFD packet returns to the initiator through the MPLS return path
Revert Timer	The length of time before a named LSP using the secondary path to revert to the primary path
Next Revert In	The next revert interval
Entropy Label	The enabled or disabled status for the entropy label
Oper Entropy Label	Indicates that the entropy label is in use
Negotiated EL	Indicates if the entropy label is negotiated for the LSP
Override Tunnel ELC	The enabled or disabled status of the override tunnel ELC
VRPNAutoBind	The enabled or disabled status for VRPN autobind
IGP Shortcut	The enabled or disabled status for IGP shortcut
BGP Shortcut	The enabled or disabled status for BGP shortcut
IGP LFA	The enabled or disabled status for IGP LFA
BGPTransTun	The enabled or disabled status for BGP transport tunnels
Oper Metric	The enabled or disabled status of the operational metric
PCE Report	The enabled or disabled status of PCE report
PCE Control	The enabled or disabled status of PCE control

Label	Description
Max SR Labels	The maximum label stack size of the computed path with or without label stack reduction
Additional FRR Labels	The additional FRR labels value that the router is configured to take into account during TI-LFA
Path Profile	The path profile value for the LSP
Admin Tags	The administrative tag names. None indicates that there are no tags.
Primary (a)	The preferred path for the LSP
Up Time	The total time in increments that the LSP path has been operational
Bandwidth	The amount of bandwidth in Mb/s reserved for the LSP path
Secondary	The alternate path that the LSP uses if the primary path is not available
Downtime	The time that the LSP has been down
Bandwidth	The amount of bandwidth in Mb/s reserved for the LSP path

```
*A:Dut-C# /show router mpls sr-te-lsp path detail
```

```
=====
MPLS SR-TE LSP
Path (Detail)
=====
```

```
Legend :
```

```

S      - Strict          L      - Loose
A-SID  - Adjacency SID  N-SID - Node SID
+      - Inherited
=====
```

```
-----
LSP SR-TE to_A_SR_TE
Path path_A
-----
```

```

LSP Name      : to_A_SR_TE
Path LSP ID   : 3072
From          : 3.3.3.3
To            : 1.1.1.1
Admin State   : Up                Oper State    : Up
Path Name     : path_A
Path Type     : Primary
Path Admin    : Up                Path Oper     : Up
Path Up Time  : 0d 00:01:11        Path Down Time : 0d 00:00:00
Retry Limit   : 0                  Retry Timer    : 2 sec
Retry Attempt : 0                  Next Retry In  : 0 sec

PathCompMethod : none                OperPathCompMethod: none
MetricType     : igp                  Oper MetricType  : igp
=====
```

```

LocalSrProt      : preferred          Oper LocalSrProt : N/A
LabelStackRed    : Disabled           Oper LabelStackRed: N/A

Bandwidth        : No Reservation      Oper Bandwidth    : 0 Mbps
Hop Limit        : 255                 Oper HopLimit     : 255
Setup Priority    : 7                  Oper SetupPriority: 7
Hold Priority     : 0                  Oper HoldPriority  : 0
Inter-area       : N/A

PCE Updt ID      : 0                  PCE Updt State   : None
PCE Upd Fail Code: noError

PCE Report       : Disabled+          Oper PCE Report   : Disabled
PCE Control      : Disabled           Oper PCE Control  : Disabled

Include Groups   :                    Oper IncludeGroups:
None                                                     None
Exclude Groups   :                    Oper ExcludeGroups:
None                                                     None
Last Resignal    : n/a

IGP/TE Metric    : 16777215           Oper Metric       : 16777215
Oper MTU         : 1496               Path Trans        : 1
Degraded         : False
Failure Code     : noError
Failure Node     : n/a
Explicit Hops    :
    No Hops Specified
Actual Hops      :
    1.1.1.1(1.1.1.1) (N-SID)          Record Label     : 19410

BFD Configuration and State
Template         : srte                Ping Interval     : N/A
Enable          : True                 State             : up
ReturnPathLabel : 35001               OperWaitForUpTimer: 4 sec
WaitForUpTimer  : 4 sec
WaitForUpTmLeft : 0
StartFail Rsn   : N/A

-----
LSP SR-TE to_A_SR_TE
Path path_A2
-----
LSP Name       : to_A_SR_TE
Path LSP ID    : 3074
From           : 3.3.3.3
To             : 1.1.1.1
Admin State    : Up                    Oper State        : Up
Path Name     : path_A2
Path Type      : Secondary
Path Admin     : Up                    Path Oper         : Down
Path Up Time   : 0d 00:00:00           Path Down Time    : 0d 00:01:53
Retry Limit    : 0                     Retry Timer       : 2 sec
Retry Attempt  : 0                     Next Retry In     : 0 sec

PathCompMethod : none                  OperPathCompMethod: N/A
MetricType     : igp                   Oper MetricType   : N/A
LocalSrProt    : preferred             Oper LocalSrProt  : N/A
LabelStackRed  : Disabled              Oper LabelStackRed: N/A

Bandwidth      : No Reservation        Oper Bandwidth    : N/A
Hop Limit      : 255                   Oper HopLimit     : N/A
Setup Priority  : 7                     Oper SetupPriority: N/A
Hold Priority   : 0                     Oper HoldPriority  : N/A
    
```

```

Inter-area      : N/A
PCE Updt ID    : 0
PCE Upd Fail Code: noError
PCE Report     : Disabled+
PCE Control    : Disabled
Oper PCE Report : Disabled
Oper PCE Control : Disabled
Include Groups :
None
Exclude Groups :
None
Last Resignal  : n/a
Oper IncludeGroups:
N/A
Oper ExcludeGroups:
N/A
IGP/TE Metric  : N/A
Oper MTU       : N/A
Oper Metric    : N/A
Degraded      : False
Path Trans     : 0
Failure Code   : noError
Failure Node   : n/a
Explicit Hops  :
  No Hops Specified
Actual Hops    :
  No Hops Specified
Srlg          : Disabled
Srlg Disjoint  : False
BFD Configuration and State
Template       : srte
Enable        : True
ReturnPathLabel : 35002
WaitForUpTimer : 4 sec
WaitForUpTmLeft : 0
StartFail Rsn : N/A
Ping Interval  : N/A
State         : notApplicable
OperWaitForUpTimer: 4 sec
-----
LSP SR-TE template-1.1.1.1-671747
Path path_A
-----
LSP Name      : template-1.1.1.1-671747
Path LSP ID   : 14336
From         : 30.30.2.2
To          : 1.1.1.1
Admin State   : Up
Oper State    : Up
Path Name     : path_A
Path Type     : Primary
Path Admin    : Up
Path Up Time  : 0d 00:01:12
Path Oper     : Up
Path Down Time : 0d 00:00:00
Retry Limit   : 0
Retry Timer   : 30 sec
Retry Attempt : 0
Next Retry In : 0 sec
OperPathCompMethod: none
OperMetricType : igp
OperLocalSrProt : N/A
OperLabelStackRed: N/A
Bandwidth     : No Reservation
OperBandwidth : 0 Mbps
Hop Limit     : 2
OperHopLimit  : 2
Setup Priority : 7
OperSetupPriority: 7
Hold Priority  : 0
OperHoldPriority : 0
Inter-area    : N/A
OperHoldPriority : 0
PCE Updt ID   : 0
PCE Upd Fail Code: noError
PCE Report    : Disabled+
Oper PCE Report : Disabled
PCE Updt State : None

```

```

PCE Control      : Disabled          Oper PCE Control : Disabled
Include Groups   :                   Oper IncludeGroups:
None                                                     None
Exclude Groups   :                   Oper ExcludeGroups:
None                                                     None
Last Resignal    : n/a

IGP/TE Metric    : 16777215         Oper Metric       : 16777215
Oper MTU         : 1496             Path Trans        : 1
Degraded         : False
Failure Code     : noError
Failure Node     : n/a
Explicit Hops    :
  No Hops Specified
Actual Hops      :
  30.30.2.1(1.1.1.1)(A-SID)         Record Label     : 524282

BFD Configuration and State
Template         : None             Ping Interval     : N/A
Enable          : False            State              : up
ReturnPathLabel : None
WaitForUpTimer  : 4 sec            OperWaitForUpTimer: 4 sec
WaitForUpTmLeft : 0
StartFail Rsn   : N/A
    
```

show router mpls sr-te-lsp path detail dns

```

=====
MPLS SR-TE LSP
Path (Detail)
=====
Legend :
  S      - Strict                L      - Loose
  A-SID  - Adjacency SID        N-SID  - Node SID
  +      - Inherited
=====
-----
LSP SR-TE C_F_65536
Path C_F_1
-----
LSP Name       : C_F_65536
Path LSP ID    : 13312
From           : 10.20.1.3
To             : 10.20.1.6
Admin State    : Up              Oper State       : Up
Path Name      : C_F_1
Path Type      : Primary
Path Admin     : Up              Path Oper        : Up
Path Up Time   : 0d 00:01:27     Path Down Time   : 0d 00:00:00
Retry Limit    : 10              Retry Timer      : 10 sec
Retry Attempt  : 0               Next Retry In    : 0 sec

PathCompMethod : none            OperPathCompMethod: none
MetricType     : igp             Oper MetricType  : igp
LocalSrProt    : preferred       Oper LocalSrProt : N/A
LabelStackRed  : Disabled        Oper LabelStackRed: N/A

Bandwidth      : No Reservation   Oper Bandwidth   : 0 Mbps
Hop Limit      : 255              Oper HopLimit    : 255
Setup Priority  : 7                Oper SetupPriority: 7
Hold Priority   : 0                Oper HoldPriority : 0
Inter-area     : N/A
    
```



```

PCE Updt ID      : 0
PCE Upd Fail Code: noError

PCE Report       : Disabled+
PCE Control      : Disabled

Include Groups   :
None
Exclude Groups   :
None
Last Resignal    : n/a

IGP/TE Metric    : 16777215
Oper MTU         : 1488
Degraded         : False
Failure Code     : noError
Failure Node     : n/a
Explicit Hops    :
                  10.20.1.4(S)
                  Dut-D.nokia.com
-> 10.20.1.5(S)
                  Dut-E.nokia.com
-> 10.20.1.6(S)
                  Dut-F.nokia.com

Actual Hops      :
  10.10.11.4(10.20.1.4) (A-SID)
  toHUB.Dut-D.nokia.com
  (Dut-D.nokia.com)
-> 10.10.6.5(10.20.1.5) (A-SID)
  toD.Dut-E.nokia.com
  (Dut-E.nokia.com)
-> 10.10.10.6(10.20.1.6) (A-SID)
  toE.Dut-F.nokia.com
  (Dut-F.nokia.com)

BFD Configuration and State
Template         : None
Enable          : False
ReturnPathLabel : None
BFD Source Addr : None
WaitForUpTimer  : 4 sec
WaitForUpTmLeft : 0
StartFail Rsn   : N/A

Ping Interval   : N/A
State           : notApplicable

OperWaitForUpTimer: 0 sec

=====
5. sr-te (ipV6)
6. Command:
show router mpls sr-te-lsp path detail dns
7. Logs:
=====
MPLS SR-TE LSP
Path (Detail)
=====
Legend :
  S      - Strict
  A-SID  - Adjacency SID
  +      - Inherited
  L      - Loose
  N-SID  - Node SID
=====
-----
LSP SR-TE C_F_65536
Path C_F_1
-----
LSP Name      : C_F_65536
    
```

```

Path LSP ID      : 60928
From            : 3ffe::a14:103
To             : 3ffe::a14:106
Admin State    : Up
Oper State     : Up
Path Name      : C_F_1
Path Type      : Primary
Path Admin     : Up
Path Up Time   : 0d 00:51:10
Retry Limit    : 10
Retry Attempt  : 0
Oper Path Oper : Up
Path Down Time: 0d 00:00:00
Retry Timer    : 10 sec
Next Retry In  : 0 sec

PathCompMethod : none
MetricType     : igp
LocalSrProt    : preferred
LabelStackRed  : Disabled
OperPathCompMethod: none
Oper MetricType : igp
Oper LocalSrProt : N/A
Oper LabelStackRed: N/A

Bandwidth      : No Reservation
Hop Limit      : 255
Setup Priority  : 7
Hold Priority   : 0
Inter-area     : N/A
Oper Bandwidth : 0 Mbps
Oper HopLimit  : 255
Oper SetupPriority: 7
Oper HoldPriority : 0

PCE Updt ID    : 0
PCE Upd Fail Code: noError
Oper PCE Updt State : None

PCE Report     : Disabled+
PCE Control    : Disabled
Oper PCE Report : Disabled
Oper PCE Control : Disabled

Include Groups :
None
Exclude Groups :
None
Last Resignal  : n/a
Oper IncludeGroups:
None
Oper ExcludeGroups:
None

IGP/TE Metric  : 16777215
Oper MTU       : 1488
Degraded       : False
Failure Code   : noError
Failure Node   : n/a
Explicit Hops  :
    3ffe::a14:104(S)
    Dut-D.nokia.com
-> 3ffe::a14:105(S)
    Dut-E.nokia.com
-> 3ffe::a14:106(S)
    Dut-F.nokia.com
Oper Metric    : 16777215
Path Trans     : 1

Actual Hops    :
3ffe::a0a:b04
(3ffe::a14:104) (A-SID)
Record Label   : 524279
toHUB.Dut-D.nokia.com
(Dut-D.nokia.com)
3ffe::a0a:605
-> (3ffe::a14:105) (A-SID)
Record Label   : 524281
toD.Dut-E.nokia.com
(Dut-E.nokia.com)
3ffe::a0a:a06
-> (3ffe::a14:106) (A-SID)
Record Label   : 524281
3ffe::a0a:a06
(Dut-F.nokia.com)

BFD Configuration and State
    
```

```

Template      : None           Ping Interval   : N/A
Enable       : False        State           : notApplicable
ReturnPathLabel : None
BFDD Source Addr : None
WaitForUpTimer : 4 sec      OperWaitForUpTimer: 0 sec
WaitForUpTmLeft : 0
StartFail Rsn  : N/A
    
```

Table 512: Output Fields: MPLS SR-TE-LSP Path Detail

Label	Description
LSP Name	The name of the LSP
Path LSP ID	The path LSP ID
From	The IP address for the ingress router for the LSP
To	The IP address for the egress router for the LSP
Admin State	The administrative state of the LSP
Oper State	The operational state of the LSP
Path Name	The name of the LSP path
Path Type	The type of LSP path
Path Admin	The administrative state of the LSP path
Path Oper	The operational state of the LSP path
Path Up Time	The length of time the LSP path has been operational
Path Down Time	The length of time the LSP path has been down
Retry Limit	The number of attempts that the software makes to reestablish the path after it has failed
Retry Timer	The time, in seconds, for path reestablishment attempts after LSP failure
Retry Attempt	The number of retry attempts
Next Retry In	The next retry value
PathCompMethod	The path computation method for the specific LSP pce — PCE path computation method is configured local-cspf — Local CSPF path computation method is configured none — No computation method is configured
OperPathCompMethod	The operational state of the path computation method pce — PCE path computation method is configured

Label	Description
	local-cspf — Local CSPF path computation method is configured none — No computation method is configured
MetricType	The cost of the TE path for the specific LSP
Oper MetricType	The operational state of cost of the TE path
LocalSrProt	The local LFA protection for the CSPF computed explicit path with adjacency SIDs
Oper LocalSrProt	The operational state of LFA protection for the CSPF computed explicit path with adjacency SIDs
LabelStackRed	The label stack reduction applied to the CSPF computed explicit path with adjacency SIDs
Oper LabelStackRed	The operational state of the label stack reduction applied to the CSPF computed explicit path with adjacency SIDs
Bandwidth	The amount of bandwidth in Mb/s to be reserved
Oper Bandwidth	The operational state of the bandwidth
Hop Limit	The maximum number of hops for the path
Oper HopLimit	The operational state of the maximum number of hops for the path
Setup Priority	The setup priority value to use for the path
Oper SetupPriority	The operational state of the setup priority value for the path
Hold Priority	The hold priority to use for the path
Oper HoldPriority	The operational state of the hold priority for the path
PCE Updt ID	The update ID
PCE Updt State	The update state
PCE Upd Fail Code	The update failure code
PCE Report	The enabled or disabled status of PCE report
Oper PCE Report	The operational state of the PCE report
PCE Control	The enabled or disabled status of PCE control
Oper PCE Control	The operational state of PCE control

Label	Description
Include Groups	The included groups. None indicates that no groups are included
Oper IncludeGroups	The operational state of the included groups
Exclude Groups	The excluded groups. None indicates that no groups are included
Oper ExcludeGroups	Oper ExcludeGroups
Last Resignal	The last resignal time
IGP/TE Metric	The IGP or TE metric value
Oper Metric	The operational metric value
Oper MTU	The largest service frame size that can be transmitted to the far-end router without requiring the packet to be fragmented
Path Trans	The path transmission value
Degraded	The degraded status
Failure Code	The reason code for in-progress MBB value. A value of none indicates that no failure has occurred.
Failure Node	The IP address of the node in the LSP path at which the in-progress MBB failed. When no failure has occurred this value is none.
Explicit Hops	The explicit configured hops for an LSP path
Actual Hops	The actual hops an LSP path takes
Record Label	The record label value
BFD Configuration and State	
Template	Indicates if the BFD template configured
Ping Interval	The BFD ping interval value
Enable	Indicates if BFD is enabled
State	The state of BFD
ReturnPathLabel	The return path label to add to the MPLS label on the bottom of the label stack for S-BFD. When configured, the S-BFD packet returns to the initiator through the MPLS return path.
BFD Source Addr	The BFD source address

Label	Description
WaitForUpTimer	The BFD wait for up timer value
OperWaitForUpTimer	The operational state of the wait for up timer value
WaitForUpTmLeft	The length of time remaining for the wait for up timer
StartFail Rsn	The start fail RSN value

### Output Example

The following outputs apply to an SR-TE auto-LSP for which the path is computed by the hop-to-label translation method.

```
*A:Phoenix 199# show router mpls sr-te-lsp "sr-te-level2-mesh-192.168.48.223-716805" detail
=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
-----
Type : Originating
-----
LSP Name       : sr-te-level2-mesh-192.168.48.223-716805
LSP Type       : MeshP2PSrTe           LSP Tunnel ID       : 61444
LSP Index      : 126979                TTM Tunnel Id       : 716805
From           : 192.168.48.199        To                   : 192.168.48.2*
Adm State      : Up                    Oper State           : Up
LSP Up Time    : 0d 00:02:12           LSP Down Time       : 0d 00:00:00
Transitions    : 3                     Path Changes         : 3
Retry Limit    : 0                     Retry Timer          : 30 sec
PathCompMethod : none
FallbkComp     : not-applicable
Metric         : N/A                   Use TE metric        : Disabled
Include Grps   :                       Exclude Grps         :
None           :                       None
VprnAutoBind   : Enabled
IGP Shortcut   : Enabled                BGP Shortcut         : Enabled
IGP LFA        : Disabled               IGP Rel Metric       : Disabled
BGPTransTun    : Enabled
Oper Metric    : 16777215
PCE Report     : Enabled
PCE Control    : Disabled
Max SR Labels  : 8                     Additional FRR Labels: 2
Path Profile   :
None
Primary(a)    : loose-anycast-sid       Up Time              : 0d 00:02:12
Bandwidth     : 0 Mbps
=====
```

```
*A:Phoenix 199# show router mpls sr-te-lsp "sr-te-level2-mesh-192.168.48.223-716805" path detail
=====
MPLS SR-TE LSP sr-te-level2-mesh-192.168.48.223-716805 Path (Detail)
=====
-----
Legend :
S       - Strict                L       - Loose
A-SID   - Adjacency SID        N-SID   - Node SID
+       - Inherited
=====
-----
```

```
SR-TE LSP sr-te-level2-mesh-192.168.48.223-716805 Path loose-anycast-sid
-----
LSP Name       : sr-te-level2-mesh-192.168.48.223-716805
Path LSP ID    : 20480
From           : 192.168.48.199           To           : 192.168.48.223
Admin State    : Up                     Oper State    : Up
Path Name      : loose-anycast-sid       Path Type     : Primary
Path Admin     : Up                     Path Oper     : Up
Path Up Time   : 0d 02:30:28             Path Down Time : 0d 00:00:00
Retry Limit    : 0                       Retry Timer    : 30 sec
Retry Attempt  : 1                       Next Retry In  : 0 sec
PathCompMethod : local-cspf              OperPathCompMethod : local-cspf
MetricType     : igp                     Oper MetricType : igp
LocalSrProt    : preferred                Oper LocalSrProt : preferred
LabelStackRed  : Disabled                 Oper LabelStackRed : Disabled
Bandwidth      : No Reservation           Oper Bandwidth  : 0 Mbps
Hop Limit      : 255                     Oper HopLimit   : 255
Setup Priority  : 7                       Oper Setup Priority : 7
Hold Priority   : 0                       Oper Hold Priority : 0
Inter-area     : N/A
PCE Updt ID    : 0                       PCE Updt State : None
PCE Upd Fail Code: noError
PCE Report     : Enabled                 Oper PCE Report  : Disabled
PCE Control    : Disabled                Oper PCE Control  : Disabled
Include Groups :                          Oper Include Groups :
None                                                   None
Exclude Groups :                          Oper Exclude Groups :
None                                                   None
IGP/TE Metric  : 16777215                 Oper Metric      : 16777215
Oper MTU       : 1492                     Path Trans      : 1
Failure Code    : noError
Failure Node    : n/a
Explicit Hops   :
    192.168.48.99(L)
Actual Hops     :
    192.168.48.99 (192.168.48.185)(N-SID)   Record Label    : 200099
-> 192.168.48.223 (192.168.48.223)(N-SID)   Record Label    : 200323
=====
```

```
*A:Phoneix 199# show router mpls sr-te-lsp
- sr-te-lsp [<lsp-name>] [status {up|down}] [detail] path [<path-name>]
  [auto-lsp {all|mesh-p2p-srte|one-hop-p2p-srte}]
- sr-te-lsp [<lsp-name>] [detail] [auto-lsp {all|mesh-p2p-srte|
  one-hop-p2p-srte}]
- sr-te-lsp [<lsp-name>] [status {up|down}] [to <ip-address>] [detail]
  [auto-lsp {all|mesh-p2p-srte|one-hop-p2p-srte}]
<lsp-name>       : [64 chars max]
<up|down>       : up|down
<ip-address>    : a.b.c.d
<detail>       : keyword
<path>         : keyword
<path-name>    : [32 chars max]
<all|mesh-p2p-srte*> : keyword - specify type of auto-lsp
```

```
*A:Phoneix 199# show router mpls sr-te-lsp auto-lsp all
=====
MPLS Auto SR-TE LSPs (Originating)
=====
```

LSP Name	To	Tun Id	Protect Path	Adm	Opr
sr-te-level2-mesh-192.168.48.221-	192.168.48.221	61443	N/A	Up	Up

```
716804
sr-te-level2-mesh-192.168.48.223- 192.168.48.223 61444 N/A Up Up
716805
-----
LSPs : 2
=====
```

```
*A:Phoneix 199# show router mpls sr-te-lsp auto-lsp mesh-p2p-srte
=====
MPLS Auto SR-TE LSPs (Originating)
=====
LSP Name                               To                               Tun   Protect  Adm  Opr
Id                                       Path
-----
sr-te-level2-mesh-192.168.48.221-    192.168.48.221    61443  N/A      Up   Up
716804
sr-te-level2-mesh-192.168.48.223-    192.168.48.223    61444  N/A      Up   Up
716805
-----
LSPs : 2
=====
```

**Output Example**

The following output is an example of SR-TE LSP count statistics.

```
=====
MPLS SR-TE LSP Count
=====
Total          IPv4          IPv6
-----
SR-TE LSPs    0             0             0
Mesh SR-TE LSPs 0             0             0
One Hop SR-TE LSPs 0           0             0
PCE Init SR-TE LSPs 0           0             0
=====
```

[Table 513: MPLS SR-TE LSP Output Fields](#) describes the MPLS SR-TE LSP count statistics output fields.

*Table 513: MPLS SR-TE LSP Output Fields*

Label	Description
LSP Name	The name of the LSP used in the path.
Adm State	Down — The path is administratively disabled. Up — The path is administratively enabled.
PathCompMethod	pce — PCE path computation method is configured. local-cspf — Local CSPF path computation method is configured.
FallbkPathComp	none — No fallback method is configured. local-cspf — Local CSPF fallback is configured.
Retry Limit	The number of attempts that the software should make to reestablish the LSP after it has failed.



Label	Description
Hop Limit	The maximum number of hops that an LSP can traverse, including the ingress and egress routers.
Retry Timer	The time in seconds, for LSP re-establishment attempts after an LSP failure.
LSP Up Time	The total time in increments that the LSP path has been operational.
LSP Down Time	The total time in increments that the LSP path has not been operational.
SR-TE LSPs	Displays the number of SR-TE LSPs
Mesh SR-TE LSPs	Displays the number of mesh SR-TE LSPs
One Hop-P2P SR-TE LSPs	Displays the number of one-hop SR-TE LSPs
PCE Init SR-TE LSPs	Displays the number of PCE initiated SR-TE LSPs

### Output Example

The following outputs apply to a router-controlled or to a PCC-controlled SR-TE LSP for which the path is computed using the hop-to-label transition method.

```
*A:Dut-A# show router mpls sr-te-lsp "srTeRtrControlled" path "1" detail
=====
MPLS SR-TE LSP srTeRtrControlled Path 1 (Detail)
=====
Legend :
  S - Strict          L - Loose
=====
-----
SR-TE LSP srTeRtrControlled Path 1
-----
LSP Name       : srTeRtrControlled
Path LSP ID    : 1024
From           : 10.20.1.1          To           : 10.20.1.6
Admin State    : Up                Oper State    : Up
Path Name      : 1                 Path Type     : Primary
Path Admin     : Up                Path Oper     : Up
Path Up Time   : 0d 00:03:19       Path Down Time : 0d 00:00:00
Retry Limit    : 0                 Retry Timer    : 30 sec
Retry Attempt  : 1                 Next Retry In  : 0 sec

PathCompMethod : pce                OperPathCompMethod : pce
MetricType     : igp                Oper MetricType    : igp
LocalSrProt    : preferred          Oper LocalSrProt   : preferred
LabelStackRed  : disabled           Oper LabelStackRed : disabled

Bandwidth      : No Reservation      Oper Bandwidth     : 0 Mbps
Hop Limit      : 255                 Oper HopLimit      : 255
Setup Priority  : 7                   Oper Setup Priority : 7
Hold Priority   : 0                   Oper Hold Priority  : 0
Inter-area     : N/A

PCE Updt ID    : 0                   PCE Updt State    : None
PCE Upd Fail Code: noError
```

```

PCE Report      : Inherited          Oper PCE Report   : Disabled
PCE Control     : Disabled           Oper PCE Control  : Disabled

Include Groups  :                     Oper Include Groups :
None                                                    None
Exclude Groups  :                     Oper Exclude Groups :
None                                                    None

IGP/TE Metric   : 16777215           Oper Metric       : 16777215
Oper MTU        : 1484                Path Trans        : 1
Failure Code    : noError
Failure Node    : n/a
Explicit Hops   :
  10.20.1.2(S)   -> 10.20.1.3(L)
Actual Hops     :
  10.10.1.2 (10.20.1.2)                Record Label     : 262143
-> 10.20.1.3 (10.20.1.3)                Record Label     : 102003
-> 10.20.1.6 (10.20.1.6)                Record Label     : 103006
=====
    
```

```

*A:Dut-A# show router mpls sr-te-lsp "srTeRtrControlled" detail
=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
-----
Type : Originating
-----
LSP Name       : srTeRtrControlled
LSP Type      : SrTeLsp
LSP Index     : 65537
From          : 10.20.1.1
Adm State     : Up
LSP Up Time   : 0d 00:06:09
Transitions   : 1
Retry Limit   : 0
Hop Limit     : 255
PathCompMethod : none
FallbkPathComp : not-applicable
Metric        : N/A
Include Grps  :
None

LSP Tunnel ID : 2
TTM Tunnel Id : 655363
To            : 10.20.1.6
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes  : 1
Retry Timer   : 30 sec
Negotiated MTU : 1484

VprnAutoBind : Enabled
IGP Shortcut  : Enabled
IGP LFA       : Disabled
BGPTransTun  : Enabled
Oper Metric   : 16777215
PCE Report    : Inherited
PCE Control   : Disabled
Max SR Labels : 6

Path Profile:
None

Primary(a)   : 1
Bandwidth    : 0 Mbps
Up Time      : 0d 00:06:09
=====
    
```

Outputs with other filters:  
 -----

```

*A:Dut-A# show router mpls sr-te-lsp
=====
MPLS SR-TE LSPs (Originating)
    
```

```

=====
LSP Name                To                Tun    Protect    Adm  Opr
                        Id                Id     Path
-----
sr-te1                  10.20.1.6        1      N/A        Up   Up
srTeRtrControlled      10.20.1.6        2      N/A        Up   Up
-----
LSPs : 2
=====
    
```

\*A:Dut-A# show router mpls sr-te-lsp path

```

=====
MPLS SR-TE LSP Path
=====
-----
LSP Name      : sr-te1                To                : 10.20.1.6
Adm State    : Up                    Oper State        : Up
-----
Path Name     Type                Adm  Opr
-----
1             Primary            Up   Up
-----
LSP Name      : srTeRtrControlled      To                : 10.20.1.6
Adm State    : Up                    Oper State        : Up
-----
Path Name     Type                Adm  Opr
-----
1             Primary            Up   Up
=====
    
```

\*A:Dut-A# show router mpls sr-te-lsp to 10.20.1.6

```

=====
MPLS SRTE LSPs (Originating)
=====
-----
LSP Name                To                Tun    Protect    Adm  Opr
                        Id                Id     Path
-----
sr-te1                  10.20.1.6        1      N/A        Up   Up
srTeRtrControlled      10.20.1.6        2      N/A        Up   Up
-----
LSPs : 2
=====
    
```

\*A:Dut-A# show router mpls sr-te-lsp status up

```

=====
MPLS SR-TE LSPs (Originating)
=====
-----
LSP Name                To                Tun    Protect    Adm  Opr
                        Id                Id     Path
-----
sr-te1                  10.20.1.6        1      N/A        Up   Up
srTeRtrControlled      10.20.1.6        2      N/A        Up   Up
-----
LSPs : 2
=====
    
```

\*A:Dut-A# show router mpls sr-te-lsp "srTeRtrControlled" status up detail path "1"

MPLS SR-TE LSP srTeRtrControlled Path 1 (Detail)

Legend :

```

S - Strict                                L - Loose
=====
-----
SR-TE LSP srTeRtrControlled Path 1
-----
LSP Name      : srTeRtrControlled
Path LSP ID   : 1024
From          : 10.20.1.1                To          : 10.20.1.6
Admin State   : Up                      Oper State  : Up
Path Name     : 1                       Path Type   : Primary
Path Admin    : Up                      Path Oper   : Up
Path Up Time  : 0d 00:07:12             Path Down Time : 0d 00:00:00
Retry Limit   : 0                       Retry Timer  : 30 sec
Retry Attempt : 1                       Next Retry In : 0 sec

PathCompMethod : none
FallbkPathComp : not-applicable

Bandwidth      : No Reservation          Oper Bandwidth : 0 Mbps
Hop Limit      : 255                   Oper HopLimit  : 255
Setup Priority  : 7                     Oper Setup Priority : 7
Hold Priority   : 0                     Oper Hold Priority : 0
Inter-area     : N/A

PCE Updt ID    : 0                     PCE Updt State : None
PCE Upd Fail Code: noError

PCE Report     : Inherited              Oper PCE Report : Disabled
PCE Control    : Disabled               Oper PCE Control : Disabled

Include Groups :                        Oper Include Groups :
None                                                  None
Exclude Groups :                        Oper Exclude Groups :
None                                                  None

IGP/TE Metric  : 16777215              Oper Metric      : 16777215
Oper MTU       : 1484                  Path Trans       : 1
Failure Code   : noError
Failure Node   : n/a
Explicit Hops  :
  10.20.1.2(S)    -> 10.20.1.3(L)
Actual Hops    :
  10.10.1.2 (10.20.1.2)      Record Label : 262143
-> 10.20.1.3 (10.20.1.3)    Record Label : 102003
-> 10.20.1.6 (10.20.1.6)    Record Label : 103006
=====
    
```

### Output Example

The following outputs apply to PCE-computed SR-TE LSPs.

```

*A:Dut-B>config>router>mpls>lsp# /show router mpls sr-te-lsp "srte_lsp" path detail
=====
MPLS SR-TE LSP srte_lsp Path (Detail)
=====
Legend :
  S - Strict                                L - Loose
=====
-----
SR-TE LSP srte_lsp Path fully_loose
-----
LSP Name      : srte_lsp
Path LSP ID   : 2
    
```

```

From          : 10.20.1.2          To          : 10.20.1.5
Admin State   : Up                Oper State  : Up
Path Name     : fully_loose       Path Type   : Primary
Path Admin    : Up                Path Oper   : Up
Path Up Time  : 0d 10:48:05       Path Down Time : 0d 00:00:00
Retry Limit   : 0                 Retry Timer  : 30 sec
Retry Attempt : 1                 Next Retry In : 0 sec
PathCompMethod : pce              OperPathCompMethod : pce
MetricType    : igp               Oper MetricType : igp
LocalSrProt   : preferred         Oper LocalSrProt : preferred
LabelStackRed : Disabled          Oper LabelStackRed : Disabled
Bandwidth     : No Reservation     Oper Bandwidth  : 0 Mbps
Hop Limit     : 255                Oper HopLimit   : 255
Setup Priority : 7                  Oper Setup Priority : 7
Hold Priority  : 0                  Oper Hold Priority : 0
Inter-area    : N/A

PCE Updt ID   : 0                  PCE Updt State : None
PCE Upd Fail Code: noError
PCE Report    : Enabled            Oper PCE Report  : Enabled
PCE Control   : Disabled           Oper PCE Control  : Disabled

Include Groups :                    Oper Include Groups :
None                                                  None
Exclude Groups :                    Oper Exclude Groups :
None                                                  None

IGP/TE Metric : 20                  Oper Metric       : 20
Oper MTU       : 1492                Path Trans        : 1
Failure Code   : noError
Failure Node   : n/a
Explicit Hops  :
    No Hops Specified
Actual Hops    :
    192.168.2.1                    Record Label     : 131071
-> 192.168.5.5                    Record Label     : 131068
=====
    
```

```
*A:Dut-B>config>router>mpls>lsp# /show router mpls sr-te-lsp "srte_lsp" detail
```

```
=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
```

```
Type : Originating
```

```

-----
LSP Name       : srte_lsp
LSP Type       : SrTeLsp
LSP Index      : 65536
From           : 10.20.1.2
Adm State      : Up
LSP Up Time    : 0d 10:48:17
Transitions    : 1
Retry Limit    : 0
Hop Limit      : 255
PathCompMethod : pce
FallbkPathComp : none
Metric         : N/A
Include Grps   :
None
VprnAutoBind   : Enabled
IGP Shortcut    : Enabled
IGP LFA         : Disabled
BGPTransTun    : Enabled

LSP Tunnel ID  : 1
TTM Tunnel Id  : 655362
To             : 10.20.1.5
Oper State     : Up
LSP Down Time  : 0d 00:00:00
Path Changes   : 1
Retry Timer    : 30 sec
Negotiated MTU : 1492

Use TE metric  : Disabled
Exclude Grps   :
None
BGP Shortcut   : Enabled
IGP Rel Metric : Disabled
    
```

```

Oper Metric      : 20
PCE Report      : Enabled
PCE Control     : Disabled
Max SR Labels   : 6                Additional FRR Labels: 1
Path Profile    :
None
Primary(a)     : fully_loose       Up Time           : 0d 10:48:17
Bandwidth      : 0 Mbps
=====
    
```

### Output Example

The following outputs apply to a PCE-computed SR-TE LSP when **pce-report sr-te** is enabled under MPLS.

```

*A:Dut-B>config>router>mpls>lsp# /show router mpls sr-te-lsp "srte_lsp" path detail
=====
MPLS SR-TE LSP srte_lsp Path (Detail)
=====
Legend :
  S - Strict          L - Loose
=====
-----
SR-TE LSP srte_lsp Path fully_loose
-----
LSP Name          : srte_lsp
Path LSP ID       : 2
From              : 10.20.1.2          To              : 10.20.1.5
Admin State       : Up                Oper State       : Up
Path Name         : fully_loose       Path Type        : Primary
Path Admin        : Up                Path Oper        : Up
Path Up Time      : 0d 10:51:47       Path Down Time   : 0d 00:00:00
Retry Limit       : 0                 Retry Timer      : 30 sec
Retry Attempt     : 1                 Next Retry In    : 0 sec
PathCompMethod    : pce                OperPathCompMethod: pce
MetricType        : igp                Oper MetricType  : igp
LocalSrProt       : preferred          Oper LocalSrProt : preferred
LabelStackRed     : Disabled           Oper LabelStackRed : Disabled
Bandwidth         : No Reservation      Oper Bandwidth   : 0 Mbps
Hop Limit         : 255                 Oper HopLimit    : 255
Setup Priority     : 7                   Oper Setup Priority : 7
Hold Priority      : 0                   Oper Hold Priority : 0
Inter-area        : N/A

PCE Updt ID       : 0                 PCE Updt State   : None
PCE Upd Fail Code: noError
PCE Report        : Inherited          Oper PCE Report   : Enabled
PCE Control       : Disabled           Oper PCE Control  : Disabled

Include Groups    :                    Oper Include Groups :
None              None
Exclude Groups    :                    Oper Exclude Groups  :
None              None

IGP/TE Metric     : 20                 Oper Metric        : 20
Oper MTU          : 1492                Path Trans         : 1
Failure Code      : noError
Failure Node      : n/a
Explicit Hops     :
  No Hops Specified
Actual Hops       :
  192.168.2.1     Record Label      : 131071
-> 192.168.5.5   Record Label      : 131068
    
```

```

=====
*A:Dut-B>config>router>mpls>lsp# /show router mpls sr-te-lsp "srte_lsp" detail
=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
-----
Type : Originating
-----
LSP Name       : srte_lsp
LSP Type       : SrTeLsp
LSP Index      : 65536
From           : 10.20.1.2
Adm State      : Up
LSP Up Time    : 0d 10:52:16
Transitions    : 1
Retry Limit    : 0
Hop Limit      : 255
PathCompMethod : pce
FallbkPathComp : none
Metric         : N/A
Include Grps   :
None
VprnAutoBind  : Enabled
IGP Shortcut   : Enabled
IGP LFA        : Disabled
BGPTransTun   : Enabled
Oper Metric    : 20
PCE Report     : Inherited
PCE Control    : Disabled
Max SR Labels  : 6
Path Profile   :
None
Primary(a)    : fully_loose
Bandwidth      : 0 Mbps

LSP Tunnel ID   : 1
TTM Tunnel Id   : 655362
To              : 10.20.1.5
Oper State      : Up
LSP Down Time   : 0d 00:00:00
Path Changes    : 1
Retry Timer     : 30 sec
Negotiated MTU  : 1492

Use TE metric   : Disabled
Exclude Grps    :
None

BGP Shortcut    : Enabled
IGP Rel Metric  : Disabled

Additional FRR Labels: 1

Up Time         : 0d 10:52:16
=====
    
```

**Output Example**

The following outputs apply to PCE-controlled SR-TE LSPs.

```

=====
*A:Dut-B>config>router>pcep>pcc# /show router mpls sr-te-lsp "srte_lsp" path detail
=====
MPLS SR-TE LSP srte_lsp Path (Detail)
=====
Legend :
    S - Strict
    L - Loose
=====
-----
SR-TE LSP srte_lsp Path fully_loose
-----
LSP Name       : srte_lsp
Path LSP ID    : 2
From           : 10.20.1.2
Admin State    : Up
Path Name      : fully_loose
Path Admin     : Up
Path Up Time   : 0d 00:01:07
Retry Limit    : 0
Retry Attempt  : 1
PathCompMethod : pce
MetricType     : igp
LocalSrProt    : preferred

To             : 10.20.1.5
Oper State     : Up
Path Type      : Primary
Path Oper      : Up
Path Down Time : 0d 00:00:00
Retry Timer    : 30 sec
Next Retry In  : 0 sec
OperPathCompMethod : pce
Oper MetricType : igp
Oper LocalSrProt : preferred
    
```

```

LabelStackRed      : Disabled          Oper LabelStackRed   : Disabled
Bandwidth          : No Reservation    Oper Bandwidth       : 0 Mbps
Hop Limit          : 255                Oper HopLimit        : 255
Setup Priority     : 7                  Oper Setup Priority   : 7
Hold Priority      : 0                  Oper Hold Priority    : 0
Inter-area         : N/A

PCE Updt ID       : 0                  PCE Updt State      : None
PCE Upd Fail Code: noError
PCE Report        : Enabled            Oper PCE Report      : Enabled
PCE Control       : Enabled            Oper PCE Control     : Enabled

Include Groups    :                    Oper Include Groups  :
None                                                       None
Exclude Groups   :                    Oper Exclude Groups  :
None                                                       None

IGP/TE Metric     : 20                 Oper Metric          : 20
Oper MTU          : 1492                Path Trans           : 1
Failure Code      : noError
Failure Node      : n/a
Explicit Hops     :
    No Hops Specified
Actual Hops       :
    192.168.2.1          Record Label         : 131071
-> 192.168.5.5         Record Label         : 131068
=====
    
```

```

*A:Dut-B>config>router>pcep>pcc# /show router mpls sr-te-lsp "srte_lsp" detail
=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
-----
Type : Originating
-----
LSP Name          : srte_lsp
LSP Type          : SrTeLsp
LSP Index         : 65536
From              : 10.20.1.2
Adm State         : Up
LSP Up Time      : 0d 00:01:38
Transitions      : 1
Retry Limit       : 0
Hop Limit        : 255
PathCompMethod   : pce
FallbkPathComp   : none
Metric           : N/A
Include Grps     :
None
VprnAutoBind     : Enabled
IGP Shortcut     : Enabled
IGP LFA          : Disabled
BGPTransTun     : Enabled
Oper Metric      : 20
PCE Report       : Enabled
PCE Control      : Enabled
Max SR Labels    : 6
Path Profile     :
None
Primary(a)      : fully_loose
Bandwidth       : 0 Mbps

LSP Tunnel ID    : 1
TTM Tunnel Id   : 655362
To              : 10.20.1.5
Oper State       : Up
LSP Down Time   : 0d 00:00:00
Path Changes    : 1
Retry Timer     : 30 sec
Negotiated MTU  : 1492

Use TE metric    : Disabled
Exclude Grps    :
None

BGP Shortcut     : Enabled
IGP Rel Metric   : Disabled

Additional FRR Labels: 1

Up Time         : 0d 00:01:38
    
```



```

=====
*A:Dut-B>config>router>mpls>lsp# /show router pcep pcc lsp-db
=====
PCEP Path Computation Client (PCC) LSP Update Info
=====
PCEP-specific LSP ID: 3
LSP ID          : 2                LSP Type          : seg-rt
Tunnel ID       : 1                Extended Tunnel Id : 10.20.1.2
LSP Name        : srte_lsp::fully_loose
Source Address  : 10.20.1.2        Destination Address : 10.20.1.5
LSP Delegated   : True            Delegate PCE Address: 10.20.1.24
Oper Status     : active
=====
    
```

```

=====
*A:Dut-B>config>router>mpls>lsp# /show router mpls sr-te-lsp "srte_lsp" path
=====
MPLS SR-TE LSP srte_lsp Path
=====
-----
LSP Name      : srte_lsp           To                : 10.20.1.5
Adm State     : Up                Oper State        : Up
-----
Path Name      Type          Adm  Opr
-----
fully_loose    Primary          Up   Up
=====
    
```

### Output Example

The following output applies to SR-TE LSP path statistics.

```

=====
*A:Dut-C# show router mpls sr-te-lsp path family ipv6 status up
=====
MPLS SR-TE LSP Path
=====
-----
LSP Name      : 3ffe::a14:106
To            : 3ffe::a14:106
Adm State     : Up                Oper State        : Up
-----
Path Name      Type          Adm  Opr
-----
pe1_pe2        Primary          Up   Up
pe1_pe2_Stby   Standby          Up   Up
=====
    
```

```

=====
*A:Dut-C# show router mpls sr-te-lsp "3ffe::a14:106"
=====
MPLS SR-TE LSPs (Originating)
=====
-----
LSP Name      Tun   Protect  Adm  Opr
To            Id    Path
-----
3ffe::a14:106  1     N/A      Up   Up
3ffe::a14:106
-----
LSPs : 1
=====
    
```

```

*A:Dut-C# show router mpls sr-te-lsp "3ffe::a14:106" detail
    
```

```

=====
MPLS SR-TE LSPs (Originating) (Detail)
=====
Legend :
+ - Inherited
=====
-----
Type : Originating
-----
LSP Name      : 3ffe::a14:106
LSP Type      : SrTeLsp                LSP Tunnel ID      : 1
LSP Index     : 65536                  TTM Tunnel Id     : 655362
From          : 3ffe::a14:103
To           : 3ffe::a14:106
Adm State     : Up                      Oper State         : Up
LSP Up Time   : 0d 00:05:11            LSP Down Time     : 0d 00:00:00
Transitions   : 1                      Path Changes      : 1
Retry Limit   : 0                      Retry Timer        : 30 sec
Hop Limit     : 255                    Negotiated MTU    : 1492
PathCompMethod : none
FallbkPathComp : not-applicable
Metric        : N/A
Local Sr Protec* : preferred           Label Stack Reduction: Disabled
Load Bal Wt   : N/A                   ClassForwarding   : Disabled
Include Grps  :                        Exclude Grps      :
None          :                        None
Egress Stats  : Disabled
BFD Template  : None                   BFD Ping Intvl    : N/A
BFD Enable    : False                  BFD Failure-action : None
WaitForUpTimer : 4

Revert Timer  : Disabled                Next Revert In    : N/A
Entropy Label : Enabled+               Oper Entropy Label : Enabled
Negotiated EL : Disabled
VprnAutoBind : Enabled
IGP Shortcut  : Enabled                BGP Shortcut      : Enabled
IGP LFA       : Disabled               IGP Rel Metric    : Disabled
BGPTransTun  : Enabled
Oper Metric   : 16777215
PCE Report    : Disabled+
PCE Control   : Disabled
Max SR Labels : 6                      Additional FRR Labels: 1
Path Profile  : None
Admin Tags    : None

Primary(a)    : pe1_pe2                 Up Time           : 0d 00:05:13
Bandwidth     : 0 Mbps
Secondary     : pe1_pe2_Sec            Down Time         : 0d 00:01:23
Bandwidth     : 0 Mbps
Standby       : pe1_pe2_Stby           Up Time           : 0d 00:01:09
Bandwidth     : 0 Mbps
=====
* indicates that the corresponding row element may have been truncated.
=====

```

```

*A:Dut-C# show router mpls sr-te-lsp "3ffe::a14:106" path
=====
MPLS SR-TE LSP 3ffe::a14:106 Path
=====
-----
LSP Name      : 3ffe::a14:106

```

```

To          : 3ffe::a14:106
Adm State   : Up                               Oper State   : Up
-----
Path Name    Type      Adm  Opr
-----
pe1_pe2     Primary    Up   Up
pe1_pe2_Sec Secondary  Up   Dwn
pe1_pe2_Stby Standby    Up   Up
=====
    
```

```

*A:Dut-C# show router mpls sr-te-lsp "3ffe::a14:106" path detail
=====
MPLS SR-TE LSP 3ffe::a14:106 Path (Detail)
=====
Legend :
  S      - Strict                L      - Loose
  A-SID  - Adjacency SID        N-SID  - Node SID
  +      - Inherited
=====
LSP SR-TE 3ffe::a14:106
Path pe1_pe2
-----
LSP Name      : 3ffe::a14:106
Path LSP ID   : 59904
From          : 3ffe::a14:103
To            : 3ffe::a14:106
Admin State   : Up                               Oper State   : Up
Path Name     : pe1_pe2                         Path Type    : Primary
Path Admin    : Up                               Path Oper    : Up
Path Up Time  : 0d 00:09:24                     Path Down Time : 0d 00:00:00
Retry Limit   : 0                               Retry Timer   : 30 sec
Retry Attempt : 0                               Next Retry In : 0 sec

PathCompMeth* : none                            Oper PathCompMethod : none
MetricType    : igp                             Oper MetricType     : igp
LocalSrProt   : preferred                       Oper LocalSrProt    : preferred
LabelStackRed : Disabled                       Oper LabelStackRed  : Disabled

Bandwidth     : No Reservation                   Oper Bandwidth      : 0 Mbps
Hop Limit     : 255                             Oper HopLimit       : 255
Setup Priori* : 7                               Oper Setup Priority  : 7
Hold Priority  : 0                               Oper Hold Priority   : 0
Inter-area    : N/A

PCE Updt ID   : 0                               PCE Updt State     : None
PCE Upd Fail  : noError

PCE Report    : Disabled+                       Oper PCE Report     : Disabled
PCE Control   : Disabled                       Oper PCE Control    : Disabled

Include Grou* :                                 Oper Include Groups :
None                                                  None
Exclude Grou* :                                 Oper Exclude Groups :
None                                                  None
Last Resignal : n/a

IGP/TE Metric : 16777215                       Oper Metric         : 16777215
Oper MTU      : 1492                             Path Trans         : 1
Failure Code  : noError
Failure Node  : n/a
Explicit Hops :
3ffe::a14:101(L)
    
```

```

-> 3ffe::a14:106(L)
Actual Hops :
  3ffe::a14:101
  (3ffe::a14:101)(N-SID)
  Record Label      : 454488
  3ffe::a14:106
-> (3ffe::a14:106)(N-SID)
  Record Label      : 424493

BFD Configuration and State:
Template      : None                Ping Interval      : N/A
Enable        : False              State              : notApplicable
WaitForUpTim*: 4                  OperWaitForUpTimer : 0
WaitForUpTmL*: 0
Start Fail Reason: N/A

-----
LSP SR-TE 3ffe::a14:106
Path pe1_pe2_Sec
-----
LSP Name      : 3ffe::a14:106
Path LSP ID   : 59906
From          : 3ffe::a14:103
To            : 3ffe::a14:106
Admin State   : Up                  Oper State         : Up
Path Name     : pe1_pe2_Sec         Path Type          : Secondary
Path Admin    : Up                  Path Oper          : Down
Path Up Time  : 0d 00:00:00         Path Down Time     : 0d 00:05:35
Retry Limit   : 0                   Retry Timer        : 30 sec
Retry Attempt : 0                   Next Retry In      : 0 sec

PathCompMeth*: none                Oper PathCompMethod : N/A
MetricType    : igp                 Oper MetricType     : N/A
LocalSrProt   : preferred           Oper LocalSrProt    : N/A
LabelStackRed: Disabled            Oper LabelStackRed   : N/A

Bandwidth     : No Reservation       Oper Bandwidth      : N/A
Hop Limit     : 255                  Oper HopLimit       : N/A
Setup Priori*: 7                     Oper Setup Priority  : N/A
Hold Priority  : 0                    Oper Hold Priority   : N/A
Inter-area    : N/A

PCE Updt ID   : 0                   PCE Updt State     : None
PCE Upd Fail  : noError

PCE Report    : Disabled+           Oper PCE Report     : Disabled
PCE Control   : Disabled           Oper PCE Control    : Disabled

Include Grou* :                      Oper Include Groups :
None                                                  N/A
Exclude Grou* :                      Oper Exclude Groups  :
None                                                  N/A
Last Resignal: n/a

IGP/TE Metric: N/A                  Oper Metric          : N/A
Oper MTU      : N/A                  Path Trans           : 2
Failure Code  : noError
Failure Node  : n/a
Explicit Hops:
  3ffe::a14:102(L)
  -> 3ffe::a14:106(L)
Actual Hops :
  No Hops Specified
Srlg         : Disabled              Srlg Disjoint       : False
    
```

```

BFD Configuration and State:
Template      : None          Ping Interval      : N/A
Enable       : False        State              : notApplicable
WaitForUpTim*: 4          OperWaitForUpTimer : 0
WaitForUpTmL*: 0
Start Fail Reason: N/A

-----
LSP SR-TE 3ffe::a14:106
Path pe1_pe2_Stby
-----
LSP Name      : 3ffe::a14:106
Path LSP ID   : 59908
From         : 3ffe::a14:103
To          : 3ffe::a14:106
Admin State  : Up           Oper State         : Up
Path Name    : pe1_pe2_Stby Path Type          : Standby
Path Admin   : Up           Path Oper          : Up
Path Up Time : 0d 00:05:21  Path Down Time    : 0d 00:00:00
Retry Limit  : 0           Retry Timer        : 30 sec
Retry Attempt: 0          Next Retry In     : 0 sec

PathCompMeth*: none       Oper PathCompMethod : none
MetricType   : igp        Oper MetricType     : igp
LocalSrProt  : preferred  Oper LocalSrProt    : preferred
LabelStackRed: Disabled  Oper LabelStackRed  : Disabled

Bandwidth    : No Reservation Oper Bandwidth      : 0 Mbps
Hop Limit    : 255         Oper HopLimit       : 255
Setup Priori*: 7          Oper Setup Priority : 7
Hold Priority: 0           Oper Hold Priority  : 0
Inter-area   : N/A

PCE Updt ID  : 0           PCE Updt State     : None
PCE Upd Fail : noError

PCE Report   : Disabled+  Oper PCE Report    : Disabled
PCE Control  : Disabled  Oper PCE Control   : Disabled

Include Grou*:           Oper Include Groups :
None              None
Exclude Grou*:         Oper Exclude Groups :
None              None
Last Resignal: n/a

IGP/TE Metric: 16777215   Oper Metric         : 16777215
Oper MTU      : 1492     Path Trans          : 1
Failure Code  : noError
Failure Node  : n/a
Explicit Hops:
    3ffe::a14:102(L)
    -> 3ffe::a14:106(L)
Actual Hops   :
    3ffe::a14:102
    (3ffe::a14:102) (N-SID)
    Record Label : 454489
    3ffe::a14:106
    -> (3ffe::a14:106) (N-SID)
    Record Label : 439493
Srlg         : Disabled   Srlg Disjoint      : False

BFD Configuration and State:
Template      : None          Ping Interval      : N/A
    
```

```

Enable      : False          State      : notApplicable
WaitForUpTim*: 4           OperWaitForUpTimer : 0
WaitForUpTmL*: 0
Start Fail Reason: N/A
    
```

=====

\* indicates that the corresponding row element may have been truncated.

```
*A:Dut-C# show router mpls sr-te-lsp "3ffe::a14:106" status up detail path "pe1_pe2"
family ipv6
```

=====

MPLS SR-TE LSP 3ffe::a14:106 Path pe1\_pe2 (Detail)

=====

Legend :

S	- Strict	L	- Loose
A-SID	- Adjacency SID	N-SID	- Node SID
+	- Inherited		

-----

LSP SR-TE 3ffe::a14:106  
 Path pe1\_pe2

-----

LSP Name	: 3ffe::a14:106	Oper State	: Up
Path LSP ID	: 59904	Path Type	: Primary
From	: 3ffe::a14:103	Path Oper	: Up
To	: 3ffe::a14:106	Path Down Time	: 0d 00:00:00
Admin State	: Up	Retry Timer	: 30 sec
Path Name	: pe1_pe2	Next Retry In	: 0 sec
Path Admin	: Up		
Path Up Time	: 0d 00:16:20		
Retry Limit	: 0		
Retry Attempt	: 0		

PathCompMeth*	: none	Oper PathCompMethod	: none
MetricType	: igp	Oper MetricType	: igp
LocalSrProt	: preferred	Oper LocalSrProt	: preferred
LabelStackRed	: Disabled	Oper LabelStackRed	: Disabled

Bandwidth	: No Reservation	Oper Bandwidth	: 0 Mbps
Hop Limit	: 255	Oper HopLimit	: 255
Setup Prioriti*	: 7	Oper Setup Priority	: 7
Hold Priority	: 0	Oper Hold Priority	: 0
Inter-area	: N/A		

PCE Updt ID	: 0	PCE Updt State	: None
PCE Upd Fail	: noError		

PCE Report	: Disabled+	Oper PCE Report	: Disabled
PCE Control	: Disabled	Oper PCE Control	: Disabled

Include Grou*:		Oper Include Groups	:
None		None	
Exclude Grou*:		Oper Exclude Groups	:
None		None	
Last Resignal	: n/a		

IGP/TE Metric	: 16777215	Oper Metric	: 16777215
Oper MTU	: 1492	Path Trans	: 1
Failure Code	: noError		
Failure Node	: n/a		
Explicit Hops:			
	3ffe::a14:101(L)		
	-> 3ffe::a14:106(L)		

```
Actual Hops :
  3ffe::a14:101
  (3ffe::a14:101)(N-SID)
  Record Label      : 454488
  3ffe::a14:106
  -> (3ffe::a14:106)(N-SID)
  Record Label      : 424493

BFD Configuration and State:
Template      : None           Ping Interval      : N/A
Enable        : False         State               : notApplicable
WaitForUpTim*: 4              OperWaitForUpTimer : 0
WaitForUpTmL*: 0
Start Fail Reason: N/A
```

=====  
\* indicates that the corresponding row element may have been truncated.

```
*A:Dut-C# show router mpls sr-te-lsp "3ffe::a14:106" activepath
```

```
=====  
MPLS LSP: 3ffe::a14:106 (active paths)  
=====
```

```
Legend :
# - Manually switched path
#F - Manually forced switched path
```

```
=====  
LSP Name      : 3ffe::a14:106  
LSP Id        : 59904  
Path Name     : pe1_pe2  
Active Path   : Primary  
To            : 3ffe::a14:106  
LSP Type     : SR-TE  
=====
```

```
*A:Dut-C>>config>router>mpls# show router mpls sr-te-lsp "3ffe::a14:106" egress-stats
```

```
=====  
SR-TE LSP Egress Statistics  
=====
```

```
-----  
LSP Name : 3ffe::a14:106  
-----  
Admin State      : Up  
  
Path Name       : pe1_pe2  
StatsOperState  : Up  
Aggregate Pkts  : 0                Aggregate Octets : 0  
  
Path Name       : pe1_pe2_Sec  
StatsOperState  : Up  
Aggregate Pkts  : 0                Aggregate Octets : 0  
  
Path Name       : pe1_pe2_Stby  
StatsOperState  : Up  
Aggregate Pkts  : 0                Aggregate Octets : 0  
  
Total for all paths  
Tot.Aggr Pkts   : 0                Tot.Aggr Octets  : 0  
=====
```

```
*A:Dut-C# show router mpls sr-te-lsp "3ffe::a14:106" to 3ffe::a14:106 detail
```

```

MPLS SR-TE LSPs (Originating) (Detail)
=====
Legend :
+ - Inherited
=====
-----
Type : Originating
-----
LSP Name       : 3ffe::a14:106
LSP Type       : SrTeLsp
LSP Index      : 65536
From           : 3ffe::a14:103
To             : 3ffe::a14:106
Adm State      : Up
LSP Up Time    : 0d 00:50:36
Transitions    : 1
Retry Limit    : 0
Hop Limit      : 255
PathCompMethod : none
FallbkPathComp : not-applicable
Metric         : N/A
Local Sr Protec* : preferred
Load Bal Wt    : N/A
Include Grps   :
None
Egress Stats   : Disabled
BFD Template   : None
BFD Enable     : False
WaitForUpTimer : 4

LSP Tunnel ID   : 1
TTM Tunnel Id   : 65536
Oper State      : Up
LSP Down Time   : 0d 00:00:00
Path Changes    : 1
Retry Timer     : 30 sec
Negotiated MTU  : 1492

Label Stack Reduction: Disabled
ClassForwarding  : Disabled
Exclude Grps     :
None

BFD Ping Intvl  : N/A
BFD Failure-action : None

Next Revert In  : N/A
Oper Entropy Label : Enabled

BGP Shortcut    : Enabled
IGP Rel Metric  : Disabled

Additional FRR Labels: 1

Primary(a)      : pe1_pe2
Up Time         : 0d 00:50:39

Bandwidth       : 0 Mbps
Secondary       : pe1_pe2_Sec
Down Time       : 0d 00:46:48

Bandwidth       : 0 Mbps
Standby         : pe1_pe2_Stby
Up Time         : 0d 00:46:34

Bandwidth       : 0 Mbps
=====
* indicates that the corresponding row element may have been truncated.
    
```

### Output Example

The following output applies to SR-TE LSP egress statistics.

```

*A:Dut-B>config>router>mpls>lsp# /show router mpls sr-te-lsp "lsp1" egress-stats
=====
SR-TE LSP Egress Statistics
=====
    
```



```

-----
LSP Name : lsp1
-----
Admin State      : Up
Path Name       : p1
StatsOperState  : Up
Aggregate Pkts  : 0                Aggregate Octets : 0
Path Name       : p2
StatsOperState  : Up
Aggregate Pkts  : 0                Aggregate Octets : 0
Total for all paths
Tot.Aggr Pkts   : 0                Tot.Aggr Octets  : 0
Packet Rate pps : 0                Bit Rate Mbps    : 0
=====
    
```

**Table 514: Output Fields: MPLS SR-TE LSP Egress Statistics** describes the MPLS SR-TE LSP egress statistics output fields.

*Table 514: Output Fields: MPLS SR-TE LSP Egress Statistics*

Label	Description
LSP Name	The name of the LSP for which the statistics are provided
Admin State	The administrative state of the LSP
Path Name	The path name of the LSP
StatsOperState	Indicates whether the system is able to allocate a statistical index to that specific path
Aggregate Pkts	The number of packets recorded by the statistical index for that path
Aggregate Octets	The number of octets recorded by the statistical index for that path
Tot.Aggr Pkts	The sum of packets over all paths of the LSP
Tot.Aggr Octets	The sum of octets over all paths of the LSP
Packet Rate	The packet rate for the LSP (across all paths, for all FCs in/out-of profile) expressed in packets per second
Bit Rate	The bit rate for the LSP (across all paths, for all FCs in/out-of profile) expressed in Mb/s

## 22.12 sr-te-lsp-egress-stats

### sr-te-lsp-egress-stats

#### Syntax

**sr-te-lsp-egress-stats** *lsp-name*

#### Context

[\[Tree\]](#) (clear>router>mpls sr-te-lsp-egress-stats)

#### Full Context

clear router mpls sr-te-lsp-egress-stats

#### Description

This command clears or resets the egress statistics for MPLS SR-TE LSP.

#### Parameters

***lsp-name***

Specifies the LSP to clear, up to 64 characters.

#### Platforms

All

### sr-te-lsp-egress-stats

#### Syntax

**sr-te-lsp-egress-stats lsp** *lsp-name* [**interval** *seconds*] [**repeat** *repeat*] [**absolute|rate**] [**bits** ]

#### Context

[\[Tree\]](#) (monitor>router>mpls sr-te-lsp-egress-stats)

#### Full Context

monitor router mpls sr-te-lsp-egress-stats

#### Description

This command monitors MPLS SR-TE LSP Egress Statistics.

#### Parameters

***lsp-name***

Specifies the LSP name.

**Values** 64 characters maximum

**seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**bits**

Displays output value in bits.

**Platforms**

All

## 22.13 src-access-list

### src-access-list

**Syntax**

**src-access-list** [*list-name*]

**Context**

[\[Tree\]](#) (show>system>security>snmp src-access-list)

**Full Context**

show system security snmp src-access-list

**Description**

This command displays source access lists and the hosts for each. Including the *list-name* parameter modifies the output show only the specified **src-access-list**.

**Platforms**

All

## Output

The following output is an example of SR access list information.

[Table 515: Show Source Access List Output Fields](#) describes the source access list output fields.

### Output Example

```
A:ALA-1# show system security snmp src-access-list
=====
Source Access Lists
=====
List Name
  HostName                Host Address
-----
L1
  H1                      10.100.100.1
  H2                      10.100.100.2
L2
  HA                      10.100.101.1
  HB                      10.100.101.2
-----
Total Access Lists: 2
=====
A:ALA-1#

A:ALA-1# show system security snmp src-access-list L1
=====
Source Access Lists
=====
List Name
  HostName                Host Address
-----
L1
  H1                      10.100.100.1
  H2                      10.100.100.2
-----
Total Access Lists: 1
=====
A:ALA-1#
```

*Table 515: Show Source Access List Output Fields*

Label	Description
List Name	Displays the name of the <b>src-access-list</b> .
Host Name	Displays the name of the <b>src-host</b> .
Host Address	Displays the IP address of the <b>src-host</b> .
Total Access Lists	Displays the total number of source access lists.

## 22.14 src-bmac-lsb

### src-bmac-lsb

#### Syntax

**src-bmac-lsb**

#### Context

[\[Tree\]](#) (tools>dump>redundancy src-bmac-lsb)

#### Full Context

tools dump redundancy src-bmac-lsb

#### Description

This command dumps PBB source Backbone MAC address LSB information.

#### Platforms

All

## 22.15 srlg-database

### srlg-database

#### Syntax

**srlg-database** [**router-id** *ip-address*] [**interface** *ip-address*]

#### Context

[\[Tree\]](#) (show>router>mpls srlg-database)

#### Full Context

show router mpls srlg-database

#### Description

This command displays MPLS SRLG database information.

#### Parameters

**router-id** *ip-address*

Specifies a 32-bit integer uniquely identifying the router in the Autonomous System. By convention to ensure uniqueness, this may default to the value of one of the router's IPv4

host addresses, represented as a 32-bit unsigned integer, if IPv4 is configured on the router. The **router-id** can be either the local one or some remote router.

**interface *ip-address***

Specifies the IP address of the interface.

**Platforms**

All

## 22.16 srlg-group

### srlg-group

**Syntax**

**srlg-group** [*name*]

**Context**

[\[Tree\]](#) (show>router>if-attribute srlg-group)

**Full Context**

show router if-attribute srlg-group

**Description**

This command displays SRLG statistics.

**Parameters**

*name*

Displays entries that are associated with the specified SRLG name, up to 32 characters.

**Platforms**

All

**Output**

The following output is an example of SRLG statistics, and [Table 516: SRLG Fields](#) describes the fields.

**Output Example**

```
B:CORE2# show router if-attribute srlg-group
=====
Interface Srlg Groups
=====
Group Name          Group Value  Penalty Weight
-----
1                    1            100
2                    2            200
3                    3            300
```

```
-----  
No. of Groups: 3  
=====  
B: CORE2#
```

Table 516: SRLG Fields

Label	Description
Group Name	The name of the SRLG
Group Value	The integer value of the SRLG
Penalty Weight	The penalty weight that is assigned to the SRLG
No. of Groups	The total number of displayed SRLGs

## 22.17 srrp

```
srrp
```

### Syntax

```
srrp
```

### Context

[\[Tree\]](#) (clear>router srrp)

### Full Context

```
clear router srrp
```

### Description

Commands in this context clear and reset SRRP virtual router instances.

### Platforms

All

```
srrp
```

### Syntax

```
srrp [srrp-id [detail]]
```

### Context

[\[Tree\]](#) (show srrp)

## Full Context

show srrp

## Description

This command displays information related to the SRRP.

## Parameters

### srrp-id

Specifies the SRRP ID.

**Values** 1 to 4294967295

### detail

Displays detailed information.

## Platforms

All

## 22.18 srrp-sync-database

### srrp-sync-database

## Syntax

**srrp-sync-database** [**instance** *instance-id*] [**peer** *ip-address*]

## Context

[\[Tree\]](#) (tools>dump>redundancy>multi-chassis srrp-sync-database)

## Full Context

tools dump redundancy multi-chassis srrp-sync-database

## Description

This command dumps SRRP database information and applies to the 7450 ESS.

## Parameters

### *ip-address*

Specifies the peer's IP address.

**Values** ipv4-address: a.b.c.d

ipv6-address:

- x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d



- x – [0 to FFFF] H
- d – [0 to 255] D

***instance-id***

Dumps information for the specified Subscriber Router Redundancy Protocol instance configured on this system.

**Values** 1 to 4294967295

**Platforms**

All

## 22.19 ssh

ssh

**Syntax**

ssh

**Context**

[\[Tree\]](#) (show>system>security ssh)

**Full Context**

show system security ssh

**Description**

This command displays all SSH sessions, and the SSH status and fingerprint. The type of SSH application (CLI, SCP, SFTP, or NETCONF) is indicated for each SSH connection.

**Platforms**

All

**Output**

The following output is an example of SSH information, and [Table 517: Show System Security SSH Options Output Fields](#) describes the output fields.

**Output Example**

```
*A:dut-b# show system security ssh
=====
SSH Server
=====
Administrative State      : Enabled
Operational State       : Up
Preserve Key             : Enabled
SSH Protocol Version 2   : Enabled
```

```

SSH listening port      : 22
DSA Host Key Fingerprint : 0f:10:a3:ca:ff:22:d0:90:6e:2b:90:57:f1:5b:0a:92
RSA Host Key Fingerprint : b3:2b:ba:1b:ef:49:68:dc:b5:ff:b9:55:b7:78:e9:ee
-----
Connection              Username
Version Cipher          ServerName  Status
-----
192.0.2.131             admin
2      aes128-ctr         cli        connected
-----
Number of SSH sessions : 1
=====
    
```

Table 517: Show System Security SSH Options Output Fields

Label	Description
SSH Administrative State	Enabled — The administrative state of the SSH server is enabled Disabled — The administrative state of the SSH server is disabled
SSH Operational State	Up — The operational state of the SSH server is up Down — The operational state of the SSH server is down
SSH Preserve Key	Enabled — preserve-key is enabled Disabled — preserve-key is disabled
SSH Protocol Version 2	Enabled — SSH2 is enabled Disabled — SSH2 is disabled
SSH listening port	The SSH port for SSH connections arriving in VPRN or base routing
Key Fingerprint	The key fingerprint is the server identity. If a client attempts and fails to verify the key fingerprint of the server, the client session is disconnected.
Connection	The IP address of the connected routers (remote client)
Encryption	des — data encryption using a private (secret) key 3des — an encryption method that allows proprietary information to be transmitted over untrusted networks
Username	The name of the user
Number of SSH sessions	The total number of active SSH sessions

## 22.20 ssid

```
ssid
```

### Syntax

```
ssid
```

### Context

[\[Tree\]](#) (show>subscr-mgmt>wlan-gw ssid)

### Full Context

```
show subscriber-mgmt wlan-gw ssid
```

### Description

This command displays SSID information.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 22.21 ssm-translate

```
ssm-translate
```

### Syntax

```
ssm-translate
```

```
ssm-translate interface interface-name
```

### Context

[\[Tree\]](#) (show>router>igmp ssm-translate)

### Full Context

```
show router igmp ssm-translate
```

### Description

This command displays IGMP SSM translate configuration information.

## Parameters

### *interface-name*

Specifies the IP interface name, up to 32 characters.

## Platforms

All

## Output

The following output is an example of SSM translate information. [Table 518: IGMP Fields](#) provides IGMP field descriptions.

### Output Example

```

=====
IGMP SSM Translate Entries
=====
Group Range          Source          Interface
-----
<239.1.1.1 - 239.1.1.2>  10.1.1.1      -
<239.1.1.1 - 239.1.1.5>  00.1.1.2      ies-abc
=====
    
```

Table 518: IGMP Fields

Label	Description
Group Range	The address ranges of the multicast groups for which this router can be an RP.
Source	The unicast address that sends data on an interface.
SSM Translate Entries	The total number of SSM translate entries.

## ssm-translate

### Syntax

**ssm-translate**

**ssm-translate interface** *interface-name*

### Context

[\[Tree\]](#) (show>router>mld ssm-translate)

### Full Context

show router mld ssm-translate

### Description

This command displays MLD SSM translate configuration information.

## Parameters

### *interface-name*

Specifies the IP interface name, up to 32 characters.

## Platforms

All

## Output

MLD Interface Output

The following table provides MLD field descriptions.

Table 519: MLD Fields

Label	Description
Start Address End Address	The address ranges of the multicast groups for which this router can be an RP.
Source Address	The unicast address that sends data on an interface.
Interface	The interface name.
SSM Translate Entries	The total number of SSM translate entries.

## Output Example

```
*A:ALA-BA# show router mld static
=====
MLD SSM Translate Entries
=====
Start Address      : ff0e::db8:9
End Address        : ff0e::db8:c
  Source Address   : 2001:db8::1

Start Address      : ff04:db8:2
End Address        : ff04:db8:10
  Source Address   : 2001:db8:3:4:5:6:7:8
  Interface        : lax-vls

Start Address      : ff0e:db8:db8:9
End Address        : ff0e:db8:db8:c
  Source Address   : 2001:db8::1
  Interface        : lax-vls
-----
SSM Translate Entries : 3
=====
*A:ALA-BA#
```

## 22.22 standby

### standby

#### Syntax

**standby**

#### Context

[\[Tree\]](#) (show>system>ptp standby)

#### Full Context

show system ptp standby

#### Description

This command displays information for PTP on the standby control module.

#### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s, 7950 XRS

#### Output

The following output is an example of PTP standby information.

#### Output Example

```
# show system ptp standby

=====
IEEE 1588/PTP Clock Information
=====
-----
Local Clock
-----
Clock Type       : boundary           PTP Profile      : ITU-T G.8275.1
Domain          : 24                  Network Type     : sdh
Admin State     : up                  Oper State       : up
Announce Interval : 8 pkt/s          Announce Rx Timeout: 3 intervals
Peer Limit      : none (Base Router)
G.8275 Priority  : 128                PTSF-unusable    : disabled
Clock Id        : a47b2cffffe441e1f  Clock Class      : 165
Clock Accuracy   : unknown            Clock Variance   : ffff (not computed)
Clock Priority1  : 128                Clock Priority2  : 128
-----
Parent Clock
-----
Port            : 1/1/3                Remote MAC Address : a4:7b:2c:e2:f1:a2
Parent Clock Id : 242124ffffe49e335      Remote PTP Port   : 1
GM Clock Id     : 242124ffffe49e335    GM Clock Class    : 6
GM Clock Accuracy : within 100 ns       GM Clock Variance : 0x4e5d (1.8E-15)
GM Clock Priority1: 128                 GM Clock Priority2: 128
-----
```

```
Time Properties
-----
Timescale           : PTP
Frequency Traceable : yes
Time Traceable     : yes
Time Source        : GPS
UTC Offset         : +37 seconds
Leap Second        : no leap second pending
-----
Frequency Recovery
-----
PTP Recovery State: initial      Last Changed      : 2021/09/02 11:04:48
Frequency Offset  : -367.370 ppb
=====
```

## 22.23 standby-ip-addresses

### standby-ip-addresses

#### Syntax

**standby-ip-addresses**

#### Context

[\[Tree\]](#) (show>subscr-mgmt>vrgw>brg>gateway standby-ip-addresses)

#### Full Context

show subscriber-mgmt vrgw brg gateway standby-ip-addresses

#### Description

This command shows associated home-aware pool standby IP addresses.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 22.24 start

### start

#### Syntax

**start**

#### Context

[\[Tree\]](#) (tools>perform>router>l2tp>group>tunnel start)

## Full Context

tools perform router l2tp group tunnel start

## Description

This command triggers an attempt to start the control connection for a specified L2TP tunnel.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

start

## Syntax

**start** *route-downloader-name* [**force**]

## Context

[\[Tree\]](#) (tools>perform>aaa>route-downloader start)

## Full Context

tools perform aaa route-downloader start

## Description

This command causes the download process to start immediately. If an ongoing download is already in progress then no further action is needed, except if the **force** keyword is added. In case the **force** keyword is added, then the current download is aborted and a new one is immediately restarted. If aborting the current download, the internal route table should not be emptied or cleared.

## Parameters

### *route-downloader-name*

Specifies the route downloader name, up to 32 characters.

### **force**

Causes the current download to be aborted and a new one is immediately restarted.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## 22.25 static

### static

#### Syntax

**static** [**sap** *sap-id* | **sdp** *sdp-id:vc-id*]

#### Context

[\[Tree\]](#) (show>service>id>mld-snooping static)

#### Full Context

show service id mld-snooping static

#### Description

This command displays MLD snooping static group membership data.

#### Platforms

All

#### Output

The following output is an example of MLD snooping static group membership information.

#### Output Example

```
*A:rbae_C# show service id 1 mld-snooping static
=====
MLD Snooping Static Source Groups for service 1
-----
MLD Snooping Static Source Groups for SDP 36:1
-----
Source
      Group
-----
2011:db8:1          FF04:db8:2
*
                   FF04:db8:3
-----
Static (*,G)/(S,G) entries: 2
=====
*A:rbae_C#
```

### static

#### Syntax

**static** [**sap** *sap-id* | **sdp** *sdp-id:vc-id*]

## Context

[\[Tree\]](#) (show>service>id>igmp-snooping static)

## Full Context

show service id igmp-snooping static

## Description

This command displays information on static IGMP snooping source groups for the VPLS service.

## Parameters

### **sap** *sap-id*

Displays static IGMP snooping source groups for a specific SAP.

### **sdp** *sdp-id*

Displays the IGMP snooping source groups for a specific spoke or mesh SDP.

**Values** 1 to 17407

### **vc-id**

The virtual circuit ID on the SDP ID for which to display information.

**Default** For mesh SDPs only, all VC IDs.

**Values** 1 to 4294967295

## Platforms

All

## Output

### Output Example

```
*A:ALA-1>show>service>id>snooping# static
=====
IGMP Snooping Static Source Groups for SAP 1/1/2
-----
Source          Group
-----
*                239.0.0.2
*                239.0.0.3
-----
Static (*,G)/(S,G) entries: 2
-----
IGMP Snooping Static Source Groups for SDP 10:10
-----
Source          Group
-----
1.1.1.1         239.0.0.10
-----
Static (*,G)/(S,G) entries: 1
=====
*A:ALA-1>show>service>id>snooping#
```

[Table 520: IGMP Snooping Source Groups Fields](#) describes the show output fields.

*Table 520: IGMP Snooping Source Groups Fields*

Label	Description
Source	Displays the IP source address used in IGMP queries.
Group	Displays the static IGMP snooping source groups for a specified SAP.

## static

### Syntax

**static** [*ip-int-name* | *ip-address*]

### Context

[\[Tree\]](#) (show>router>igmp static)

### Full Context

show router igmp static

### Description

This command displays static IGMP, (\*,G) and (S,G) information.

### Parameters

#### *ip-int-name*

Displays information associated with the specified IP interface name, up to 32 characters.

#### *ip-address*

Displays information associated with the specified IP address.

### Platforms

All

### Output

The following output is an example of IGMP static information. [Table 521: IGMP Static Fields](#) provides static IGMP field descriptions.

#### Output Example

```
*A:ALA-BA# show router 100 igmp static
=====
IGMP Static Group Source
=====
Source          Group          Interface
-----
10.11.11.11     239.136.22.3  IGMP_to_CE
```

```
*          239.1.1.1      IGMP_to_CE
10.22.22.22 239.255.255.255 IGMP_to_CE
-----
Static (*,G)/(S,G) Entries : 3
=====
*A:ALA-BA#
```

Table 521: IGMP Static Fields

Label	Description
Source	Entries that represent a source address from which receivers are interested/not interested in receiving multicast traffic.
Group	The IP multicast group address for which this entry contains information.
Interface	Displays the interface name.

## static

### Syntax

**static** [*ip-int-name* | *ip-address*]

### Context

[\[Tree\]](#) (show>router>mld static)

### Full Context

show router mld static

### Description

This command displays static MLD, (\*,G) and (S,G) information.

### Parameters

#### *ip-int-name*

Displays the information associated with the specified IP interface name.

#### *ip-address*

Displays the information associated with the specified IP address.

### Platforms

All

### Output

The following output is an example of MLD static information. [Table 522: MLD Static Fields](#) provides static MLD field descriptions.

### Output Example

```
*A:ALA-BA# show router mld static
=====
Rtr Base MLD Static Group Sources
=====
Source                                Interface
  Group Start                          [Group Step]
  [Group End]                           [Group Count]
-----
2001:db8:2016:10ff::4                 lax-vls
ff05:db8:1                             *
ff06:db8:1                             *
ff01:db8:1                             lax-vls
ff01:db8:100:0                          ::4:0
3::1                                    64
ff05:db8:1                               lax-vls
ff05:db8:20                              ::1
*                                         32
ff05:db8:2:1                             lax-vls
ff05:db8:2:3ff                           ::1
3::1                                    1023
ff05:db8:3:0                             lax-vls
ff05:db8:4:0                              ::64
3::2                                     656
ff05:db8:3:0                             lax-vls
ff05:db8:4:0                              ::64
4::1                                     656
ff05:db8:3:0                             flax-vlsoo
ff05:db8:4:0                              ::64
5::1                                     656
ff05:db8:3:0                             lax-vls
ff05:db8:4:0                              ::64
-----
Static (*,G)/(S,G) Entries : 9
=====
*A:ALA-BA#
```

Table 522: MLD Static Fields

Label	Description
Source	The entries which represents a source address from which receivers are interested/not interested in receiving multicast traffic.
Group	The IP multicast group address for which this entry contains information.
Interface	The interface name.

## static

### Syntax

**static** [**head-end** {**local** | *ip-address*}] [**color** *color*] [**end-point** { *ipv4-address* | *ipv6-address*}] [**preference** *preference-id*] [**distinguisher** *distinguisher-id*]

**static summary**

### Context

[\[Tree\]](#) (show>router>seg-rt>sr-policies static)

### Full Context

show router segment-routing sr-policies static

### Description

This command displays the traffic statistics of all or a filtered set of the static policies, or displays summary parameters.

### Parameters

#### **head-end local**

Filters on local head end.

#### **head-end *ip-address***

Filters on the head end IP address value.

**Values** a.b.c.d

#### ***color***

Filters on the color.

**Values** 0 to 4294967295

#### ***ipv4-address* | *ipv6-address***

Filters on the end-point IPv4 or IPv6 address.

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x (eight 16-bit pieces) or x:x:x:x:x:d:d:d:d  
x — [0 to FFFF]H  
d — [0 to 255]D

#### ***preference-id***

Filters on the preference ID.

**Values** 0 to 4294967295

#### ***distinguisher-id***

Filters on the distinguisher ID.

**Values** 0 to 4294967295

**summary**

Displays the summary information of the static policies.

**Platforms**

All

**Output**

The following output is an example of traffic statistics for the static policies.

**Output Example Information for Static Policies**

```
*A:Dut-C# show router segment-routing sr-policies static
=====
SR-Policies Path
=====
-----
Type           : srv6
Active         : Yes
Color          : 10
Head           : 0.0.0.0
RD             : 5
SRv6 BSID 1   : 3333:3:3:3:0:b::
TunnelId      : 917510
Origin ASN    : 0
NumReEval     : 0
NumActPathChange: 0
Maintenance Policy: N/A
Owner          : static
Endpoint Addr : 3ffe::a14:102
Preference    : 14
Age           : 759
Origin        : 0.0.0.0
ReEvalReason  : none
Last Change   : 06/13/2022 17:40:54

Path Segment Lists:
Segment-List   : 1
S-BFD State    : Down
Num Segments   : 1
Seg 1 SID     : 2222:2:2:2:0:a::
Weight         : 1
S-BFD Transitio*: 0
Last Change    : 06/10/2022 17:07:01
State          : resolved-up
=====
* indicates that the corresponding row element may have been truncated.
```

**Output Example Information for a Subset of Static Policies**

```
*A:Dut-C# show router segment-routing sr-policies static end-point 3ffe::a14:102
=====
SR-Policies Path
=====
-----
Type           : srv6
Active         : Yes
Color          : 10
Head           : 0.0.0.0
RD             : 5
SRv6 BSID 1   : 3333:3:3:3:0:b::
TunnelId      : 917510
Origin ASN    : 0
NumReEval     : 0
NumActPathChange: 0
Maintenance Policy: N/A
Owner          : static
Endpoint Addr : 3ffe::a14:102
Preference    : 14
Age           : 426
Origin        : 0.0.0.0
ReEvalReason  : none
Last Change   : 06/13/2022 17:40:54

Path Segment Lists:
```

```
Segment-List      : 1                Weight           : 1
S-BFD State      : Down              S-BFD Transitio* : 0
Num Segments     : 1                Last Change      : 06/10/2022 17:07:01
  Seg 1 SID      : 2222:2:2:2:0:a::   State            : resolved-up
```

=====

\* indicates that the corresponding row element may have been truncated.

## 22.26 static-arp

### static-arp

#### Syntax

**static-arp** [{*ip-int-name* | *ip-address* | **mac** *ieee-mac-address*}]

#### Context

[\[Tree\]](#) (show>router static-arp)

#### Full Context

show router static-arp

#### Description

This command displays the router static ARP table sorted by IP address. If no options are present, all ARP entries are displayed.

#### Parameters

##### *ip-int-name*

Only displays static ARP entries associated with the specified IP interface name.

##### *ip-address*

Only displays static ARP entries associated with the specified IP address.

##### *ieee-mac-address*

Only displays static ARP entries associated with the specified MAC address.

#### Platforms

All

#### Output

**Static ARP Table Output** — The following output is an example of static AARP table information, and [Table 523: Static ARP Table Fields](#) describes the output fields.

#### Output Example

```
A:ALA-A# show router static-arp
```



```

ARP Table
=====
IP Address      MAC Address      Age      Type Interface
-----
10.200.0.253    00:00:5a:40:00:01 00:00:00 Sta  to-ser1
10.200.1.1      00:00:5a:01:00:33 00:00:00 Inv  to-ser1a
-----
No. of ARP Entries: 1
=====
A:ALA-A#

A:ALA-A# show router static-arp 10.200.1.1
=====
ARP Table
=====
IP Address      MAC Address      Age      Type Interface
-----
10.200.1.1      00:00:5a:01:00:33 00:00:00 Inv  to-ser1
-----
A:ALA-A#

A:ALA-A# show router static-arp to-ser1
=====
ARP Table
=====
IP Address      MAC Address      Age      Type Interface
-----
10.200.0.253    00:00:5a:40:00:01 00:00:00 Sta  to-ser1
-----
A:ALA-A#

A:ALA-A# show router static-arp mac 00:00:5a:40:00:01
=====
ARP Table
=====
IP Address      MAC Address      Age      Type Interface
-----
10.200.0.253    00:00:5a:40:00:01 00:00:00 Sta  to-ser1
-----
A:ALA-A#
    
```

Table 523: Static ARP Table Fields

Label	Description
IP Address	The IP address of the static ARP entry
MAC Address	The MAC address of the static ARP entry
Age	The age of the ARP entry. Static ARPs always have 00:00:00 for the age
Type	Inv — the ARP entry is an inactive static ARP entry (invalid) Sta — the ARP entry is an active static ARP entry
Interface	The IP interface name associated with the ARP entry

Label	Description
No. of ARP Entries	The number of ARP entries displayed in the list

## 22.27 static-host

### static-host

#### Syntax

**static-host** [**sap** *sap-id*] [**wholesaler** *service-id*] [**port** *port-id*][**inter-dest-id** *intermediate-destination-id*]  
[**detail**] [**mac** *ieee-address*] [**ip-address** *ip-prefix* /*prefix-length*]

**static-host** [**sap** *sap-id* ][**wholesaler** *service-id* ][**port** *port-id*] **no-inter-dest-id** [**detail**]

**static-host summary**

#### Context

[\[Tree\]](#) (show>service>id static-host)

#### Full Context

show service id static-host

#### Description

This command displays static hosts configured on this service.

#### Parameters

##### *sap-id*

Specifies the physical port identifier portion of the SAP definition.

##### *intermediate-destination-id*

Specifies the intermediate destination identifier which is encoded in the identification strings up to 32 characters.

##### **summary**

Displays summary static host information.

##### **detail**

Displays detailed static host information.

##### *service-id*

The service ID of the wholesaler.

**Values** 1 to 2147483647

##### *ieee-address*

Specifies the MAC address.

***ip-prefix[/prefix-length]***

Specifies the IP address.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of service static host information.

**Output Example**

```
*A:ALA-48# show service id 88 static-host
=====
Static Hosts for service 88
=====
Sap                IP Address      Configured MAC   Dynamic MAC
Subscriber          Admin State     Fwding State
-----
1/2/20:0           10.10.10.104   N/A              N/A
N/A                 Down           Not Fwding
3/2/4:50/5         10.144.145.1  N/A              N/A
N/A                 Up             Fwding
-----
Number of static hosts : 2
=====
*A:ALA-48#
```

## 22.28 static-lsp

### static-lsp

**Syntax**

**static-lsp** [/lsp-name]

**static-lsp** {transit | terminate}

**static-lsp** count

**Context**

[\[Tree\]](#) (show>router>mpls static-lsp)

**Full Context**

show router mpls static-lsp

**Description**

This command displays MPLS static LSP information.

## Platforms

All

## Output

The following output is an example of MPLS static LSP information.

[Table 524: MPLS Static LSP Output Fields](#) describes the MPLS static LSP output fields.

*Table 524: MPLS Static LSP Output Fields*

Label	Description
Lsp Name	The name of the LSP used in the path up to 64 characters in length.
To	The system IP address of the egress router for the LSP.
Next Hop	The system IP address of the next hop in the LSP path.
In I/F	The ingress interface.
Out Label	The egress interface.
Out I/F	The egress interface.
Adm	Down — The path is administratively disabled. Up — The path is administratively enabled.
Opr	Down — The path is operationally down. Up — The path is operationally up.
LSPs	The total number of static LSPs.

## Output Example

```
A:ALA-12# show router mpls static-lsp
=====
MPLS Static LSPs (Originating)
=====
Lsp Name      To           Next Hop     Out Label  Out I/F    Adm  Opr
-----
NYC_SJC_customer2 100.20.1.10 10.10.1.4   1020      1/1/1     Up   Up
-----
LSPs : 1
=====
A:ALA-12#

*A:SRU4>config>router>mpls# show router mpls static-lsp transit
=====
MPLS Static LSPs (Transit)
=====
In Label   In Port    Out Label   Out Port   Next Hop           Adm  Opr
-----
240        aps-1     440         1/1/10    10.22.11.3        Up   Up
241        aps-1     441         1/1/10    10.22.11.3        Up   Up
242        aps-1     442         1/1/10    10.22.11.3        Up   Up
```

```

243     aps-1     443     1/1/10     10.22.11.3     Up     Up
244     aps-1     444     1/1/10     10.22.11.3     Up     Up
245     aps-1     445     1/1/10     10.22.11.3     Up     Up
246     aps-1     446     1/1/10     10.22.11.3     Up     Up
247     aps-1     447     1/1/10     10.22.11.3     Up     Up
248     aps-1     448     1/1/10     10.22.11.3     Up     Up
249     aps-1     449     1/1/10     10.22.11.3     Up     Up
250     aps-1     450     1/1/10     10.22.11.3     Up     Up
251     aps-1     451     1/1/10     10.22.11.3     Up     Up
252     aps-1     452     1/1/10     10.22.11.3     Up     Up
253     aps-1     453     1/1/10     10.22.11.3     Up     Up
...
207     3/2/8     407     1/1/9      10.22.10.3     Up     Up
208     3/2/8     408     1/1/9      10.22.10.3     Up     Up
209     3/2/8     409     1/1/9      10.22.10.3     Up     Up
-----
LSPs : 256
=====
*A:SRU4>config>router>mpls#

A:ALA-12# show router mpls static-lsp terminate
=====
MPLS Static LSPs (Terminate)
=====
In Label   In I/F     Out Label  Out I/F    Next Hop   Adm  Opr
-----
1021       1/1/1     n/a        n/a        n/a        Up   Up
-----
LSPs : 1
=====
A:ALA-12#
    
```

## 22.29 static-policy

### static-policy

#### Syntax

**static-policy**

**static-policy** *name* [**detail**]

#### Context

[\[Tree\]](#) (show>router>seg-rt>sr-policies static-policy)

#### Full Context

show router segment-routing sr-policies static-policy

#### Description

This command displays information about all static policies or the specified static policy.

## Parameters

### *name*

Specifies the name of the static policy, up to 64 characters.

### *detail*

Displays detailed information about the static policy.

## Platforms

All

## Output

The following outputs are examples of information for a specified static policy.

### Output Example Information for a Specific Static Policy

```
*A:Dut-C# show router segment-routing sr-policies static-policy "a1"
=====
SR-Policies Static Policy
=====
Policy Name: a1
Type           : srv6
Admin Status   : Up           Color           : 10
Head End Addr  : 0.0.0.0       Endpoint Addr   : 3ffe::a14:102
Preference     : 14
RD             : 5
SRv6 BSID 1   : N/A
Locator        : C1
Function       : End.B6.Encaps.Red   Function Value  : -
Function Stat* : error

Segment Lists Configuration:
Segment-List   : 1           Weight          : 1
Admin Status   : Up           Last Change     : 06/13/2022 17:40:54
Segment Stack:
  SRv6 SID 1: 2222:2:2:2:0:a::

=====
* indicates that the corresponding row element may have been truncated.
```

### Output Example Detailed Information for a Specific Static Policy

```
*A:Dut-C# show router segment-routing sr-policies static-policy "a1" detail
=====
SR-Policies Static Policy
=====
Policy Name: a1
Type           : srv6
Admin Status   : Up           Color           : 10
Head End Addr  : 0.0.0.0       Endpoint Addr   : 3ffe::a14:102
Preference     : 14
RD             : 5
SRv6 BSID 1   : N/A
Locator        : C1
Function       : End.B6.Encaps.Red   Function Value  : -
Function Stat* : error

Path Entry:
Active         : Yes           Owner           : static
TunnelId       : 917510        Age             : 346
```

```
Origin ASN      : 0                Origin      : 0.0.0.0
NumReEval      : 0                ReEvalReason : none
NumActPathChange: 0              Last Change  : 06/13/2022 17:40:54
Maintenance Policy: N/A

Path Segment Lists:
Segment-List    : 1                Weight      : 1
S-BFD State    : Down              S-BFD Transitio*: 0
Num Segments   : 1                Last Change : 06/10/2022 17:07:01
  Seg 1 SID    : 2222:2:2:2:0:a::   State       : resolved-up
=====
* indicates that the corresponding row element may have been truncated.
```

## 22.30 static-route

### static-route

#### Syntax

```
static-route [family] [{ip-prefix/prefix-length | preference preference | [next-hop ip-address | tag tag]}] [detail]
```

#### Context

[\[Tree\]](#) (show>router static-route)

#### Full Context

```
show router static-route
```

#### Description

This command displays the static entries in the routing table. If no options are present, all static routes are displayed sorted by prefix.

#### Parameters

##### *family*

Specifies the type of routing information to be distributed by this peer group.

- Values**
- ipv4** — Displays only those BGP peers that have the IPv4 family enabled and not those capable of exchanging IP-VPN routes.
  - ipv6** — Displays the BGP peers that are IPv6 capable.
  - mcast-ipv4** — Displays the BGP peers that are IPv4 multicast capable.
  - mcast-ipv6** — Displays the BGP peers that are IPv6 multicast capable.

##### *ip-prefix/prefix-length*

Displays static routes only matching the specified *ip-prefix* and *mask*.

- Values** The following values apply to the 7750 SR and 7950 XRS:

ipv4-prefix:	a.b.c.d (host bits must be 0)
ipv4-prefix-length:	0 to 32
ipv6-prefix:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
x:	[0 to FFFF]H
d:	[0 to 255]D
ipv6-prefix-length:	0 to 128

**Values** The following values apply to the 7450 ESS:

ipv4-prefix:	a.b.c.d (host bits must be 0)
ipv4-prefix-length:	0 to 32

### **preference**

Only displays static routes with the specified route preference.

**Values** 0 to 65535

### **ip-address**

Only displays static routes with the specified next hop IP address.

**Values** The following values apply to the 7750 SR and 7950 XRS:

ipv4-address:	a.b.c.d (host bits must be 0)
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
x:	[0 to FFFF]H
d:	[0 to 255]D

**Values** The following values apply to the 7450 ESS:

ipv4-address: a.b.c.d (host bits must be 0)

### **tag**

Displays the tag used to add a 32-bit integer tag to the static route. The tag is used in route policies to control distribution of the route into other protocols.

**Values** 1 to 4294967295

### **detail**

Displays detailed static routes information.



## Platforms

All

## Output

**Static Route Output** — The following output is an example of static route information, and [Table 525: Static Route Fields](#) describes the fields.

### Output Example

```
A:ALA-A# show router static-route
=====
Route Table
=====
IP Addr/mask      Pref Metric Type Nexthop      Interface      Active
-----
192.168.250.0/24  5    1    ID   10.200.10.1    to-ser1        Y
192.168.252.0/24  5    1    NH   10.10.0.254    n/a            N
192.168.253.0/24  5    1    NH   to-ser1         n/a            N
192.168.253.0/24  5    1    NH   10.10.0.254    n/a            N
192.168.254.0/24  4    1    BH   black-hole      n/a            Y
=====

A:ALA-A#

A:ALA-A# show router static-route 192.168.250.0/24
=====
Route Table
=====
IP Addr/mask      Pref Metric Type Nexthop      Interface      Active
-----
192.168.250.0/24  5    1    ID   10.200.10.1    to-ser1        Y
=====

A:ALA-A#

A:ALA-A# show router static-route preference 4
=====
Route Table
=====
IP Addr/mask      Pref Metric Type Nexthop      Interface      Active
-----
192.168.254.0/24  4    1    BH   black-hole      n/a            Y
=====

A:ALA-A#

A:ALA-A# show router static-route next-hop 10.10.0.254
=====
Route Table
=====
IP Addr/mask      Pref Metric Type Nexthop      Interface      Active
-----
192.168.253.0/24  5    1    NH   10.10.0.254    n/a            N
=====

A:ALA-A#

=====
Static Route Table (Router: Base) Family: IPv6
=====
Prefix           : 3ffe::10:10:14:0/120
Nexthop          : 3ffe::10:20:1:6
```

```

Type           : Indirect
Interface      : n/a
Prefix List    : n/a
Metric        : 1
Source Class   : 0
Admin State    : Up
Creation Origin : manual
BFD           : disabled
Community      :
CPE-check     : disabled
Tunnel Resolution: any
RSVP-TE Tunnels : disabled
SR-ISIS Tunnels : disabled
SR-TE Tunnels  : disabled
-----
Type           : Indirect
Interface      : n/a
Prefix List    : n/a
Metric        : 1
Source Class   : 0
Admin State    : Up
Creation Origin : manual
BFD           : disabled
Community      :
CPE-check     : disabled
Tunnel Resolution: any
RSVP-TE Tunnels : disabled
SR-ISIS Tunnels : disabled
SR-TE Tunnels  : disabled
-----
Type           : Indirect
Interface      : n/a
Prefix List    : n/a
Metric        : 1
Source Class   : 0
Admin State    : Up
Creation Origin : manual
BFD           : disabled
Community      :
CPE-check     : disabled
Tunnel Resolution: any
RSVP-TE Tunnels : disabled
SR-ISIS Tunnels : disabled
SR-TE Tunnels  : disabled
-----
Type           : Indirect
Interface      : n/a
Prefix List    : n/a
Metric        : 1
Source Class   : 0
Admin State    : Up
Creation Origin : manual
BFD           : disabled
Community      :
CPE-check     : disabled
Tunnel Resolution: any
RSVP-TE Tunnels : disabled
SR-ISIS Tunnels : disabled
SR-TE Tunnels  : disabled
-----
Type           : Indirect
Interface      : n/a
Prefix List    : n/a
Metric        : 1
Source Class   : 0
Admin State    : Up
Creation Origin : manual
BFD           : disabled
Community      :
CPE-check     : disabled
Tunnel Resolution: filter
RSVP-TE Tunnels : disabled
SR-ISIS Tunnels : enabled
    
```

```

SR-TE Tunnels      : disabled
-----
No. of Static Routes: 4
=====
*A:Dut-C#

A:Router#show router static-route 10.10.10.10/32 detail
=====
Static Route Table (Router: Base)  Family: IPv4
=====
Prefix           : 10.10.10.10/32
CommunityList    : (Not Specified)
Tag              : 0
Backup Tag       : 0
Nexthop          : 1.13.1.1           Validate Nexthop : No
Type             : Nexthop
Backup Nexthop   : 2.23.1.1           Backup Status    : Active
                                           Backup           : Backup
Interface        : Dut-C-Dut-A-1     Active           : Y
Prefix List      : n/a               Prefix List Type : n/a
Metric           : 1                 Preference       : 5
Source Class     : 0                 Dest Class       : 0
Admin State      : Up                 Nexthop Tag      : 0
Creation Origin  : manual             Load Bal Weight  : n/a
BFD              : disabled
Nexthop Community:
CPE-check        : disabled
LDP Sync         : disabled
-----
No. of Static Routes: 1
=====
A:Router#
    
```

Table 525: Static Route Fields

Label	Description
IP Addr/mask	The static route destination address and mask
Pref	The route preference value for the static route
Metric	The route metric value for the static route
Type	BH — the static route is a black hole route; the nexthop for this type of route is black-hole ID — the static route is an indirect route, where the nexthop for this type of route is the non-directly connected next hop NH — the route is a static route with a directly connected next-hop; the next-hop for this type of route is either the next-hop IP address or an egress IP interface name
Nexthop	The next hop for the static route destination
Protocol	The protocol through which the route was learned
Interface	The egress IP interface name for the static route

Label	Description
	n/a — indicates there is no current egress interface because the static route is inactive or a black hole route
Active	N — the static route is inactive; for example, the static route is disabled or the next hop IP interface is down Y — the static route is active
No. of Routes	The number of routes displayed in the list
Backup Nexthop	The backup next hop for the static route destination
Backup Tag	The tag value used for the static route when the primary next hop fails and the backup next hop is active
Backup Status	The status of the backup next hop

## static-route

### Syntax

**static-route ldp-sync-status**

### Context

[\[Tree\]](#) (tools>dump>router static-route)

### Full Context

tools dump router static-route

### Description

This command enables the synchronization status that static route keeps track of LDP interfaces.

### Parameters

**ldp-sync-status**

Specifies the LDP synchronization status.

### Platforms

All

### Output

The following output is an example of static route information.

### Output Example

```
*A:Dut-C# tools dump router static-route ldp-sync-status
```

```
=====
Sync Status of LDP interfaces
```

If Index	If Name	Timer Running? Yes/No	Timeout Used	Time Left
2	ip-10.10.2.3	Yes	30	5
3	ip-10.10.3.3	No	30	0
4	ip-10.10.5.3	No	30	0
5	ip-10.10.22.3	No	30	0
6	ip-10.10.12.3	No	30	0

## 22.31 static-sa

### static-sa

#### Syntax

**static-sa**

**static-sa name** *sa-name*

**static-sa spi** *spi*

#### Context

[\[Tree\]](#) (show>ipsec static-sa)

#### Full Context

show ipsec static-sa

#### Description

This command displays IPsec static-SA information.

#### Parameters

***sa-name***

Specifies the SA name.

**Values** 32 chars max

***spi***

Specifies the spi.

**Values** 256..16383

#### Platforms

All

## 22.32 station

### station

#### Syntax

**station** [*station-name*]

#### Context

[\[Tree\]](#) (show>router>bmp station)

#### Full Context

show router bmp station

#### Description

This command displays BGP monitor (BMP) information.

#### Parameters

##### ***station-name***

Specifies the station name of a BMP monitoring station, up to 32 characters.

#### Platforms

All

#### Output

The following output is an example of BMP monitor information.

#### Output Example

```
*A:Dut-C# show router bmp station
=====
BMP Stations (monitoring router "Base")
=====
Station Name           Session State Since           Msgs Sent
-----
lys                     ESTABLISHED   05/08/2018 15:32:12   103054
myr                     ESTABLISHED   05/08/2018 15:32:13   100007
-----
No. of BMP Stations: 2
=====
*A:Dut-C# show router bmp station "lys"
=====
BMP Station "lys" (monitoring router "Base")
=====
Admin State       : enabled           Global BMP State : enabled
Station Address  : 100.3.7.7           Station Port     : 12344
Via Router       : Base              TCP Auth Keychain:
Stats Report     : 15 seconds        Routes Report    : 5 seconds
Connect Interval : 120 seconds       Local Routes     : reporting
Initiation Msg   : Hello Station Lys
```

```
Reported families: ipv4
Session State      : ESTABLISHED          Last Change       : 05/08/2018 15:32:12
Local Address     : 100.3.7.3             Local Port        : 51041
Stat Report Msgs  : 3028                 Route Report Msgs: 100021
Peer Up Msgs      : 4                   Peer Down Msgs    : 0
Initiation Msgs   : 1                   Goodbye Msgs      : 0
Bytes sent        : 10926521
Stats Timer       : 1 seconds left       Routes Timer      : 3 seconds left
Connect Timer     : not running          Monitored Peers   : 3 of 4
Output queue      : 0/50                 Last Msg Sent     : 05/15/2018 09:27:31
=====
*A:Dut-C#
```

## station

### Syntax

**station** *station-name*

**station all**

### Context

[\[Tree\]](#) (clear>router>bmp station)

[\[Tree\]](#) (clear>service>id>bmp station)

### Full Context

clear router bmp station

clear service id bmp station

### Description

This command clears BMP station connections.

### Parameters

***station-name***

Specifies the BMP monitoring station name, up to 32 characters.

### Platforms

All

## station

### Syntax

**station** [*station-name*]

### Context

[\[Tree\]](#) (show>bmp station)

### Full Context

show bmp station

### Description

This command displays BMP station information.

### Parameters

***station-name***

Specifies the station name, up to 32 characters.

### Platforms

All

## 22.33 statistics

### statistics

#### Syntax

**statistics** [**interface** *ip-int-name* | *ip-address*]

#### Context

[\[Tree\]](#) (show>router>dhcp statistics)

#### Full Context

show router dhcp statistics

#### Description

This command displays statistics for DHCP Relay and DHCP snooping.

If no IP address or interface name is specified, all configured interfaces are displayed.

If an IP address or interface name is specified, only data regarding the specified interface is displayed.

#### Parameters

***ip-int-name* | *ip-address***

Displays statistics for the specified IP interface.

**Values** ip-int-name: 32 chars max  
ip-address: a.b.c.d

#### Platforms

All



## Output

The following command displays DHCP statistics information, and [Table 526: Show DHCP Statistics Field Descriptions](#) describes the output fields.

```
show router dhcp statistics
```


### Output Example

```
=====
DHCP Global Statistics (Router: Base)
=====
Rx Packets                : 0
Tx Packets                : 0
Rx Malformed Packets     : 0
Rx Untrusted Packets     : 0
Client Packets Discarded : 0
Client Packets Relayed   : 0
Client Packets Snooped   : 0
Client Packets Proxied (RADIUS) : 0
Client Packets Proxied (Diameter) : 0
Client Packets Proxied (User-Db) : 0
Client Packets Proxied (Lease-Split) : 0
Server Packets Discarded : 0
Server Packets Relayed   : 0
Server Packets Snooped   : 0
DHCP RELEASEs Spoofed   : 0
DHCP FORCERENEWs Spoofed : 0
Client packets streamed  : 0
Routed Subnet Transparent Forwarded
  Client Packets (BOOTREQUEST) : 0
  Server Packets (BOOTREPLY)   : 0
  Other Opcode Packets         : 0
=====
```

*Table 526: Show DHCP Statistics Field Descriptions*

Label	Description
Rx Packets	The number of packets received from the DHCP clients
Tx Packets	The number of packets transmitted to the DHCP clients
Rx Malformed Packets	The number of malformed packets received from the DHCP clients
Rx Untrusted Packets	The number of untrusted packets received from the DHCP clients
Client Packets Discarded	The number of packets received from the DHCP clients that were discarded
Client Packets Relayed	The number of packets received from the DHCP clients that were forwarded
Client Packets Snooped	The number of packets received from the DHCP clients that were snooped

Label	Description
Client Packets Proxied (RADIUS)	The number of client packets proxied through RADIUS
Client Packets Proxied (Diameter)	The number of client packets proxied through Diameter
Client Packets Proxied (User-Db)	The number of client packets proxied through User-Db
Client Packets Proxied (Lease-Split)	The number of client packets proxied through a lease split
Server Packets Discarded	The number of packets received from the DHCP server that were discarded
Server Packets Relayed	The number of packets received from the DHCP server that were forwarded
Server Packets Snooped	The number of packets received from the DHCP server that were snooped
DHCP RELEASES Spoofed	The number of spoofed DHCP releases
DHCP FORCERENEWs Spoofed	The number of spoofed FORCERENEW messages
Client packets streamed	The number of client packets streamed
Routed Subnet Transparent Forwarded	
Client Packets (BOOTREQUEST)	The number of DHCP client packets (BOOTREQUEST) received on a subscriber interface with the source IP in a routed subnet that is associated with a routed IPoE session or host. The <b>routed-subnet-transparent-forwarding</b> command must be configured in the routing instance.
Server Packets (BOOTREPLY)	The number of DHCP server packets (BOOTREPLY) received on a subscriber interface with the source IP in a routed subnet that is associated with a routed IPoE session or host. The <b>routed-subnet-transparent-forwarding</b> command must be configured in the routing instance.
Other Opcode Packets	The number of DHCP packets (Opcode field that are different from BOOTREQUEST and BOOTREPLY) received on a subscriber interface with the source IP in a routed subnet associated with a routed IPoE session or host. The <b>routed-subnet-transparent-forwarding</b> command must be configured in the routing instance.

Label	Description
	 <b>Note:</b> When transparent forwarding is enabled, the system does not check if the DHCP packet is valid and therefore packets with an Opcode field different from BOOTREQUEST and BOOTREPLY are forwarded.

## statistics

### Syntax

**statistics** [**interface** *ip-int-name*]

### Context

**[Tree]** (show>router>dhcp6 statistics)

**[Tree]** (show>service>id>dhcp6 statistics)

### Full Context

show router dhcp6 statistics

show service id dhcp6 statistics

### Description

This command displays statistics for DHCPv6 relay and snooping.

### Parameters

***ip-int-name***

Specifies to display interface name information.

### Platforms

All

### Output

The following output is an example of DHCP6 statistics information.

### Output Example

```
A:Dut-A# show service id 20 dhcp6 statistics
=====
DHCP Statistics, service 20, all interfaces
=====
Packets received : 0
Packets transmitted : 0
Packets dropped : 0
=====

=====
DHCP Statistics, service 21, all SAPs
=====
```

```

Client packets snooped : 2
Client packets forwarded      : 2
Client packets dropped : 19
Server packets snooped : 2
Server packets forwarded : 2
Server packets dropped : 0
=====

A:Dut-A# show service id 1000 dhcp6 statistics

=====
DHCP Statistics, service 1000, all interfaces
=====
Packets received           : 16063
Packets transmitted        : 16061
Packets dropped             : 0
=====

DHCP Statistics, service 1000, all SAPs
=====
Client packets snooped      : 0
Client packets forwarded    : 0
Client packets dropped      : 0
Server packets snooped      : 0
Server packets forwarded    : 0
Server packets dropped      : 0
=====
    
```

**Table 527: DHCP6 Statistics Field Descriptions** describes DHCP6 output statistics.

*Table 527: DHCP6 Statistics Field Descriptions*

Field	Description
Client Packets Dropped	The number of DHCPv6 client packets snooped on SAP ingress and dropped, for example: DHCPv6 client packet received on an LDRA enabled network-facing SAP
Client Packets Forwarded	The number of DHCPv6 client packets snooped on SAP ingress and forwarded
Client Packets Snooped	The number of DHCPv6 client packets snooped on SAP ingress
Server Packets Dropped	The number of DHCPv6 server packets snooped on SAP ingress and dropped, for example: DHCPv6 server packet received on an LDRA enabled client-facing SAP
Server Packets Forwarded	The number of DHCPv6 server packets snooped on SAP ingress and forwarded
Server Packets Snooped	The number of DHCPv6 server packets snooped on SAP ingress

## statistics

### Syntax

**statistics** [[**sap** *sap-id*] | [**sdp** *sdp-id:vc-id*] | [**interface** *interface-name*]]

### Context

**[Tree]** (show>service>id>dhcp statistics)

### Full Context

show service id dhcp statistics

### Description

This command displays DHCP relay statistics.

### Parameters

#### *ip-int-name*

Displays DHCP statistics on the specified interface.

#### *interface-name*

Displays DHCP statistics for the specified interface name.

#### *sap-id*

Displays DHCP statistics for the specified SAP.

### Platforms

All

### Output

The following output is an example of DHCP statistics information.

### Output Example

```
*A:ALA-48# show service id 88 dhcp statistics interface SpokeTerm
=====
DHCP Statistics for interface SpokeTerm
=====
Rx Packets                : 0
Tx Packets                : 0
Rx Malformed Packets     : 0
Rx Untrusted Packets     : 0
Client Packets Discarded  : 0
Client Packets Relayed    : 0
Client Packets Snooped    : 0
Client Packets Proxied (RADIUS) : 0
Client Packets Proxied (Lease-Split) : 0
Server Packets Discarded  : 0
Server Packets Relayed    : 0
Server Packets Snooped    : 0
DHCP RELEASEs Spoofed    : 0
DHCP FORCERENEWs Spoofed : 0
=====
```

\*A:ALA-48#

[Table 528: DHCP Statistics Field Descriptions](#) describes DHCP statistics output fields.

*Table 528: DHCP Statistics Field Descriptions*

Field	Description
Rx Packets	The number of received packets
Tx Packets	The number of transmitted packets
Rx Malformed	The number of malformed packets received
Rx Untrusted Packets	The number of untrusted packets received
Client Packets Discarded	The number of client packets discarded
Client Packets Relayed	The number of client packets relayed
Client Packets Snooped	The number of client packets snooped
Client Packets Proxied (RADIUS)	The number of client packets proxied through RADIUS
Client Packets Proxied (Lease-Split)	The number of client packets proxied through a lease split
Server Packets Discarded	The number of discarded server packets
Server Packets Relayed	The number of relayed server packets
Server Packets Snooped	The number of snooped server packets
DHCP RELEASEs Spoofed	The number of spoofed DHCP releases
DHCP FORCERENEWs Spoofed	The number of spoofed FORCERENEW messages

## statistics

### Syntax

**statistics**

**statistics interface** {*ip-int-name* | *ip-address*}

**statistics sap** *sap-id*

### Context

[\[Tree\]](#) (show>service>id>ppp statistics)

## Full Context

```
show service id ppp statistics
```

## Description

This command displays PPP statistics.

## Parameters

### *ip-int-name*

Displays information about the specified interface, up to 32 characters.

### *ip-address*

Displays information about the specified IP address.

**Values** a.b.c.d

### *sap-id*

Displays information for the specified SAP.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## statistics

## Syntax

```
statistics
```

```
statistics frag-stats
```

```
statistics map-domain domain-name mapping-rule rule-name
```

## Context

[\[Tree\]](#) (clear>nat>map statistics)

## Full Context

```
clear nat map statistics
```

## Description

This command clears MAP statistics.

## Parameters

### *domain-name*

Clears MAP statistics for the specified domain name, up to 32 characters.

### *rule-name*

Clears MAP statistics for the specified mapping rule name, up to 32 characters.

## Platforms

VSR

## statistics

### Syntax

```
statistics [{ip-address | ip-int-name}]
```

### Context

[\[Tree\]](#) (clear>router>dhcp statistics)

### Full Context

```
clear router dhcp statistics
```

### Description

This command clears statistics for DHCP statistics.

If no IP address or interface name is specified, then statistics are cleared for all configured interfaces.

If an IP address or interface name is specified, then only data regarding the specified interface is cleared.

### Parameters

#### *ip-int-name*

Clears DHCP statistics for the specified interface name.

#### *ip-address*

Clears DHCP statistics for the specified IP address.

## Platforms

All

## statistics

### Syntax

```
statistics
```

### Context

[\[Tree\]](#) (clear>router>dhcp6 statistics)

### Full Context

```
clear router dhcp6 statistics
```

### Description

This command clears DHCP6 statistics.



## Platforms

All

## statistics

### Syntax

**statistics**

**statistics interface** *ip-int-name* | *ipv6-address*

**statistics sap** *sap-id*

### Context

[\[Tree\]](#) (clear>service>id>dhcp6 statistics)

### Full Context

clear service id dhcp6 statistics

### Description

This command clears DHCPv6 statistics for interfaces and VPLS SAPs.

### Parameters

***ip-int-name***

Clears DHCPv6 statistics for the specified interface name.

***ipv6-address***

Clears DHCPv6 statistics for the specified IP address.

***sap-id***

Clears DHCPv6 statistics for the specified VPLS SAP.

## Platforms

All

## statistics

### Syntax

**statistics** [{**sap** *sap-id* | **sdp** *sdp-id:vc-id* | **interface** { *ip-address* | *ip-int-name* }}]

### Context

[\[Tree\]](#) (clear>service>id>dhcp statistics)

### Full Context

clear service id dhcp statistics

## Description

This command clears DHCP statistics.

## Parameters

### *sap-id*

Clears the specified SAP information.

### *sdp-id*

The specified SDP to be cleared.

**Values** 1 to 17407

### *vc-id*

Specifies the virtual circuit ID on the SDP ID to be cleared.

**Values** 1 to 4294967295

### *ip-address*

Specifies the interface IP address.

**Values** a.b.c.d

### *ip-int-name*

Specifies the interface name, up to 32 characters.

## Platforms

All

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (show>subscr-mgmt>gtp statistics)

## Full Context

show subscriber-mgmt gtp statistics

## Description

This command displays GTP statistics information.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of GTP statistics.

### Output Example

```
Node# show subscriber-mgmt gtp statistics
=====
GTP statistics
=====
tx echo requests                : 23
tx echo responses                : 0
tx errors                       : 0
rx echo requests                : 0
rx echo responses                : 23
rx errors                       : 0
rx version not supported        : 0
rx zero TEID responses          : 0
path faults                     : 0
path restarts                   : 0
tx invalid msgs                 : 0
tx create PDP context requests  : 0
tx create PDP context responses : 0
tx delete PDP context requests  : 0
tx delete PDP context responses : 0
tx create session requests      : 0
tx create session responses     : 1
tx delete session requests      : 0
tx delete session responses     : 0
tx delete bearer requests       : 0
tx delete bearer responses      : 0
tx create bearer responses      : 0
tx update bearer responses      : 0
tx modify bearer requests       : 0
tx modify bearer responses      : 1
tx change notification responses : 0
tx rls access bearers responses : 0
tx error indication count       : 0
tx downlink notifications       : 0
tx stop paging indication       : 0
tx end marker                   : 0
rx invalid msgs                 : 0
rx create PDP context requests  : 0
rx create PDP context responses : 0
rx delete PDP context requests  : 0
rx delete PDP context responses : 0
rx create session requests      : 1
rx create session responses     : 0
rx delete session requests      : 0
rx delete session responses     : 0
rx delete bearer requests       : 0
rx delete bearer responses      : 0
rx create bearer requests       : 0
rx update bearer requests       : 0
rx modify bearer requests       : 1
rx modify bearer responses      : 0
rx change notification requests : 0
rx rls access bearers request   : 0
rx error indication count       : 0
rx downlink notification ack    : 0
rx downlink notification fail   : 0
rx invalid pkt length           : 0
rx unknown pkts                 : 0
rx missing IE pkts              : 0
```

```
rx bad UDP header pkts          : 0
rx discarded pkts               : 0
rx in-session discarded pkts    : 0
rx pkts                         : 25
tx discarded pkts               : 0
tx pkts                         : 25
rx UDP checksum error          : 0
=====
```

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (show>router>l2tp statistics)

### Full Context

show router l2tp statistics

### Description

This command displays L2TP statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of L2TP statistics information.

### Output Example

```
*A:Dut-C# show router l2tp statistics
=====
L2TP Statistics
=====
Tunnels                               Sessions
-----
Active          : 3                Active          : 6

Setup history since 04/17/2009 18:38:41

Total          : 4                Total          : 9
Failed         : 0                Failed         : 0
Failed Auth    : 0
=====
*A:Dut-C#
```

## statistics

### Syntax

**statistics** [{**sap** *sap-id* | **interface** *ip-int-name* | *ip-address*}]

### Context

**[Tree]** (show>service>id>pppoe statistics)

### Full Context

show service id pppoe statistics

### Description

This command displays PPPoE statistics.

### Parameters

#### *sap-id*

Displays information for the specified SAP.

#### *ip-int-name*

Displays information about the specified interface.

#### *ip-address*

Displays information about the specified IP address.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of PPPoE statistics information.

### Output Example

```
*A:ALA-49# show service id 20 pppoe statistics
=====
PPPoE statistics for IES service 20
=====
Packet Type      Received      Transmitted
-----
PADI              2             -
PADO              -             2
PADR              2             -
PADS              -             2
PADT              0             0
session          9838         9839
-----
Drop Counters
-----
Rx Invalid Version : 0
Rx Invalid Type    : 0
Rx Invalid Code    : 0
Rx Invalid Session : 0
```

```
Rx Invalid Length      : 0
Rx Invalid Tags        : 0
Rx Invalid AC-Cookie   : 0
Rx Dropped             : 0
=====
*A:ALA-49#
```

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (clear>router>l2tp>peer statistics)

**[Tree]** (clear>router>l2tp>group statistics)

**[Tree]** (clear>router>l2tp>tunnel statistics)

**[Tree]** (clear>router>l2tp statistics)

### Full Context

clear router l2tp peer statistics

clear router l2tp group statistics

clear router l2tp tunnel statistics

clear router l2tp statistics

### Description

This command clears statistics for the specified context.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## statistics

### Syntax

**statistics** [{**sap** *sap-id* | **interface** *ip-int-name* | *ip-address*}]

### Context

**[Tree]** (clear>service>id>pppoe statistics)

### Full Context

clear service id pppoe statistics

## Description

This command clears PPPoE statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (show>service>dynsvc>script statistics)

## Full Context

show service dynamic-services script statistics

## Description

This command displays dynamic service script statistics. Only non-zero values are shown.

The script statistics can be cleared with the "clear service statistics dynamic-services" command.



### Note:

This command is not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of Dynamic Services script statistics information, and [Table 529: Output fields: show service dynamic-services script statistics](#) describes the output fields.

### Output Example

```
# show service dynamic-services script statistics
=====
Dynamic Services Script Statistics
=====
Description                                                    Counter
-----
python scripts with 0 retries due to timeout                  46
setup - jobs launched                                         16
setup - jobs handled                                          16
setup - success                                               13
setup - syntax error                                         1
setup - execution failed                                      2
teardown - jobs launched                                      15
teardown - jobs handled                                       15
teardown - success                                           14
teardown - syntax error                                       1
-----
```

```
No. of Script Statistics: 10
-----
Last Cleared Time: 02/26/2013 09:59:07
=====
```

Table 529: Output fields: show service dynamic-services script statistics

Output field	Description
Description	The name of the script.
Counter	The number of times the script executed.
python scripts with 0 retries due to timeout	The number of retries due to timeouts.
setup	The setup script action. jobs launched — The number of times the setup jobs launched. jobs handled — The number of times the setup jobs were handled. success — The number of times the setup jobs were successful. syntax error — The number of setup syntax errors. execution failed — The number of times the setup failed.
teardown	The teardown script action. jobs launched — The number of times the teardown jobs launched. jobs handled — The number of times the teardown jobs were handled. success — The number of times the teardown jobs were successful. syntax error — The number of teardown syntax errors.

## statistics

### Syntax

**statistics iom** (*slot* | all) [host | session | subscriber | summary] [non-zero-value-only]  
**statistics mda** (*mda* | all) [host | session | subscriber | summary] [non-zero-value-only]  
**statistics port** (*port-id* | all) [host | session | subscriber | summary] [non-zero-value-only]  
**statistics pw-port** (*pw-port* | all) [host | session | subscriber | summary] [non-zero-value-only]  
**statistics system** (*pw-port* | all) [host | session | subscriber | summary] [non-zero-value-only]  
**statistics service** (*svc-id* | all) [host | session | summary] [non-zero-value-only]



**statistics service** {*svc-id*} **subscriber-interface** { *sub-itf* | **all** } [**host** | **session** | **summary**] [**non-zero-value-only**]

**statistics service** {*svc-id*} **group-interface** { *grp-itf* | **all** } [**host** | **session** | **summary**] [**non-zero-value-only**]

**statistics sla-profiles**

**statistics sub-profiles**

**statistics system** [**host** | **session** | **subscriber** | **summary**] [**non-zero-value-only**]

## Context

[\[Tree\]](#) (show>subscr-mgmt statistics)

## Full Context

show subscriber-mgmt statistics

## Description

This command displays enhanced subscriber management statistics per port, PW port, MDA, IOM, system, service, subscriber interface, or group interface.

For each statistic, a current value and peak value is displayed. The peak value is the highest generated value since the last reset as a result of a system boot or the **clear subscriber-mgmt peakvalue-stats** command.



### Note:

The user can execute the **clear subscriber-mgmt peakvalue-stats** command to reset the peak values.

## Parameters

### **iom slot**

Displays specified IOM slot information.

### **mda mda**

Displays specified slot and mda information.

### **port port-id**

Specifies to display information for both the physical port ID and LAG.

### **pw-port pw-port**

Specifies to display information for a pseudowire port ID.

**Values** 1 to 10239

### **all**

Displays statistics of all IOM or MDA or port or pseudowire port in the system

### **host**

Displays v4/v6 host statistics only.

### **session**

Displays PPPoX/LAC/LNS session statistics only.

### **sla-profiles**

Displays the current and historical statistics for SLA profiles.

### **service *svc-id***

Displays the current and historical statistics for service level profiles.

**Values** 1 to 2148278386 | *svc-name*: up to 64 characters

### **sub-profiles**

Displays the current and historical statistics for subscriber profiles.

### **subscriber**

Displays subscriber statistics only.

### **subscriber-interface *sub-ity***

Displays specified subscriber interface level statistics, up to 32 characters.

### **group-interface *grp-ity***

Displays specified group-interface level statistics, up to 32 characters.

### **summary**

Displays summary statistics only.

### **non-zero-value-only**

Displays only non-zero value counters.

The following tables describe the counters available in the **show subscriber management statistics** command output.

The following terminology is used to indicate applicability of the stats:

- ESM — Enhanced Subscriber Management. Subscriber traffic forwarded via subscriber queues. Enabled with SAP **sub-sla-mgmt** in no shutdown state
- BSM — Basic Subscriber Management. Subscriber traffic forwarded via SAP queues. SAP sub-sla-mgmt must be in shutdown state. For DHCP, dhcp lease-populate or dhcp6-relay lease-populate must be enabled to count the leases. For IPv4, if anti-spoof is enabled on the SAP, a subscriber host is instantiated.
- Routed CO — IES or VPRN service with subscriber interface and group interface constructs
- Bridged CO — VPLS service with DHCPv4 lease management enabled (lease-populate)
- regular interface — IES or VPRN interface (none subscriber-interface or group-interface)
- Host (also subscriber host) — A resource in the system that is used for traffic forwarding and security related actions. The creation of a subscriber host entry is linked to anti-spoof being enabled on a SAP. For ESM, anti-spoof is mandatory and hence every connected {IP/MAC} consumes by default a subscriber host entry. A DHCP6 IA-PD can also be modeled as a managed route. In this case, no subscriber host is instantiated. For BSM, anti-spoof is optional on regular interfaces. An IPv4 static-host and DHCPv4 lease do not result in a subscriber host instantiation when anti-spoof is disabled on the SAP.

Table 530: Host and Protocol Statistics

Section	Counter	Counts	Applies to
IPv4	PPP Hosts - IPCP	IPv4 local terminated PPP hosts (PTA, LNS)	ESM, Routed CO
	IPOE Hosts - DHCP	DHCPv4 hosts (lease states)	ESM, Routed CO, Bridged CO
	IPOE Hosts - ARP	ARP hosts	ESM, Routed CO, Bridged CO
	IPOE Hosts – Static	IPv4 static hosts	ESM, Routed CO, Bridged CO
	IPOE Mngd Hosts – Data-trig	Data triggered IPv4 hosts	ESM, Routed CO
	IPOE Mngd Hosts – AAA	vRGW managed static IPv4 addresses: IPv4 static hosts created via RADIUS (Alc-Reserved-Addresses)	ESM, Routed CO
	IPOE Mngd Hosts – GTP	IPv4 GTP access host	ESM, Routed CO
	IPOE Mngd Hosts – Bonding	IPv4 hosts associated with an internal IPoE session of a connection bonding subscriber context	ESM, Routed CO
	IPOE Hosts BSM - DHCP	DHCPv4 hosts (lease states: anti-spoof and lease-populate enabled)	BSM, Routed CO, Bridged CO, regular interface
	IPOE Hosts BSM – Static	IPv4 static hosts (with anti-spoof enabled)	BSM, Routed CO, Bridged CO, regular interface
	IPOE BSM - DHCP	DHCPv4 lease states (with lease-populate enabled, no anti-spoof)	BSM, Routed CO, Bridged CO, regular interface
IPOE BSM – Static	IPv4 static hosts (no anti-spoof)	BSM, Routed CO, Bridged CO, regular interface	
IPv6	PPP Hosts – SLAAC	Local terminated IPv6 wan-host – SLAAC (PTA, LNS)	ESM, Routed CO
	PPP Hosts - DHCP6 (NA)	Local terminated IPv6 wan-host (PTA, LNS) – DHCP6 IA-NA leases over PPP	ESM, Routed CO

Section	Counter	Counts	Applies to
	PPP Hosts - DHCP6 (PD)	Local terminated IPv6 pd-host (PTA, LNS) – DHCP6 IA-PD leases over PPP (excluding PD as managed route)	ESM, Routed CO
	PPP Mngd Routes - DHCP6 (PD)	IPv6 (PTA, LNS) – DHCP6 IA-PD leases over PPP (PD as managed route only)	ESM, Routed CO
	IPOE Hosts – SLAAC	IPv6 wan-host – SLAAC	ESM, Routed CO
	IPOE Hosts - DHCP6 (NA)	IPv6 wan-host – DHCP6 IA-NA leases	ESM, Routed CO
	IPOE Hosts - DHCP6 (PD)	IPv6 pd-host – DHCP6 IA-PD leases (excluding PD as managed route)	ESM, Routed CO
	IPOE Mngd Routes - DHCP6 (PD)	IPv6 – DHCP6 IA-PD leases (PD as managed route only)	ESM, Routed CO
	IPOE Hosts – Static (WAN)	IPv6 static hosts with prefix-length equal to /128	ESM, Routed CO
	IPOE Hosts – Static (Pfx)	IPv6 static hosts with prefix-length shorter than /128	ESM, Routed CO
	IPOE Mngd Hosts – Data-trig (Pfx)	Data triggered IPv6 Prefix host (prefix length shorter than /128)	ESM, Routed CO
	IPOE Mngd Hosts – Data-trig (Pfx)	Data triggered IPv6 Prefix host (prefix length shorter than /128)	ESM, Routed CO
IPv6 (Cont)	IPOE Mngd Routes – Data-trig (Pfx)	Data triggered IPv6 Prefix (prefix length shorter than /128) modeled as a managed route	ESM, Routed CO
	IPOE Mngd Hosts - AAA	(currently unused)	Not applicable
	IPOE Mngd Hosts – GTP (SLAAC)	IPv6 (SLAAC) GTP Access host	ESM, Routed CO
	IPOE Mngd Hosts - Bonding	IPv6 hosts associated with an internal IpoE session of a connection bonding subscriber context..	ESM, Routed CO
	IPOE BSM - DHCP6 (NA)	IPv6 – DHCP6 IA-NA leases (lease-populate)	BSM, regular interface
	IPOE BSM - DHCP6 (PD)	IPv6 – DHCP6 IA-PD leases (lease-populate)	BSM, regular interface

Section	Counter	Counts	Applies to
Total	PPP Hosts	Local terminated PPP hosts (PTA, LNS)	ESM
	IPOE Hosts	Total IPv4 and IPv6 IPOE hosts	ESM
	IPv4 Hosts	Total IPv4 hosts, PPP (PTA, LNS) and IPOE	ESM
	IPv6 Hosts	Total IPv6 hosts, PPP (PTA, LNS) and IPOE	ESM
	IPv6 PD Mngd Routes	Total DHCP6 IA-PD leases modeled as a managed route. PPP (PTA, LNS) and IPOE	ESM
	L2TP LAC Hosts	L2TP LAC hosts – single host per single or dual stack PPP session  Counter also increases for outgoing LTS sessions.	ESM, Routed CO
	L2TP LNS Hosts	L2TP LNS hosts – single host per single or dual stack PPP session	ESM, Routed CO
Total (Cont)	Internal Hosts	Subscriber hosts for internal use. For example, LNS redirect hosts (for LTS, an LNS redirect host is also instantiated).  The internal LNS redirect host only counts against the system limit and not against the per line card limit.	ESM
	Non-Sub-Traffic L2-Hosts	A host on a single subscriber SAP in a VPLS service that enables non-IP traffic to be forwarded using the specified SLA profile instance queues.  Host on a single subscriber SAP attached to an IES or VPRN group-interface that enables traffic normally forwarded using the SAP queues to flow using the specified SLA profile instance queues.  <b>configure&gt;service&gt;vpls service-id&gt;sap sap-id&gt;sub-sla-mgmt single-sub-parameters&gt;non-sub-traffic sub-profile sub-profile-name sla-profile sla-profile-name [subscriber sub-ident-string] [app-profile app-profile-name]</b>	ESM, Routed CO, Bridged CO

Section	Counter	Counts	Applies to
	DHCP leases	Total number of DHCPv4 lease states	ESM, BSM
	DHCPv6 leases	Total number of DHCPv6 lease states	ESM, BSM
	Subscriber Hosts	Counter displayed in the output of <b>show&gt;subscriber-mgmt&gt;statistics [iom   mda   port   pw-port]</b>	ESM
	System Hosts Scale	Counter displayed in the output of <b>show&gt;subscriber-mgmt&gt;statistics system</b>  This counter matches the number of hosts accounted for in the system wide limit.	ESM

Table 531: PPP Session Statistics

Section	Counter	Counts	Applies to
Local	PPP Sessions - PPPoE	Local terminated PPPoE sessions (PTA)	ESM, Routed CO
	PPP Sessions - PPPoEoA	Local terminated PPPoEoA sessions (PTA)	ESM, Routed CO
	PPP Sessions - PPPoA	Local terminated PPPoA sessions (PTA)	ESM, Routed CO
	PPP Sessions - L2TP (LNS)	Local terminated PPP sessions (L2TP LNS)	ESM, Routed CO
LAC	PPP Sessions - PPPoE	Tunneled PPPoE session (L2TP LAC)	ESM, Routed CO
	PPP Sessions - PPPoEoA	Tunneled PPPoEoA session (L2TP LAC)	ESM, Routed CO
	PPP Sessions - PPPoA	Tunneled PPPoA session (L2TP LAC)	ESM, Routed CO
	PPP Sessions - L2TP (LTS)	Tunneled PPP session (L2TP LTS)	ESM, Routed CO
Total	PPP Sessions - established	PPP sessions that are established (at least one active host attached) – PTA/LAC/LTS/LNS	ESM, Routed CO
	PPP Sessions - in setup	PPP sessions in setup (session created, host setup in progress) – PTA/LAC/LTS/LNS	ESM, Routed CO
	PPP Sessions - local	Local terminated PPPoX sessions (PTA, L2TP LNS)	ESM, Routed CO

Section	Counter	Counts	Applies to
	PPP Sessions - LAC	Tunneled PPPoX session (L2TP LAC, L2TP LTS)	ESM, Routed CO
L2TP	L2TP Tunnels - originator	Number of L2TP Tunnels originated on this node. (LAC/LTS)	ESM, Routed CO
	.L2TP Tunnels - receiver	Number of L2TP Tunnels terminated on this node. (LNS/LTS)	ESM, Routed CO
	Total L2TP Tunnels	Number of L2TP Tunnels originated or terminated on this node.	ESM, Routed CO

Table 532: IPoE Session Statistics

Section	Counter	Counts	Applies to
Total	IPOE Sessions - established	IPoE sessions that are established (at least one active host attached).	ESM, Routed CO
	IPOE Sessions- in setup	IPoE sessions in setup (session created, host setup in progress).	ESM, Routed CO

Table 533: Subscriber Statistics

Section	Counter	Counts	Applies to
Total	Subscribers	Total number of active subscribers.	ESM, Routed CO, Bridged CO

Table 534: SubMgmt Statistics Summary

Section	Counter	Counts
Hosts	IPv4	Total IPv4 hosts
	IPv6	Total IPv6 hosts
Sessions	PPP	Total PPP sessions established
	IPOE	Total IPOE sessions established
Subscribers		Total number of active subscribers

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following outputs are examples of subscriber management statistics information.

### Output Example

```
A:PE-1# show subscriber-mgmt statistics port 1/1/4 summary
=====
SubMgmt Statistics
=====
Port Id          |      Hosts      |      Sessions   |      Subscribers
                 | IPv4   IPv6   | PPP   IPOE   |
-----|-----|-----|-----|
1/1/4           |      2      2 |      1     1 |      2 (Curr)
                 |      3      3 |      1     2 |      3 (Peak)
=====
```

### Output Example

```
A:PE-1# show subscriber-mgmt statistics sla-profiles
=====
SLA Profile Statistics
=====
SLA-Profile Name          Current      Peak      Peak Timestamp
-----|-----|-----|-----|
tv-prof                   0           0
hsi-prof                  1           1 12/29/2016 15:50:50
hsi-iptv--prof           0           0
no-prof-1                 1           1 01/03/2017 20:00:37
hsi-voip-prof            0           2 12/29/2016 18:42:44
-----|-----|-----|-----|
Total                     2
=====
```

### Output Example

```
A:PE-1# show subscriber-mgmt statistics sub-profiles
=====
Subscriber Profile Statistics
=====
Subscriber-Profile Name    Current      Peak      Peak Timestamp
-----|-----|-----|-----|
no-prof                   2           3 12/29/2016 18:42:44
sub-10M                   0           0
sub-10M-UPNP              0           0
sub-20M                   0           0
sub-20M-UPNP              0           0
-----|-----|-----|-----|
Total                     2
=====
```

### Output Example

```
A:pe1# show subscriber-mgmt statistics system
=====
Subscriber Management Statistics for System
=====
Type          Current      Peak      Peak Timestamp
-----|-----|-----|-----|
Host & Protocol Statistics
-----|-----|-----|-----|
```



IPv4	PPP Hosts	- IPCP	0	0
	PPP Hosts	- PFCP	0	0
	IPOE Hosts	- DHCP	0	0
	IPOE Hosts	- ARP	0	0
	IPOE Hosts	- Static	0	0
	IPOE Hosts	- PFCP	0	0
	IPOE Mngd Hosts	- Data-trig	0	0
	IPOE Mngd Hosts	- AAA	0	0
	IPOE Mngd Hosts	- GTP	0	0
	IPOE Mngd Hosts	- Bonding	0	0
	IPOE Hosts BSM	- DHCP	0	0
	IPOE Hosts BSM	- Static	0	0
	IPOE BSM	- DHCP	0	0
	IPOE BSM	- Static	0	0
-----				
IPv6	PPP Hosts	- SLAAC	0	0
	PPP Hosts	- DHCP6 (NA)	0	0
	PPP Hosts	- DHCP6 (PD)	0	0
	PPP Mngd Routes	- DHCP6 (PD)	0	0
	PPP Hosts	- PFCP (SLAAC)	0	0
	PPP Hosts	- PFCP (NA)	0	0
	PPP Hosts	- PFCP (PD)	0	0
	IPOE Hosts	- SLAAC	0	0
	IPOE Hosts	- DHCP6 (NA)	0	0
	IPOE Hosts	- DHCP6 (PD)	0	0
	IPOE Mngd Routes	- DHCP6 (PD)	0	0
	IPOE Hosts	- Static (WAN)	0	0
	IPOE Hosts	- Static (Pfx)	0	0
	IPOE Hosts	- PFCP (SLAAC)	0	0
	IPOE Hosts	- PFCP (NA)	0	0
	IPOE Hosts	- PFCP (PD)	0	0
	IPOE Mngd Hosts	- Data-trig (WAN)	0	0
	IPOE Mngd Hosts	- Data-trig (Pfx)	0	0
	IPOE Mngd Routes	- Data-trig (Pfx)	0	0
	IPOE Mngd Hosts	- AAA	0	0
	IPOE Mngd Hosts	- GTP (SLAAC)	0	0
	IPOE Mngd Hosts	- Bonding	0	0
IPOE BSM	- DHCP6 (NA)	0	0	
IPOE BSM	- DHCP6 (PD)	0	0	
-----				
Total	PPP Hosts		0	0
	IPOE Hosts		0	0
	IPv4 Hosts		0	0
	IPv6 Hosts		0	0
	IPv6 PD Mngd Routes		0	0
	L2TP LAC Hosts		0	0
	L2TP LNS Hosts		0	0
	Internal Hosts		0	0
	Non-Sub-Traffic L2-Hosts		0	0
	DHCP Leases		0	0
	DHCPv6 Leases		0	0
	PFCP Hosts		0	0
	System Hosts Scale		0	0
	-----			

## statistics

### Syntax

**statistics sub-profile** {*sub-profile-name* | all}

**statistics sla-profile** {*sla-profile-name* | **all**}

### Context

[\[Tree\]](#) (clear>subscriber-mgmt statistics)

### Full Context

clear subscriber-mgmt statistics

### Description

This command clears the current and historical statistics.

### Parameters

***sub-profile-name***

Clears the statistics for a specific subscriber profile, limited to 32 characters.

**sub-profile all**

Clears all subscriber profile statistics.

***sla-profile-name***

Clears the statistics for a specific SLA profile, limited to 32 characters.

**sla-profile all**

Clears all SLA profile statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## statistics

### Syntax

**statistics interface** *subscriber-interface* [ **id** *srrp-id* ]

### Context

[\[Tree\]](#) (clear>router>srrp statistics)

### Full Context

clear router srrp statistics

### Description

This command clears statistics for SRRP instances.

### Parameters

***subscriber-interface***

Specifies an existing subscriber interface name up to 32 characters.

***srrp-id***

Specifies an existing SRRP ID.

**Values** 1 to 4294967295

**Platforms**

All

**statistics**

**Syntax**

statistics

**Context**

[\[Tree\]](#) (clear>service statistics)

**Full Context**

clear service statistics

**Description**

This command clears the statistics for a service.

**Platforms**

All

**statistics**

**Syntax**

statistics [*policy name*] [*sap sap-id*]

**Context**

[\[Tree\]](#) (show>service>id>auth statistics)

**Full Context**

show service id authentication statistics

**Description**

This command displays session authentication statistics for this service.

**Parameters**

***policy name***

Specifies an existing authentication policy name.

**sap-id**

Specifies the physical port identifier portion of the SAP definition.

**Platforms**

All

**Output**

The following output is an example of service authentication statistics information

**Output Example**

```
*A:ALA-48# show service id 700 authentication statistics
=====
Authentication Statistics for service 700
=====
Client Packets Authenticate Fail   : 0
Client Packets Authenticate Ok    : 0
=====
*A:ALA-48#
```

**statistics**

**Syntax**

**statistics** [**sap** *sap-id* | **sdp** *sdp-id:vc-id*]

**Context**

[\[Tree\]](#) (show>service>id>mld-snooping statistics)

**Full Context**

show service id mld-snooping statistics

**Description**

This command displays MLD snooping statistics.

**Platforms**

All

**Output**

The following output is an example of MLD snooping statistics information.

**Output Example**

```
*A:rbae_C# show service id 1 mld-snooping statistics
=====
MLD Snooping Statistics for service 1
=====
Message Type           Received      Transmitted   Forwarded
-----
General Queries        109           0             327
```

```

Group Queries          0          0          0
Group-Source Queries  0          0          0
V1 Reports             0          0          0
V2 Reports            438         87         0
V1 Done               0          0          0
Unknown Type          0          N/A         0
-----
Drop Statistics
-----
Bad Length             : 0
Bad MLD Checksum      : 0
Bad Encoding          : 0
No Router Alert       : 0
Zero Source IP        : 0
Wrong Version         : 0
Lcl-Scope Packets    : 0
Rsvd-Scope Packets   : 0

Send Query Cfg Drops  : 0
Import Policy Drops   : 0
Exceeded Max Num Groups : 0
MCAC Policy Drops     : 0
MCS Failures          : 0

MVR From VPLS Cfg Drops : 0
MVR To SAP Cfg Drops   : 0
=====
*A:rbae_C#
    
```

## statistics

### Syntax

**statistics** [**evpn-mpls** | **sap** *sap-id* | **sdp** *sdp-id:vc-id* | **vxlan vtep** *ip-address vni vni*]

### Context

[\[Tree\]](#) (show>service>id>igmp-snooping statistics)

### Full Context

show service id igmp-snooping statistics

### Description

This command displays IGMP snooping statistics for the VPLS service.

### Parameters

#### **evpn-mpls**

Displays IGMP snooping statistics for EVPN-MPLS destinations

#### **sap-id**

Displays IGMP snooping statistics for a specific SAP

#### **sdp-id**

Displays the IGMP snooping statistics for a specific spoke or mesh SDP

**Values** 1 to 17407

**vc-id**

The virtual circuit ID on the SDP ID for which to display information

**Default** For mesh SDPs only, all VC IDs.

**Values** 1 to 4294967295

**vxlan vtep ip-address vni <1..16777215>**

Displays the IGMP snooping entries associated with a specific VXLAN binding, given by the VXLAN Termination Endpoint (VTEP) and VXLAN Network Identifier (VNI). This parameter only applies to the 7450 ESS or 7750 SR.

**vni**

The VXLAN Network Identifier (VNI) for which to display information. This parameter only applies to the 7450 ESS or 7750 SR.

**Values** 1 to 16777215

**Platforms**

All

**Output**

**Output Example**

```
*A:ALA-1>show>service>id>snooping# statistics
=====
IGMP Snooping Statistics for service 1
=====
Message Type           Received      Transmitted   Forwarded
-----
General Queries        4             0             4
Group Queries          0             0             0
Group-Source Queries   0             0             0
V1 Reports             0             0             0
V2 Reports             0             0             0
V3 Reports             0             0             0
V2 Leaves             0             0             0
Unknown Type          0             N/A           0
-----
Drop Statistics
-----
Bad Length             : 0
Bad IP Checksum        : 0
Bad IGMP Checksum     : 0
Bad Encoding           : 0
No Router Alert       : 0
Zero Source IP        : 0

Send Query Cfg Drops  : 0
Import Policy Drops   : 0
Exceeded Max Num Groups : 0

MVR From VPLS Cfg Drops : 0
MVR To SAP Cfg Drops   : 0
```

```
=====
*A:ALA-1>show>service>id>snooping#
```

## statistics

### Syntax

**statistics** [*ip-int-name* | *ip-address*]

**statistics group-interface** [**fwd-service** *service-id*] [*ip-int-name*]

**statistics host** [*ip-address*]

### Context

[\[Tree\]](#) (show>router>igmp statistics)

### Full Context

show router igmp statistics

### Description

This command displays IGMP statistics information.

### Parameters

#### *ip-int-name*

Displays information associated with the specified IP interface name, up to 32 characters.

#### *ip-address*

Displays information associated with the specified IP address.

### Platforms

All

### Output

The following output is an example of IGMP statistics information. [Table 535: IGMP Statistics Fields](#) provides statistical IGMP field descriptions.

#### Output Example

```
*A:ALA-BA# show router igmp interface "IGMP_to_CE"
=====
IGMP Interface IGMP_to_CE Statistics
=====
Message Type           Received      Transmitted
-----
Queries                0             0
Report V1              0             0
Report V2              0             0
Report V3              0             0
Leaves                 0             0
-----
Interface General Statistics
-----
```

```

Bad Length      : 0
Bad Checksum    : 0
Unknown Type    : 0
Drops          : 0
Rx Non Local    : 0
Rx Wrong Version : 0
Policy Drops    : 0
No Router Alert : 0
Rx Bad Encodings : 0
Local Scope Pkts : 0
Resvd Scope Pkts : 0
MCAC Policy Drops : 0
-----
Interface Source Group Statistics
-----
(S,G)          : 0
(*,G)         : 0
=====
*A:ALA-BA#

*B:Dut-C# show router igmp statistics host
=====
IGMP Host Statistics
=====
Message Type      Received      Transmitted
-----
Queries           0             1739
Report V1         0             0
Report V2         0             0
Report V3         10            0
Leaves            0             0
-----
General Host Statistics
-----
Bad Length      : 0
Bad Checksum    : 0
Unknown Type    : 0
Bad Receive If  : 0
Rx Non Local    : 0
Rx Wrong Version : 0
Policy Drops    : 0
No Router Alert : 0
Rx Bad Encodings : 0
Local Scope Pkts : 0
Resvd Scope Pkts : 0
MCAC Policy Drops : 0
=====
*B:Dut-C#
    
```

Table 535: IGMP Statistics Fields

Label	Description
IGMP Interface Statistics	Lists the IGMP statistics for a particular interface.
Message Type	Queries — The number of IGMP general queries transmitted or received on this interface.
	Report — The total number of IGMP V1, V2, or V3 reports transmitted or received on this interface.



Label	Description
	Leaves — The total number of IGMP leaves transmitted on this interface.
Received	The total number of IGMP packets received on this interface.
Transmitted	The total number of IGMP packets transmitted from this interface.
General Interface Statistics	The general IGMP statistics.
Bad Length	The total number of IGMP packets with bad length received on this interface.
Bad Checksum	The total number of IGMP packets with bad checksum received on this interface.
Unknown Type	The total number of IGMP packets with unknown type received on this interface.
Drops	The total number of IGMP packets dropped on this interface.
Rx Non Local	The total number of IGMP packets received from a non-local sender.
Rx Wrong Version	The total number of IGMP packets with wrong versions received on this interface.
Policy Drops	The total number of IGMP packets dropped by import policies on this interface.
No Router Alert	The total number of IGMPv3 packets received on this interface which did not have the router alert flag set.
Rx Bad Encodings	The total number of IGMP packets with bad encodings received on this interface.
Rx Pkt Drops	The total number of IGMP receive packet drops on this interface.
Local Scope Pkts	The total number of IGMP packets with local scope received on this interface.
Resvd Scope Pkts	The total number of IGMP packets with reserved scope received on this interface.
MCAC Policy Drops	The total number of IGMP packets dropped by MCAC policies on this interface.

## statistics

### Syntax

**statistics all**

**statistics sap** *sap-id*

**statistics sdp** *sdp-id:vc-id*

**statistics vxlan vtep** *ip-address vni vni-id*

### Context

[\[Tree\]](#) (clear>service>id>mld-snooping statistics)

### Full Context

clear service id mld-snooping statistics

### Description

This command clears MLD snooping statistics.

### Parameters

#### *sap-id*

Clears MLD snooping statistics for the specified SAP.

#### *sdp-id*

Clears MLD snooping statistics associated with the specified SDP. For a spoke-SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

#### *vni-id*

Clears the MLD snooping statistics for the specified VXLAN VNI id.

**Values** 1 to 16777215

#### *ip-address*

Specifies a specific configured static egress VTEP to clear the MLD snooping statistics associated only with the VTEP.

### Platforms

All

## statistics

### Syntax

**statistics**

## Context

[\[Tree\]](#) (clear>service>id>authentication statistics)

## Full Context

clear service id authentication statistics

## Description

This command clears session authentication statistics for this service.

## Platforms

All

## statistics

## Syntax

**statistics** {**evpn-mpls** | **all** | **sap** *sap-id* | **sdp** *sdp-id:vc-id* | **vxlan vtep** *ip-address vni vni-id*}

## Context

[\[Tree\]](#) (clear>service>id>igmp-snooping statistics)

## Full Context

clear service id igmp-snooping statistics

## Description

This command clears IGMP snooping statistics for the VPLS service.

## Parameters

### **all**

Clears the IGMP snooping information for all port objects in the service

### **evpn-mpls**

Clears IGMP snooping statistics for EVPN-MPLS destinations

### **sap-id**

Clears the IGMP snooping information on the specified SAP

### **sdp-id**

Clears only IGMP snooping entries associated with the specified mesh SDP or spoke-SDP. For a spoke-SDP, the VC ID must be specified, for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

### **vc-id**

Clears statistics for the specified virtual circuit ID on the SDP ID

**Default** For mesh SDPs only, all VC IDs

**Values** 1 to 4294967295

**vxlan vtep ip-address vni <1..16777215>**

Clears the IGMP snooping statistics associated with a specific VXLAN destination given by the VXLAN Termination Endpoint (VTEP) and VXLAN Network Identifier (VNI). This parameter only applies to the 7450 ESS or 7750 SR.

**vni-id**

Displays information for the specified VXLAN Network Identifier (VNI). This parameter only applies to the 7450 ESS or 7750 SR.

**Values** 1 to 16777215

**Platforms**

All

statistics

**Syntax**

statistics

**Context**

[\[Tree\]](#) (show>subscr-mgmt>wlan-gw statistics)

**Full Context**

show subscriber-mgmt wlan-gw statistics

**Description**

This command displays statistics information.

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

statistics

**Syntax**

statistics

**Context**

[\[Tree\]](#) (show>service>id>spb statistics)

**Full Context**

show service id spb statistics

## Description

This command displays SPB statistics.

## Platforms

All

## Output

The following output is an example of service SPB statistics information.

### Output Example

```
A:cses-B01# show service id spb statistics
=====
ISIS Statistics
=====
ISIS Instance      : 1024                SPF Runs          : 4
Purge Initiated   : 0                  LSP Regens.      : 11

CSPF Statistics
Requests          : 0                  Request Drops    : 0
Paths Found       : 0                  Paths Not Found  : 0

-----
PDU Type  Received  Processed  Dropped   Sent      Retransmitted
-----
LSP        31         31         0          9          0
IIH        532        532        0         533         0
CSNP       479        479        0         479         0
PSNP        9          9          0          27          0
Unknown    0           0          0           0           0
=====
```

## statistics

## Syntax

**statistics** [**sap** *sap-id*] [**sdp** *sdp-id:vc-id*] [*family*]

## Context

**[Tree]** (show>service>id>pim-snooping statistics)

## Full Context

show service id pim-snooping statistics

## Description

This command displays PIM statistics information.

## Parameters

**sap-id**

Displays the statistics associated with the specified SAP

***sdp-id:vc-id***

Displays the statistics associated with the specified SDP

***family***

Displays either IPv4 or IPv6 statistics

**Values**    ipv4 or ipv6

**Platforms**

All

**Output**

The following output is an example of service PIM snooping statistics information.

**Output Example**

```
*A:PE# show service id 1 pim-snooping statistics
=====
PIM Snooping Statistics ipv4
=====
Message Type      Received      Transmitted   Rx Errors
-----
Hello             36            -              0
Join Prune        8             8              0
Total Packets     44            8
-----
General Statistics
-----
Rx Neighbor Unknown      : 0
Rx Bad Checksum Discard  : 0
Rx Bad Encoding          : 0
Rx Bad Version Discard   : 0
Join Policy Drops        : 0
-----
Source Group Statistics
-----
(S,G)                : 1
(*,G)                 : 0
=====
*A:PE#
```

**statistics**

**Syntax**

**statistics** {all | ipv4 | ipv6 | mac}

**statistics group** *grp-address*

**Context**

[\[Tree\]](#) (clear>service>id>mfib statistics)

**Full Context**

clear service id mfib statistics

## Description

This command clears multicast FIB statistics for the VPLS service.

## Parameters

### **all**

Clears all statistics for the service ID

### **ipv4**

Clears IPv4 address statistics for the service ID

### **ipv6**

Clears IPv6 address statistics for the service ID

### **mac**

Clears MAC address statistics for the service ID

### **grp-address**

Specifies an IGMP multicast group address that receives data on an interface

## Platforms

All

## statistics

## Syntax

**statistics** [**evpn-mpls** | **sap** *sap-id* | **sdp** *sdp-id:vc-id* | **vxlan vtep** *ip-address vni vni-id*] [**family**]

## Context

[\[Tree\]](#) (clear>service>id>pim-snooping statistics)

## Full Context

clear service id pim-snooping statistics

## Description

This command clears PIM snooping statistics for the specified SAP or SDP.

## Parameters

### **sap-id**

Clears PIM snooping statistics for the specified SAP

### **sdp-id:vc-id**

Clears PIM statistics for the specified SDP. For a spoke-SDP, the VC ID must be specified; for a mesh SDP, the VC ID is optional.

**Values** 1 to 17407

**family**

Displays either IPv4 or IPv6 information

**Values**    ipv4 or ipv6

**evpn-mpls**

Clears PIM snooping statistics for EVPN-MPLS destinations

**Platforms**

All

**statistics**

**Syntax**

**statistics** [**summary**] [**sap** *sap-id*]

**Context**

[\[Tree\]](#) (show>service>id>host-connectivity-verify statistics)

**Full Context**

show service id host-connectivity-verify statistics

**Description**

This command displays host connectivity verification statistics.

**Parameters**

**sap-id**

Specifies the SAP ID to show statistics for.

**summary**

Displays host connectivity verify summary information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of host connectivity verification statistics information, and [Table 536: Show Host Connectivity Verify Statistics Field Descriptions](#) describes the output fields.

**Output Example**

```
A:ALA-48>show>service>id# host-connectivity-verify statistics sap 1/1/9:0
=====
Host connectivity check statistics
=====
Svc  SapId/      DestIp      Last        Time Oper
Id   SdpId       Address     Response    Expired State
-----
-----
```



```
1000 551/2/3:0 10.144.145.1 Up
=====
A:ALA-48>show>service>id#
```

Table 536: Show Host Connectivity Verify Statistics Field Descriptions

Label	Description
Svc Id	The service identifier.
SapId/Sdpld	The SAP and SDP identifiers.
DestIp Address	The destination IP address.
Last Response	The time when the last response was received.
Time Expired	Displays whether the interval value has expired.
Oper State	Displays the current operational state of the service.

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (show>router>vrrp statistics)

### Full Context

show router vrrp statistics

### Description

This command displays statistics for VRRP instance.

### Platforms

All

### Output

The following output is an example of VRRP statistics information, and table describes the fields.

### Output Example

```
A:ALA-48# show router vrrp statistics
=====
VRRP Global Statistics
=====
VR Id Errors      : 0          Version Errors    : 0
Checksum Errors  : 0
```

Table 537: Show VRRP Statistics Output Fields

Label	Description
VR Id Errors	Displays the number of virtual router ID errors
Version Errors	Displays the number of version errors
Checksum Errors	Displays the number of checksum errors

## statistics

### Syntax

**statistics**

**statistics interface** *interface-name* [**vrid** *virtual-router-id*]

**statistics interface** *interface-name* **vrid** *virtual-router-id* **ipv6**

### Context

[\[Tree\]](#) (clear>router>vrrp statistics)

### Full Context

clear router vrrp statistics

### Description

This command clears statistics for VRRP instances on an IP interface or VRRP priority control policies.

### Parameters

***interface-name***

Clears the VRRP statistics for all VRRP instances on the specified IP interface.

***virtual-router-id***

Clears the VRRP statistics for the specified VRRP instance on the IP interface.

**Default** All VRRP instances on the IP interface.

**Values** 1 to 255

**ipv6**

Clears IPv6 statistics for the specified interface.

### Platforms

All

## statistics

### Syntax

**statistics** [*ip-addr* | *ip-int-name*]

### Context

[\[Tree\]](#) (show>router>rip statistics)

### Full Context

show router rip statistics

### Description

Display Interface level statistics for the RIP protocol.

If no IP address or interface name is specified, then all configured RIP interfaces are displayed.

If an IP address or interface name is specified, then only data regarding the specified RIP interface is displayed.

### Parameters

***ip-addr* | *ip-int-name***

Displays statistics for the specified IP interface.

**Values** ip-int-name: 32 chars max  
ip-address: a.b.c.d

### Platforms

All

### Output

The following output is an example of RIP statistics information, and [Table 538: Show RIP Statistics Field Descriptions](#) describes the output fields.

### Output Example

```
RIP Statistics
=====
Learned Routes      : 0                Timed Out Routes   : 0
Current Memory     : 120624            Maximum Memory    : 262144
-----
Interface "to-web"
-----
Primary IP         : 10.1.1.3          Update Timer      : 30
Timeout Timer     : 180              Flush Timer      : 120
Counter           Total              Last 5 Min       Last 1 Min
-----
Updates Sent      0                0                0
Triggered Updates 0                0                0
Bad Packets Received 0                0                0
```

```

RIPv1 Updates Received      0          0          0
RIPv1 Updates Ignored      0          0          0
RIPv1 Bad Routes           0          0          0
RIPv1 Requests Received    0          0          0
RIPv1 Requests Ignored     0          0          0
RIPv2 Updates Received      0          0          0
RIPv2 Updates Ignored      0          0          0
RIPv2 Bad Routes           0          0          0
RIPv2 Requests Received    0          0          0
RIPv2 Requests Ignored     0          0          0
Authentication Errors      0          0          0
=====
*A:ALA-12#
    
```

Table 538: Show RIP Statistics Field Descriptions

Label	Description
Learned Routes	The number of RIP-learned routes exported to RIP neighbors.
Timed Out Routes	The number of routes that have been timed out.
Current Memory	The amount of memory used by this RIP router instance.
Maximum Memory	The amount of memory allocated for this RIP router instance.
Interface	Displays the name of each interface configured in RIP and associated RIP statistics.
Primary IP	The interface IP address.
Update Timer	The current setting of the RIP update timer value expressed in seconds.
Timeout Timer	The current RIP timeout timer value expressed in seconds.
Flush Timer	The number of seconds after a route has been declared invalid that it is flushed from the route database.
Updates Sent	Total — The total number of RIP updates that were sent. Last 5 Min — The number of RIP updates that were sent in the last 5 minutes. Last 1 Min — The number of RIP updates that were sent in the last 1 minute.
Triggered Updates	Total — The total number of triggered updates sent. These updates are sent before the entire RIP routing table is sent. Last 5 Min — The number of triggered updates that were sent in the last 5 minutes. Last 1 Min — The number of triggered updates that were sent in the last 1 minute.
Bad Packets Received	Total — The total number of RIP updates received on this interface that were discarded as invalid. Last 5 Min — The number of RIP updates received on this interface that were discarded as invalid in the last 5 minutes.

Label	Description
	Last 1 Min — The number of RIP updates received on this interface that were discarded as invalid in the last 1 minute.
RIPv1 Updates Received	Total — The total number of RIPv1 updates received. Last 5 Min — The number of RIPv1 updates received in the last 5 minutes. Last 1 Min — The number of RIPv1 updates received in the last 1 minute.
RIPv1 Updates Ignored	Total — The total number of RIPv1 updates ignored. Last 5 Min — The number of RIPv1 updates ignored in the last 5 minutes. Last 1 Min — The number of RIPv1 updates ignored in the last 1 minute.
RIPv1 Bad Routes	Total — The total number of bad routes received from the peer. Last 5 Min — The number of bad routes received from the peer in the last 5 minutes. Last 1 Min — The number of bad routes received from the peer in the last minute.
RIPv1 Requests Received	Total — The total number of times the router received RIPv1 route requests from other routers. Last 5 Min — The number of times the router received RIPv1 route requests from other routers in the last 5 minutes. Last 1 Min — The number of times the router received RIPv1 route requests from other routers in the last 1 minute.
RIPv1 Requests Ignored	Total — The total number of times the router ignored RIPv1 route requests from other routers. Last 5 Min — The number of times the router ignored RIPv1 route requests from other routers in the last 5 minutes. Last 1 Min — The number of times the router ignored RIPv1 route requests from other routers in the last 1 minute.
RIPv2 Updates Received	Total — The total number of RIPv2 updates received. Last 5 Min — The number of RIPv2 updates received in the last 5 minutes. Last 1 Min — The number of RIPv2 updates received in the last minute.
RIPv2 Updates Ignored	Total — The total number of RIPv2 updates ignored. Last 5 Min — The number of RIPv2 updates ignored in the last 5 minutes. Last 1 Min — The number of RIPv2 updates ignored in the last minute.
RIPv2 Bad Routes	Total — The total number of bad routes received from the peer. Last 5 Min — The number of bad routes received from the peer in the last 5 minutes. Last 1 Min — The number of bad routes received from the peer in the last minute.

Label	Description
RIPv2 Requests Received	<p>Total — The total number of times the router received RIPv2 route requests from other routers.</p> <p>Last 5 Min — The number of times the router received RIPv2 route requests from other routers in the last 5 minutes.</p> <p>Last 1 Min — The number of times the router received RIPv2 route requests from other routers in the last minute.</p>
RIPv2 Requests Ignored	<p>Total — The total number of times the router ignored RIPv2 route requests from other routers.</p> <p>Last 5 Min — The number of times the router ignored RIPv2 route requests from other routers in the last 5 minutes.</p> <p>Last 1 Min — The number of times the router ignored RIPv2 route requests from other routers in the last minute.</p>
Authentication Errors	<p>Total — The total number of authentication errors to secure table updates.</p> <p>Last 5 Min — The number of authentication errors to secure table updates in the last 5 minutes.</p> <p>Last 1 Min — The number of authentication errors to secure table updates in the last minute.</p>

## statistics

### Syntax

**statistics** [**neighbor** {*ip-address* | *ip-int-name*}]

### Context

**[Tree]** (clear>router>rip statistics)

### Full Context

clear router rip statistics

### Description

This command clears statistics for RIP neighbors.

### Parameters

**{*ip-address* | *ip-int-name*}**

Clears the statistics for the specified RIP interface.

**Values** ip-int-name: 32 characters maximum  
 ip-address: a.b.c.d

**Default** Clears statistics for all RIP interfaces.

## Platforms

All

## statistics

### Syntax

```
statistics [neighbor {ip-int-name | ip-address}]
```

### Context

[\[Tree\]](#) (clear>router>ripng statistics)

### Full Context

```
clear router ripng statistics
```

### Description

This command clears statistics for RIPng neighbors.

### Parameters

**{ip-int-name | ip-address}**

Clears the statistics for the specified RIPng interface.

**Default** clears statistics for all RIPng interfaces

## Platforms

All

## statistics

### Syntax

```
statistics
```

### Context

[\[Tree\]](#) (show>router>ldp statistics)

### Full Context

```
show router ldp statistics
```

### Description

This command displays LDP instance statistics related information.

## Platforms

All

## Output

### Output Example

```
*A:Dut-A# show router ldp statistics
=====
LDP Statistics for IPv4 LSR ID 10.20.1.1:0
                IPv6 LSR ID 3ffe::a14:101[0]
=====
Session/Discovery
-----
Active IPv4 Sess   : 3                Active IPv6 Sess   : 3
Active IPv4 LinkAdj : 2                Active IPv6 LinkAdj : 2
Active IPv4 TargAdj : 1                Active IPv6 TargAdj : 1
Active IPv4 If     : 2                Inactive IPv4 If   : 0
Active IPv6 If     : 2                Inactive IPv6 If   : 0
Active IPv4 Peers  : 1                Inactive IPv4 Peers : 0
Active IPv6 Peers  : 1                Inactive IPv6 Peers : 0
IPv4 Attempted Sess : 0                IPv6 Attempted Sess : 0
IPv4 0Load If     : 0                IPv4 0Load Targ Peers : 0
IPv6 0Load If     : 0                IPv6 0Load Targ Peers : 0
-----
Protocol Stats
-----
No Hello Err      : 0                Param Adv Err     : 0
Max PDU Err       : 0                Label Range Err   : 0
Bad LDP Id Err    : 0                Bad PDU Len Err   : 0
Bad Mesg Len Err  : 0                Bad TLV Len Err   : 0
Unknown TLV Err   : 0                Bad Proto Ver Err : 0
Malformed TLV Err : 0                Keepalive Expired Err : 0
Shutdown Notif Sent : 0                Shutdown Notif Recv : 0
-----
Prefixes
-----
IPv4 Pfx FECs Sent : 10                IPv4 Pfx FECs Recv : 10
IPv6 Pfx FECs Sent : 10                IPv6 Pfx FECs Recv : 10
IPv4PfxFec0LSessSnt : 0                IPv4PfxFec0LSessRecv : 0
IPv6PfxFec0LSessSnt : 0                IPv6PfxFec0LSessRecv : 0
IPv4PfxFecIn0Load  : 0                IPv6PfxFecIn0Load  : 0
-----
P2MP
-----
IPv4 P2MP FECs Sent : 0                IPv4 P2MP FECs Recv : 0
IPv6 P2MP FECs Sent : 0                IPv6 P2MP FECs Recv : 0
IPv4P2MPFec0LSessSnt : 0                IPv4P2MPFec0LSessRecv : 0
IPv6P2MPFec0LSessSnt : 0                IPv6P2MPFec0LSessRecv : 0
IPv4P2MPFecIn0Load  : 0                IPv6P2MPFecIn0Load  : 0
-----
Services
-----
Svc FEC128s Sent   : 0                Svc FEC128s Recv   : 0
Svc FEC129s Sent   : 0                Svc FEC129s Recv   : 0
Svc Fec128 0LSessSnt : 0                Svc Fec128 0LSessRecv : 0
Svc Fec129 0LSessSnt : 0                Svc Fec129 0LSessRecv : 0
Svc Fec128 In0Load : 0                Svc Fec129 In0Load : 0
=====
```



## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (clear>router>ldp statistics)

### Full Context

clear router ldp statistics

### Description

This command clears LDP instance statistics.

### Platforms

All

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (show>router>rsvp statistics)

### Full Context

show router rsvp statistics

### Description

This command displays global statistics in the RSVP instance.

### Platforms

All

### Output

The following output is an example of RSVP statistics information.

[Table 539: RSVP Statistics Output Fields](#) describes RSVP statistics output fields.

Table 539: RSVP Statistics Output Fields

Label	Description
PATH Timeouts	The total number of path timeouts.
RESV Timeouts	The total number of RESV timeouts.

### Output Example

```
*A:SR1# /show router rsvp statistics
=====
RSVP Global Statistics
=====
PATH Timeouts      : 0                RESV Timeouts      : 0
GR Helper PATH Tim*: 0            GR Helper RESV Tim*: 0
=====
* indicates that the corresponding row element may have been truncated.

*A:SRU4>show>router>rsvp# statistics
=====
RSVP Global Statistics
=====
PATH Timeouts      : 1026            RESV Timeouts      : 182
=====
*A:SRU4>show>router>rsvp#
```

## statistics

### Syntax

**statistics lsp-ldp head** *ip-prefix/prefix-length* **src-ip** *ip-address*

**statistics lsp-ldp tail** *ip-prefix/prefix-length* **dst-ip** *ip-address*

**statistics src-ip** *ip-address* **dst-ip** *ip-address*

**statistics all**

**statistics src-ip** *ip-address* **dst-ip** *ip-address* **lsp-rsvp** {**head** | **tail**} **tunnel-id** [0..4294967295] **lsp-id** [0..4294967295]

**statistics mpls-tp** *lsp-name* **path** {**working** | **protect**}

**statistics p2mp-interface** *interface-name*

**statistics src-ip** *ip-address* **lsp-rsvp** {**head** | **tail**} **rsvp-session-name** [256 chars max]

### Context

[\[Tree\]](#) (clear>router>bfd statistics)

### Full Context

clear router bfd statistics

## Description

This command clears BFD statistics.

## Parameters

### **all**

Clears all statistics for the BFD instance.

### **dst-ip *ip-address***

Clears statistics about the specified destination IPv4 or IPv6 address.

### ***ip-prefix/prefix-length***

Clears statistics for the specified IP prefix.

**Values**    *ipv4-prefix* — a.b.c.d  
              *ipv4-prefix-length* — 0 to 32  
              *ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)  
              x:x:x:x:x:d.d.d.d  
              x — 0 to FFFF (hexadecimal)  
              d — 0 to 255 (decimal)  
              *ipv6-prefix-length* — 0 to 128

### **lsp-id [0..4294967295]**

Clears statistics about the specified LSP ID.

### **lsp-ldp head**

Clears statistics for the head of the LSP LDP link.

### **lsp-ldp tail**

Clears statistics for the tail of the LSP LDP link.

### **lsp-rsvp {head | tail}**

Clears statistics about the specified link type.

### **mpls-tp *lsp-name***

Clears statistics about the specified MPLS TP LSP.

### **p2mp-interface *interface-name***

Clears statistics about the specified P2MP interface.

### **path {working | protect}**

Clears statistics about the working or protect path.

### **rsvp-session-name [256 chars max]**

Clears statistics about the specified RSVP session.

### **src-ip *ip-address***

Clears statistics about the specified source IPv4 or IPv6 address.

### **tunnel-id [0..4294967295]**

Clears statistics about the specified tunnel ID.

## Platforms

All

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (clear>router>rsvp statistics)

## Full Context

clear router rsvp statistics

## Description

This command clears global statistics for the RSVP instance, for example, clears **path** and **resv timeout** counters.

## Platforms

All

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (show>isa statistics)

## Full Context

show isa statistics

## Description

Commands in this context display ISA statistical information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (clear>video statistics)

### Full Context

clear video statistics

### Description

This command clears video related statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (show>router>bier statistics)

### Full Context

show router bier statistics

### Description

This command displays BIER statistics.

### Platforms

All

## statistics

### Syntax

**statistics group-interface [fwd-service service-id] ip-in-name**

**statistics group-interface all**

**statistics host ip-address**

### statistics host all

**statistics** [**interface** *ip-int-name* | *ip-address*]

### Context

[\[Tree\]](#) (clear>router>igmp statistics)

### Full Context

clear router igmp statistics

### Description

This command clears IGMP statistics on a specified interface or IP address.



#### Note:

An interface, group, and source cannot be specified at the same time.

### Parameters

#### **group-interface** *interface-name*

Clears the IGMP statistics on the specified group interface.

#### **group-interface** all

Clears the IGMP statistics on all group interfaces.

#### **service-id**

Specifies the service ID.

**Values**    service-id: 1 to 2148278386  
              svc-name: up to 64 characters.

#### **host** *ip-address*

Clears the IGMP statistics on the specified host.

#### **host** all

Clears the IGMP statistics on all hosts.

#### **interface** *ip-int-name*

Clears the IGMP statistics on the specified interface.

#### **interface** *ip-address*

Clears the IGMP statistics on the specified IP address.

### Platforms

All

## statistics

### Syntax

**statistics** **policy** *policy-name* [**bundle** *bundle-name*] [ **protocol** {**igmp** | **pim** | **igmpSnpG** | **mld**}]

## statistics

### Context

[\[Tree\]](#) (show>router>mcac statistics)

### Full Context

show router mcac statistics

### Description

This command displays MCAC statistics.

### Parameters

#### *policy-name*

Specifies an existing multicast CAC (MCAC) policy name.

#### *bundle-name*

Displays statistics for the specified existing multicast bundle name.

#### **protocol {igmp | pim | igmpSnpng | mld}**

Displays statistics for the specified applicable protocol.

**Values** igmp, pim, igmpSnpng, mld

### Platforms

All

## statistics

### Syntax

**statistics** [*ip-int-name* | *ipv6-address*]

**statistics ipsec-interface** *ip-int-name*

### Context

[\[Tree\]](#) (show>router>mld statistics)

### Full Context

show router mld statistics

### Description

This command displays MLD statistics information.

### Parameters

#### *ip-int-name*

Displays information associated with the specified IP interface name, up to 32 characters.

**ipv6-address**

Displays information associated with the specified IPv6 address.

**ipsec-interface ip-int-name**

Displays information associated with the specified dynamic name for the MLD-enabled child\_SA.

**Platforms**

All

**Output**

The following output is an example of MLD statistics information. [Table 540: MLD Statistics Fields](#) provides statistical MLD field descriptions.

**Output Example**

```
*A:ALA-BA# show router mld statistics
=====
MLD Interface Statistics
=====
Message Type      Received      Transmitted
-----
Queries           0             9
Report V1         0             0
Report V2         0             0
Dones             0             0
-----
General Interface Statistics
-----
Bad Length       : 0
Bad Checksum     : 0
Unknown Type     : 0
Bad Receive If   : 0
Rx Non Local     : 0
Rx Wrong Version : 0
Policy Drops     : 0
No Router Alert  : 0
Rx Bad Encodings : 0
Rx Pkt Drops     : 0
Local Scope Pkts : 0
Resvd Scope Pkts : 0
MCAC Policy Drops : 0
-----
Source Group Statistics
-----
(S,G)            : 0
(*,G)            : 5
=====
*A:Dut-A#
```

Table 540: MLD Statistics Fields

Label	Description
MLD Interface Statistics	The MLD statistics for a particular interface.



Label	Description
Message Type	<p>Queries — The number of MLD general queries transmitted or received on this interface.</p> <p>Report — The total number of MLD V1 or V2 reports transmitted or received on this interface.</p> <p>Dones — The total number of MLD dones transmitted on this interface.</p>
Received	The total number of MLD packets received on this interface.
Transmitted	The total number of MLD packets transmitted from this interface.
General Interface Statistics	The general MLD statistics.
Bad Length	The total number of MLD packets with bad length received on this interface.
Bad Checksum	The total number of MLD packets with bad checksum received on this interface.
Unknown Type	The total number of MLD packets with unknown type received on this interface.
Bad Receive If	The total number of MLD packets incorrectly received on this interface.
Rx Non Local	The total number of MLD packets received from a non-local sender.
Rx Wrong Version	The total number of MLD packets with wrong versions received on this interface.
Policy Drops	The total number of MLD packets dropped by import policies on this interface.
No Router Alert	The total number of MLD packets received on this interface which did not have the router alert flag set.
Rx Bad Encodings	The total number of MLD packets with bad encodings received on this interface.
Rx Pkt Drops	The total number of MLD receive packet drops on this interface.
Local Scope Pkts	The total number of MLD packets with local scope received on this interface.
Resvd Scope Pkts	The total number of MLD packets with reserved scope received on this interface.
MCAC Policy Drops	The total number of MLD packets dropped by MCAC policies on this interface.

## statistics

### Syntax

**statistics group-interface** [ **fwd-service** *service-id*] *ip-int-name*

**statistics group-interface all**

**statistics host** *ipv6-address*

**statistics host all**

**statistics** [*ip-int-name* | *ipv6-address*]

**statistics ipsec-interface** *ip-int-name*

### Context

[\[Tree\]](#) (clear>router>mld statistics)

### Full Context

clear router mld statistics

### Description

This command clears MLD statistics parameters.

### Parameters

#### ***service-id***

Clears the MLD statistics for the service ID.

**Values** service-id: 1 to 2148278386  
svc-name: up to 64 characters.

#### **group-interface** *interface-name*

Clears the MLD statistics on the specified group interface.

#### **group-interface all**

Clears the MLD statistics on all group interfaces.

#### **host all**

Clears the MLD statistics on all hosts.

#### **host** *ipv6-address*

Clears the MLD statistics on the specified host.

#### ***ip-int-name***

Clears statistics for the specified MLD interface name.

#### ***ipv6-address***

Clears statistics for the specified MLD IPv6 address.

#### **ipsec-interface** *ip-int-name*

Clears statistics information for the specified dynamic name for the MLD-enabled child\_SA.

## Platforms

All

## statistics

## Syntax

**statistics** [*peer ip-address*]

## Context

[\[Tree\]](#) (show>router>msdp statistics)

## Full Context

show router msdp statistics

## Description

This command displays statistics information related to a MSDP peer.

## Parameters

***ip-address***

Displays information about the specified peer IP address.

## Platforms

All

## Output

The following output is an example of MSDP statistics information, and [Table 541: Output fields: MSDP statistics](#) describes the output fields.

### Output example

```
A:ALA-48# show router msdp statistics
=====
MSDP Statistics
=====
Glo ActSrc Lim Excd: 0
-----
Peer Address      : 10.20.1.1
-----
Last State Change : 0d 11:33:16      Last message Peer : 0d 00:00:17
RPF Failures      : 0                Remote Closes     : 0
SA Msgs Sent      : 0                SA Msgs Recvd    : 709
SA req. Msgs Sent : 0                SA req. Msgs Recvd : 0
SA res. Msgs Sent : 0                SA res. Msgs Recvd : 0
KeepAlive Msgs Sent: 694             KeepAlive Msgs Recd: 694
Unknown Msgs Sent : 0                Error Msgs Recvd  : 0
-----
Peers : 1
=====
A:ALA-48#
```

Table 541: Output fields: MSDP statistics

Label	Description
Glo ActSrc Lim Excd	The number of times the active source limit was exceeded across all MSDP sessions
Peer address	The IP address of the peer
Last State Change	The date and time the peer state changed
RPF Failures	The number of reverse path forwarding (RPF) failures
SA Msgs Sent	The number of SA messages sent
SA req. Msgs Sent	The number of SA request messages sent
SA res. Msgs Sent	The number of SA response messages sent
KeepAlive Msgs Sent	The number of keepalive messages sent
Unknown Msgs Sent	The number of unknown messages received
Last message Peer	The time the last message was received from the peer
Remote Closes	The number of times the remote peer close
SA Msgs Recvd	The number of SA messages received
SA req. Msgs Recvd	The number of SA request messages received
SA res. Msgs Recvd	The number of SA response messages received
KeepAlive Msgs Recd	The number of keepalive messages received
Error Msgs Recvd	The number of unknown messages received

## statistics

### Syntax

**statistics** [*peer ip-address*]

### Context

[\[Tree\]](#) (clear>router>msdp statistics)

### Full Context

clear router msdp statistics

## Description

This command clears IP address statistics of the peer to which Multicast Source Discovery Protocol (MSDP) source-active (SA) requests for groups matching this entry's group range were sent.

## Parameters

### *ip-address*

Clears the statistics of the specified IP address.

## Platforms

All

## statistics

## Syntax

**statistics** [*ip-int-name* | *mt-int-name* | *ip-address* | *mpls-if-name*] [*family*]

## Context

[\[Tree\]](#) (show>router>pim statistics)

## Full Context

show router pim statistics

## Description

This command displays statistics for a particular PIM instance.

## Parameters

### *ip-int-name*

Displays interface information associated with the specified IP interface name.

### *mt-int-name*

Displays information about the default core group address of the Multicast Distribution Tree (MDT) for the VPRN instance. The Multicast Tunnel (MT) interface for a VPRN is created when this object is set to a valid group address.

**Syntax:** *vprn-id-mt-grp-ip-address*

### *ip-address*

Displays interface information associated with the specified IP address.

### *mpls-if-name*

Displays information about the specified MPLS interface name.

**Syntax:** *mpls-if-index*

### *family*

Displays statistics information for the specified family.

**Values** ipv4, ipv6

## Platforms

All

## Output

The following output is an example of PIM statistics information. [Table 542: PIM Statistics Output Fields](#) provides PIM statistics output field descriptions

### Output Example

```
A:ALA-1# show router pim statistics
=====
PIM Statistics ipv4
=====
Message Type      Received      Transmitted   Rx Errors
-----
Hello             18009         12834         0
Join Prune        9135          1129          10
Core RPFV JP      0             0              0
MVPN RPFV JP      0             0              0
Asserts           0             0              0
Register          0             0              0
Null Register     0             0              0
Register Stop     0             0              0
BSM               0             0              0
Candidate RP Adv  0             0              0
Auto-RP Announce  2049          0              0
Auto-RP Mapping   2066          0              0
PIM DM Grafts     0             0              0
PIM DM Graft Acks 0             0              0
Total Packets     31231         13963
-----
Intra-AS AD       0             0              0
Inter-AS AD       0             0              0
Mdt-Safi          1323          10             0
S-PMSI AD         0             0              0
Leaf AD           0             0              0
Source-Active AD  0             0              0
Shared Tree Join  0             0              0
Source Tree Join  0             0              0
Total BGP Packets 1323          10
-----
General Statistics
-----
Rx Invalid Register      : 0
Rx Neighbor Unknown     : 10
Rx Bad Checksum Discard  : 0
Rx Bad Encoding         : 0
Rx Bad Version Discard  : 0
Rx CRP No Router Alert  : 0
Rx BSM Router Alert Drops : 0
Rx BSM Wrong If Drops   : 0
Rx Invalid Join Prune   : 0
Rx Invalid Auto-RP PDU  : 0
RPF Mismatch Auto-RP Mapping PDU : 65
RPF Mismatch Auto-RP Announce PDU : 80
Rx Unknown PDU Type     : 0
Join Policy Drops       : 0
Register Policy Drops   : 0
Bootstrap Import Policy Drops : 0
Bootstrap Export Policy Drops : 0
Mcac Policy Drops       : 0
Fwd Candidate RP Adv    : 0
```

```

Fwd Candidate RP Adv Drops      : 0
S-pmsi Join TLV PDUs txd.      : 0
S-pmsi Join TLV PDUs rcd.      : 0
S-pmsi Join TLV PDUs txd. Drops : 0
S-pmsi Join TLV PDUs rcd. Drops : 0
S-pmsi Maximum-P2mp-Spmsi Hits : 0
P2mp Pmsi Create Failures      : 0
P2mp Pmsi Request Failures     : 0
PDU Drops on Non-PIM/Down Intf  : 0
Active Tx S-pmsis               : 0
Active Tx MS-pmsis              : 0
Active Rx S-pmsis               : 0
Active Rx Pseudo S-pmsis       : 0
Total Tx S-pmsis                : 0
Total Rx S-pmsis                : 0
-----
Source Group Statistics
-----
(S,G)                            : 2
(*,G)                            : 2
(*,*,RP)                         : 0
=====
    
```

Table 542: PIM Statistics Output Fields

Label	Description
PIM Statistics	The section listing the PIM statistics for a particular interface
Message Type	The type of message. Hello — The number of PIM hello messages received or transmitted Join Prune — The number of PIM join prune messages received or transmitted Asserts — The number of PIM assert messages received or transmitted Register — The number of register messages received or transmitted Null Register — The number of PIM null register messages received or transmitted Register Stop — The number of PIM register stop messages received or transmitted BSM — The number of PIM Bootstrap messages (BSM) received or transmitted Candidate RP Adv — The number of candidate RP advertisements Auto-RP Announce — The number of auto-RP announce (224.0.1.39) messages received or transmitted Auto-RP Mapping — The number of auto-RP mapping (224.0.1.40) messages received or transmitted

Label	Description
Message Type	<p>PIM DM Grafts — The number of PIM graft messages received or transmitted</p> <p>PIM DM Graft Acks — The number of PIM graft acknowledgment messages received or transmitted</p> <p>Total Packets — The total number of packets transmitted and received.</p>
Received	The number of messages received
Transmitted	The number of multicast data packets transmitted
Rx Errors	The total number of receive errors
General Interface Statistics	The section listing the general PIM interface statistics
Register TTL Drop	The number of multicast data packets which could not be encapsulated in Register messages because the time to live (TTL) was zero
Tx Register MTU Drop	The number of Bootstrap messages received on this interface but were dropped
Rx Invalid Register	The number of invalid PIM register messages received
Rx Neighbor Unknown	The number of PIM messages (other than hello messages) which were received and were rejected because the adjacency with the neighbor router was not already established
Rx Bad Checksum Discard	The number of PIM messages received, and which were discarded because of bad checksum
Rx Bad Encoding	The number of PIM messages with bad encodings received
Rx Bad Version Discard	The number of PIM messages with bad versions received
Rx CRP No Router Alert	The number of candidate-rp advertisements (C-RP-Adv) received, and which had no router alert option set
Rx Invalid Join Prune	The number of invalid PIM join prune messages received
Rx Unknown PDU Type	The number of packets received with an unsupported PIM type
Join Policy Drops	The number of times the join policy match resulted in dropping PIM join-prune message or one of the source group contained in the message
Register Policy Drops	The number of times the register policy match resulted in dropping PIM register message



Label	Description
Bootstrap Import Policy Drops	The number of Bootstrap messages received that were dropped because of Bootstrap import policy
Bootstrap Export Policy Drops	The number of Bootstrap messages that were not transmitted because of Bootstrap export policy.
Source Group Statistics	The section listing the source group statistics
(S,G)	The number of entries in which the type is (S,G)
(* ,G)	The number of entries in which the type is (* ,G)
(* ,*,RP)	The number of entries in which the type is (* , * , rp)

## statistics

### Syntax

**statistics** [*family*]

**statistics** [**interface** *ip-int-name* | **mt-int-name** | **int-ip-address**] [*family*]

**statistics** [**group** *grp-ip-address*] [**source** *ip-address*] [*family*]

### Context

**[Tree]** (clear>router>pim statistics)

### Full Context

clear router pim statistics

### Description

This command clears PIM statistics on a specified interface or IP address.



**Note:**

An interface and group or source cannot be specified at the same time.

### Parameters

***ip-int-name***

Clears PIM statistics on the specified interface.

***ip-address***

Clears PIM statistics on the specified IP address.

***mt-int-name***

Clears the default core group address of the Multicast Distribution Tree (MDT) for the VPRN instance. The Multicast Tunnel (MT) interface for a VPRN is created when this object is set to a valid group address.

**syntax:** *vprn-id-mt-grp-ip-address*

**grp-ip-address**

When only the group address is specified and no source is specified, (\*,G) statistics are cleared. When the group address is specified along with the source address, then the (S,G) statistics are reset to zero.

**ip-address**

When the source address is specified along with the group address, then the (S,G) statistics are reset to zero.

**family**

Clears statistics family information.

**Values**    ipv4, ipv6

**Platforms**

All

statistics

**Syntax**

**statistics**

**Context**

[\[Tree\]](#) (show>router>p2mp-sr-tree statistics)

**Full Context**

show router p2mp-sr-tree statistics

**Description**

This command displays P2MP SR tree statistics.

**Platforms**

All

**Output**

The following output is an example of P2MP SR tree statistics information.



**Note:**

The "Programming failures" count in tree SID statistics are not High Availability (HA) compatible and are reset upon an activity switch of the CPMs.

**Output Example**

```
A:node-2>show>router>p2mp-sr-tree# statistics
=====
P2MP-SR Statistics
```

```

=====
General
Total Number of p2mp-policies      : 2
  static                          : 2
  pce                             : 0
  sr-policy                       : 0
Total Number candidate-paths      : 2
  static                          : 2
  pce                             : 0
  sr-policy                       : 0
Total Number replication-segments  : 4
  static                          : 4
  pce                             : 0
  sr-policy                       : 0
Total Number downstream-nodes     : 2
  static                          : 2
  pce                             : 0
  sr-policy                       : 0
Total Number push                 : 2
Total Number swap                 : 1
Total Number pop                  : 1
Total Number tunnel-allocated     : 2
Total Number downstream-node interfaces
inService                        : 1
outOfService                     : 0
unsupported                       : 0
mismatched                       : 0
without BFD                      : 0
BackPressure
DataPlane backpressure active    : disabled
DataPlane backpressure count    : 0
Errors
Unknown Originator Owner        : 0
Duplicate TreeIds               : 0
Programming failures
  NhIdx                          : 0
  Labels                         : 0
  Tunnels                       : 0
  Protection Grp                 : 0
=====
P2MP Policies
=====
Policy-Name
RootAddr          TreeId          State          NumPaths
Tunnel
Candidate-Path   Origin          ASN           PLSP-ID
State            Create-Time     Preference    Desc
-----
p2mp_policy_8193_10.20.1.3
10.20.1.3        8193          inService     1
73740
cp_1            static        0             --
inService      1d 02:25:09  0             1
p2mp_policy_8194_10.20.1.3
10.20.1.3        8194          inService     1
73745
cp_1            static        0             --
inService      1d 02:25:10  0             1
-----
Total P2MP Policies : 2
=====
    
```

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (show>eth-cfm statistics)

### Full Context

show eth-cfm statistics

### Description

This command displays the ETH-CFM statistics counters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of ETH-CFM statistics information. [Table 543: ETH-CFM Statistics Field Descriptions](#) describes the ETH-CFM statistics fields.

### Output Example

```
show eth-cfm statistics
=====
ETH-CFM System Statistics
=====
Rx Count          : 10513196      Tx Count          : 2294783
Dropped Congestion : 0              Discarded Error   : 764766
AIS Currently Act  : 0              AIS Currently Fail : 0
=====

=====
ETH-CFM System Op-code Statistics
=====
Op-code      Rx Count  Tx Count
-----
ccm           4588504   2294779
lbr              0         0
lbrm            2         0
ltr              0         1
ltm              1         0
ais              0         0
lck              0         0
tst              0         0
laps            0         0
raps            0         0
mcc              0         0
lmr              0         0
lmm              0         0
ldm              0         0
dmr              0         0
dmm            4012644   0
```

```

exr          0          0
exm          0          0
csf          0          0
vsr          0          0
vsm          0          0
lsl          0          0
slr          0          0
slm          1912045    0
other        0          0
-----
Total        10513196    2294780
=====
    
```

Table 543: ETH-CFM Statistics Field Descriptions

Label	Description
Rx Count	The ETH-CFM CPU receive rate, in PPS
Tx Count	The ETH-CFM CPU transmit rate, in PPS
Dropped Congestion	The number of valid or supported ETH-CFM packets not processed by the CPU as a result of resource contention
Discard Error	The number of ETH-CFM packets that did not pass validation

## statistics

### Syntax

**statistics session *session-name* dm meas-interval { 5-mins | 15-mins | 1-hour | 1-day | raw } interval-number *interval-number* [ all | bins | summary ]**

**statistics session *session-name* dmm meas-interval { 5-mins | 15-mins | 1-hour | 1-day | raw } interval-number *interval-number* [ all | bins | summary ]**

**statistics session *session-name* lmm meas-interval { 5-mins | 15-mins | 1-hour | 1-day | raw } interval-number *interval-number***

**statistics session *session-name* slm meas-interval { 5-mins | 15-mins | 1-hour | 1-day | raw } interval-number *interval-number***

**statistics session *session-name* twamp-light meas-interval { 5-mins | 15-mins | 1-hour | 1-day | raw } interval-number *interval-number* delay [ all | bins | summary ]**

### Context

[\[Tree\]](#) (show>oam-pm statistics)

### Full Context

show oam-pm statistics

### Description

This command shows the delay statistics for the specified test using the parameters specified.

## Parameters

### ***session-name***

Identifies the session to be queried.

### **dm**

Specifies that the delay test is from the MPLS test family and is using dm style measurements for the delay.

### **dmm**

Specifies that the delay test is from the Ethernet test family and is using dmm style measurements for the delay.

### **lmm**

Specifies the loss test is from the Ethernet test family and is using lmm style measurements for the loss.

### **slm**

Specifies that the loss test is from the Ethernet test family and is using slm style measurements for the loss.

### **twamp-light**

Specifies that the delay test is from the IP test family and is using twamp-light style measurements for the delay.

### **meas-interval**

Identifies the measurement interval to query for the statistics. When **raw** is specified, the interval number is not to be included because there is only one raw cumulative bin.

**Values** 5-mins, 15-mins, 1-hour, 1-day, raw

### ***interval-number***

Specifies the numerical reference that indicates the position from the latest sample window. The number 1 is the most recent with all higher numbers being that position in the past from current.

**Values** 1 to 97

### **[all | bins | summary]**

Specifies a keyword to filter the output.

### **delay**

Indicates that the statistics being queried are for delay. TWAMP-Light PDUs carry both delay and loss informational elements and it is not clear from only the test type name which statistic the operator requires.

### **loss**

Indicates the statistics being queried are for loss. TWAMP-Light PDUs carry both delay and loss informational elements and it is not clear from only the test type name which statistic the operator requires. This keyword is specific to twamp-light.

## Platforms

All

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (clear>eth-cfm statistics)

### Full Context

clear eth-cfm statistics

### Description

This command clears the eth-cfm statistics counters maintained in clearEthCfmStatistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## statistics

### Syntax

**statistics**

**statistics interface** {*ip-int-name* | *ip-address*}

**statistics policy** *name*

### Context

**[Tree]** (show>router>authentication statistics)

### Full Context

show router authentication statistics

### Description

This command displays interface or policy authentication statistics.

### Parameters

***ip-int-name* | *ip-address***

Specifies an existing interface name or IP address.

**Values** ip-int-name: 32 characters maximum  
ip-address: a.b.c.d

***name***

Specifies an existing policy name.

## Platforms

All

## Output

**Authentication Statistics Output** — The following output is an example of authentication statistics, and [Table 544: Authentication Statistics Fields](#) describes the fields.

### Output Example

```
A:ALU-3>show>router>auth# statistics
=====
Authentication Global Statistics
=====
Client Packets Authenticate Fail      : 0
Client Packets Authenticate Ok       : 12
=====
```

Table 544: Authentication Statistics Fields

Label	Description
Client Packets Authenticate Fail	The number of packets that failed authentication
Client Packets Authenticate Ok	The number of packets that were authenticated

## statistics

### Syntax

**statistics** [*interface ip-int-name* | *ip-address*]

### Context

[\[Tree\]](#) (clear>router>authentication statistics)

### Full Context

clear router authentication statistics

### Description

This command clears authentication statistics.

### Parameters

#### *ip-int-name*

Clears the authentication statistics for the specified interface name. If the string contains special characters (#, \$, spaces, and so on), the entire string must be enclosed within double quotes.



### ***ip-address***

Clears the authentication statistics for the specified IP address.

#### **Platforms**

All

### **statistics**

#### **Syntax**

**statistics** [*policy policy-id*]

#### **Context**

[\[Tree\]](#) (clear>vrrp statistics)

#### **Full Context**

clear vrrp statistics

#### **Description**

Commands in this context clear and reset VRRP entities.

#### **Parameters**

##### ***policy-id***

Clears statistics for the specified policy.

**Values** 1 to 9999

#### **Platforms**

All

### **statistics**

#### **Syntax**

**statistics**

#### **Context**

[\[Tree\]](#) (show>system>ptp statistics)

#### **Full Context**

show system ptp statistics

#### **Description**

This command displays the message and error statistics for the node.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of PTP statistics information, and [Table 545: System PTP statistics field descriptions](#) describes the output fields.

### Output Example

```
# show system ptp statistics
=====
IEEE 1588/PTP Packet Statistics
=====
-----
Input      Output
-----
PTP Packets                0          0
  Announce                  0          0
  Sync                      0          0
  Follow Up                 0          0
  Delay Request             0          0
  Delay Response            0          0
  Signaling                 0          0
  Request Unicast Transmission TLVs
    Announce                0          0
    Sync                    0          0
    Delay Response          0          0
  Grant Unicast Transmission (Accepted) TLVs
    Announce                0          0
    Sync                    0          0
    Delay Response          0          0
  Grant Unicast Transmission (Denied) TLVs
    Announce                0          0
    Sync                    0          0
    Delay Response          0          0
  Cancel Unicast Transmission TLVs
    Announce                0          0
    Sync                    0          0
    Delay Response          0          0
  Ack Cancel Unicast Transmission TLVs
    Announce                0          0
    Sync                    0          0
    Delay Response          0          0
  Other TLVs                0          0
  Other                     0          0
  Event Packets timestamped at port 0          0
  Event Packets timestamped at cpm  0          0
Discards                    0          0
  Bad PTP domain            0          0
  Alternate Master          0          0
  Out Of Sequence           0          0
  Peer Disabled             0          0
  Packet Timing Signal Fail - Unusable 0          0
  Other                     0          0
=====
IEEE 1588/PTP Frequency Recovery State Statistics
=====
-----
State                      Seconds
-----
Initial                     0
Acquiring                   0
Phase-Tracking              0
```

```

Locked 0
Hold-over 0
=====
IEEE 1588/PTP Event Statistics
=====
Event Sync Flow Delay Flow
-----
Packet Loss 0 0
Excessive Packet Loss 0 0
Excessive Phase Shift Detected 0 0
Too Much Packet Delay Variation - Freq 0 0
Too Much Packet Delay Variation - Time
=====
IEEE 1588/PTP Clock Time Recovery State Statistics
=====
State Seconds
-----
Initial 1280
Acquiring 63
Locked 0
Hold-over 0
=====
IEEE 1588/PTP Message Rates Per Second
=====
Packet Type UDP/IP Ethernet
             Input Output Input Output
-----
Announce 0 0 0 0
Sync 0 0 0 0
Follow Up 0 0 0 0
Delay Request 0 0 0 0
Delay Response 0 0 0 0
Other 0 0 0 0
-----
Total 0 0 0 0
=====
    
```

Table 545: System PTP statistics field descriptions

Counter		Counts
PTP Packets (packet type)	Input	The number of input packets for the specified packet type
	Output	The number of output packets for the specified packet type
Discards (reason type)	Input	The number of discarded input packets for the specified reason
	Output	The number of discarded output packets for the specified reason
State (state type)	Seconds	The number of seconds for the specified state type
Event (event type)	Sync Flow	The number of sync flows for the specified event type

Counter		Counts
	Delay Flow	The number of delay flows for the specified event type
Packet Type (packet type)	UDP/IP Input/Output	The number of UDP/IP input or output packets for the specified packet type
	Ethernet Input/Output	The number of Ethernet input or output packets for the specified packet type

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (clear>application-assurance>group statistics)

### Full Context

clear application-assurance group statistics

### Description

This command clears application assurance statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (clear>redundancy>multi-chassis>mcr statistics)

### Full Context

clear redundancy multi-chassis mc-ring statistics

### Description

This command clears multi-chassis ring.

## Platforms

All

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (clear>system>ptp statistics)

### Full Context

clear system ptp statistics

### Description

This command clears all PTP statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (clear>system statistics)

### Full Context

clear system statistics

### Description

This command clears system specific statistics.

## Platforms

All

## statistics

### Syntax

**statistics**

## Context

[\[Tree\]](#) (show>certificate statistics)

## Full Context

show certificate statistics

## Description

This command shows certificate related statistics.

## Platforms

All

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (show>router>isis statistics)

## Full Context

show router isis statistics

## Description

This command displays information regarding IS-IS traffic statistics.

## Platforms

All

## Output

The following output is an example of IS-IS statistics output.

### Output Example

```
*A:Dut-C# show router isis statistics
=====
Rtr Base ISIS Instance 0 Statistics
=====
ISIS Instance      : 0
Purge Initiated   : 0
Sid SRGB err      : 0
LSP Regens.       : 17
Sid dupl err      : 0

CSPF Statistics
Requests          : 0
Paths Found       : 0
Request Drops     : 0
Paths Not Found   : 0

SPF Statistics
```

```

SPF Runs      : 7
  Last runTimeStamp: 01/26/2015 11:22:50
Partial SPF Runs : 3
  Last runTimeStamp: 01/26/2015 11:22:51

LFA Statistics
LFA Runs      : 7
  Last runTimeStamp: 01/26/2015 11:22:51
Partial LFA Runs : 3
  Last runTimeStamp: 01/26/2015 11:22:41

RLFA Statistics
RLFA Runs     : 10
  Last runTimeStamp: 01/26/2015 11:22:51
    
```

```

-----
PDU Type   Received   Processed   Dropped     Sent         Retransmitted
-----
LSP        164          164         0            151          0
IIH        146          146         0            147          0
CSNP       288          288         0            291          0
PSNP       71           71          0            74           0
Unknown    0            0           0            0            0
=====
    
```

\*A:Dut-C#

**Table 546: IS-IS Statistics Output Fields** describes IS-IS statistics output fields.

*Table 546: IS-IS Statistics Output Fields*

Label	Description
Purge Initiated	The number of times purges have been initiated.
SPF Runs	The number of times shortest path first calculations have been made.
LSP Regens	The count of LSP regenerations.
Requests	The number of CSPF requests made to the protocol.
Paths Found	The number of responses to CSPF requests for which paths satisfying the constraints were found.
PDU Type	The PDU type.
Received	The count of link state PDUs received by this instance of the protocol.
Processed	The count of link state PDUs processed by this instance of the protocol.
Dropped	The count of link state PDUs dropped by this instance of the protocol.
Sent	The count of link state PDUs sent out by this instance of the protocol.

Label	Description
Retransmitted	The count of link state PDUs that had to be retransmitted by this instance of the protocol.

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (clear>service>id>spb statistics)

**[Tree]** (clear>router>isis statistics)

### Full Context

clear service id spb statistics

clear router isis statistics

### Description

This command clears and resets IS-IS statistics.

### Platforms

All

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (show>router>ospf statistics)

**[Tree]** (show>router>ospf3 statistics)

### Full Context

show router ospf statistics

show router ospf3 statistics

### Description

This command displays the global OSPF statistics.



## Platforms

All

## Output

The following output is an example of global OSPF statistic information and [Table 547: OSPF Statistics Output Fields](#) describes the output fields.

### Output Example

```

show router ospf statistics
=====
Rtr Base OSPFv2 Instance 0 Statistics
=====
Rx Packets           : 441          Tx Packets           : 463
Rx Hellos            : 361          Tx Hellos            : 371
Rx DBDs              : 9            Tx DBDs              : 7
Rx LSRs              : 3            Tx LSRs              : 3
Rx LSUs              : 54          Tx LSUs              : 72
Rx LS Acks           : 14          Tx LS Acks           : 10
New LSAs Recvd      : 57          New LSAs Orig        : 8
Ext LSAs Count       : 0            No of Areas          : 1
No of Interfaces     : 4            No of Neighbors      : 3
Discards             : 3            Tx Failures          : 3
                                Retransmits          : 2
Bad Networks         : 0            Bad Virt Links       : 0
Bad Areas            : 0            Bad Dest Adrs        : 0
Bad Auth Types       : 0            Auth Failures        : 0
Bad Neighbors        : 0            Bad Pkt Types        : 0
Bad Lengths          : 0            Bad Hello Int.       : 2
Bad Dead Int.        : 1            Bad Options          : 0
Bad Versions         : 0            Bad Checksums        : 0
SID SRGB errors      : 0            SID dupl errors      : 0
Failed SPF Attempts  : 0            Bad MTUs             : 0
CSPF Requests        : 0            CSPF Request Drops   : 0
CSPF Path Found      : 0            CSPF Path Not Found  : 0
Total SPF Runs       : 6            Total LFA SPF Runs   : 0
Total RLFA SPF Runs  : 0            Total TI-LFA SPF Runs: 0
=====
show router ospf3 statistics
=====
Rtr Base OSPFv3 Instance 0 Statistics
=====
Rx Packets           : 525          Tx Packets           : 564
Rx Hellos            : 387          Tx Hellos            : 387
Rx DBDs              : 8            Tx DBDs              : 7
Rx LSRs              : 3            Tx LSRs              : 3
Rx LSUs              : 113         Tx LSUs              : 156
Rx LS Acks           : 14          Tx LS Acks           : 11
New LSAs Recvd      : 77          New LSAs Orig        : 12
Ext LSAs Count       : 0            No of Areas          : 1
No of Interfaces     : 4            No of Neighbors      : 3
Discards             : 0            Tx Failures          : 0
                                Retransmits          : 0
Bad Networks         : 0            Bad Virt Links       : 0
Bad Areas            : 0            Bad Dest Adrs        : 0
Bad Auth Types       : 0            Auth Failures        : 0
Bad Neighbors        : 0            Bad Pkt Types        : 0
Bad Lengths          : 0            Bad Hello Int.       : 0
Bad Dead Int.        : 0            Bad Options          : 0
Bad Versions         : 0            Bad Checksums        : 0
SID SRGB errors      : 0            SID dupl errors      : 0
Failed SPF Attempts  : 0            Bad MTUs             : 0
    
```

```

CSPF Requests      : 0          CSPF Request Drops   : 0
CSPF Path Found    : 0          CSPF Path Not Found  : 0
Total SPF Runs     : 7          Total LFA SPF Runs   : 0
Total RLFA SPF Runs : 0          Total TI-LFA SPF Runs: 0
=====
  
```

Table 547: OSPF Statistics Output Fields

Label	Description
Rx Packets	The total number of OSPF packets received on all OSPF enabled interfaces.
Tx Packets	The total number of OSPF packets transmitted on all OSPF enabled interfaces.
Rx Hellos	The total number of OSPF Hello packets received on all OSPF enabled interfaces.
Tx Hellos	The total number of OSPF Hello packets transmitted on all OSPF enabled interfaces.
Rx DBDs	The total number of OSPF database description packets received on all OSPF enabled interfaces.
Tx DBDs	The total number of OSPF database description packets transmitted on all OSPF enabled interfaces
Rx LSRs	The total number of OSPF Link State Requests (LSRs) received on all OSPF enabled interfaces.
Tx LSRs	The total number of OSPF Link State Requests (LSRs) transmitted on all OSPF enabled interfaces.
Rx LSUs	The total number of OSPF Link State Update (LSUs) received on all OSPF enabled interfaces.
Tx LSUs	The total number of OSPF Link State Update (LSUs) transmitted on all OSPF enabled interfaces.
Rx LS Acks	The total number of OSPF Link State Acknowledgments (LSAs) received on all OSPF enabled interfaces.
New LSAs Recvd	The total number of new OSPF Link State Advertisements received on all OSPF enabled interfaces.
New LSAs Orig	The total number of new OSPF Link State Advertisements originated on all OSPF enabled interfaces.
Ext LSAs Count	The total number of OSPF External Link State Advertisements.
No of Areas	The number of areas configured for this OSPF instance.
Total SPF Runs	The total number of incremental SPF runs triggered by new or updated LSAs.

Label	Description
Ext SPF Runs	The total number of incremental SPF runs triggered by new or updated type-5 external LSAs.
Retransmits	The total number of OSPF Retransmits transmitted on all OSPF enabled interfaces.
Discards	The total number of OSPF packets discarded on all OSPF enabled interfaces.
Bad Networks	The total number of OSPF packets received on all OSPF enabled interfaces with invalid network or mask.
Bad Virt Links	The total number of OSPF packets received on all OSPF enabled interfaces that are destined to a virtual link that does not exist.
Bad Areas	The total number of OSPF packets received on all OSPF enabled interfaces with an area mismatch.
Bad Dest Addr	The total number of OSPF packets received on all OSPF enabled interfaces with the incorrect IP destination address.
Bad Auth Types	The total number of OSPF packets received on all OSPF enabled interfaces with an invalid authorization type.
Auth Failures	The total number of OSPF packets received on all OSPF enabled interfaces with an invalid authorization key.
Bad Neighbors	The total number of OSPF packets received on all OSPF enabled interfaces where the neighbor information does not match the information this router has for the neighbor.
Bad Pkt Types	The total number of OSPF packets received on all OSPF enabled interfaces with an invalid OSPF packet type.
Bad Lengths	The total number of OSPF packets received on all OSPF enabled interfaces with a total length not equal to the length given in the packet itself.
Bad Hello Int.	The total number of OSPF packets received on all OSPF enabled interfaces where the hello interval given in packet was not equal to that configured for the respective interface.
Bad Dead Int.	The total number of OSPF packets received on all OSPF enabled interfaces where the dead interval given in the packet was not equal to that configured for the respective interface.
Bad Options	The total number of OSPF packets received on all OSPF enabled interfaces with an option that does not match those configured for the respective interface or area.

Label	Description
Bad Versions	The total number of OSPF packets received on all OSPF enabled interfaces with bad OSPF version numbers.
Tx Failures	Transmitted OSPF packets that are dropped due to resource shortage.

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (clear>router>ospf statistics)

[\[Tree\]](#) (clear>router>ospf3 statistics)

### Full Context

clear router ospf statistics

clear router ospf3 statistics

### Description

This command clears all neighbor, router, interface, SPF and global statistics of this OSPF instance.

### Platforms

All

## statistics

### Syntax

**statistics** [*ipv6-address* | *ip-int-name*]

### Context

[\[Tree\]](#) (show>router>ripng statistics)

### Full Context

show router ripng statistics

### Description

This command displays the interface level statistics for the RIPng protocol.

If no IPv6 address or interface name is specified, then all configured RIPng interfaces are displayed.

If an IPv6 address or interface name is specified, then only data regarding the specified RIPng interface is displayed.

### Parameters

***ipv6-address | ip-int-name***

Displays statistics for the specified IPv6 interface.

### Platforms

All

### Output

The following output are examples of RIPng statistics information.

#### Output Example

```
*A:Dut-C>config>router>if# show router ripng statistics
=====
RIP-NG Statistics
=====
Learned Routes      : 40                Timed Out Routes   : 0
Current Memory     : 1,199,016          Maximum Memory     : 2,097,152
-----
Interface "one"
-----
Primary IP         : 3ffe::10:10:3:3/1* Update Timer      : 1
Timeout Timer     : 5                Flush Timer       : 5

Counter              Total          Last 5 Min      Last 1 Min
-----
Updates Sent         221           180             5
Triggered Updates    0             0               0
Bad Packets Received 0             0               0
Updates Received     225           185             3
Updates Ignored      0             0               0
Bad Routes           0             0               0
Requests Received    0             0               0
Requests Ignored     0             0               0
-----
Interface "two"
-----
Primary IP         : 3ffe::10:10:103:3* Update Timer      : 1
Timeout Timer     : 5                Flush Timer       : 5

Counter              Total          Last 5 Min      Last 1 Min
-----
Updates Sent         220           183             5
Triggered Updates    0             0               0
Bad Packets Received 0             0               0
Updates Received     229           183             5
Updates Ignored      0             0               0
Bad Routes           0             0               0
Requests Received    0             0               0
Requests Ignored     0             0               0
-----
Interface "three"
-----
Primary IP         : 3ffe::10:10:12:3/* Update Timer      : 1
Timeout Timer     : 5                Flush Timer       : 5
```

```

Counter                Total                Last 5 Min          Last 1 Min
-----
Updates Sent           224                184                6
Triggered Updates     0                  0                  0
Bad Packets Received  0                  0                  0
Updates Received      221                182                4
Updates Ignored       0                  0                  0
Bad Routes            0                  0                  0
Requests Received     0                  0                  0
Requests Ignored     0                  0                  0
-----
Interface "four"
-----
Primary IP           : 3ffe::10:10:112:3* Update Timer       : 1
Timeout Timer      : 5                  Flush Timer        : 5

Counter                Total                Last 5 Min          Last 1 Min
-----
Updates Sent           220                182                8
Triggered Updates     0                  0                  0
Bad Packets Received  0                  0                  0
Updates Received      227                185                4
Updates Ignored       0                  0                  0
Bad Routes            0                  0                  0
Requests Received     0                  0                  0
Requests Ignored     0                  0                  0
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-C>config>router>if# show router ripng statistics "one"
=====
RIP-NG Statistics
=====
Learned Routes       : 40                Timed Out Routes   : 0
Current Memory       : 1,199,016        Maximum Memory     : 2,097,152
-----
Interface "one"
-----
Primary IP           : 3ffe::10:10:3:3/1* Update Timer       : 1
Timeout Timer      : 5                  Flush Timer        : 5

Counter                Total                Last 5 Min          Last 1 Min
-----
Updates Sent           224                183                8
Triggered Updates     0                  0                  0
Bad Packets Received  0                  0                  0
Updates Received      230                190                8
Updates Ignored       0                  0                  0
Bad Routes            0                  0                  0
Requests Received     0                  0                  0
Requests Ignored     0                  0                  0
=====
* indicates that the corresponding row element may have been truncated.
    
```

## statistics

### Syntax

**statistics**

**statistics manager all**

**statistics manager** *manager-name*

### Context

[\[Tree\]](#) (clear>system>management-interface>remote-management statistics)

### Full Context

clear system management-interface remote-management statistics

### Description

This command clears the statistics for remote management managers. If the command is run without specifying the **manager**, the statistics for all remote managers are cleared.

### Parameters

#### **manager**

Keyword to specify that clears statistics only for a specific manager.

#### **manager-name**

Specifies the configured name of the manager, up to 64 characters, for which the statistics are cleared.

#### **all**

Clears statistics for all managers.

### Platforms

All

## statistics

### Syntax

**statistics**

### Context

[\[Tree\]](#) (show>subscr-mgmt>pfcps statistics)

### Full Context

show subscriber-mgmt pfcps statistics

### Description

This command displays the packet counters for each PFCP message and upstream IBCP message.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of PFCP statistics information.

## Output Example

```
A:BNG-UPF# show subscriber-mgmt pfcpc statistics
=====
PFCPC System Statistics
=====

PFCPC Session Related Messages

Session Establish Req      : 3          Session Establish Resp    : 3
Session Establish Resp fail: 0
Session Modify Req        : 2          Session Modify Resp       : 2
Session Modify Resp fail  : 0
Session Deletion Req      : 1          Session Deletion Resp     : 1
Session Deletion Resp fail: 0
Session Report Req        : 1          Session Report Resp       : 1
Session Report Resp fail  : 0
Session Report DDR Req    : 0          Session Report DDR Rsp    : 0
Session Report DDR Rsp fail: 0
Session Report UR Req     : 0          Session Report UR Rsp     : 0
Session Report UR Rsp fail: 0
Session Report EIR Req    : 0          Session Report EIR Rsp    : 0
Session Report EIR Rsp fail: 0
Session Report UPIR Req   : 1          Session Report UPIR Rsp   : 1
Session Report UPIR Rs fail: 0

PFCPC Session Audit Related Messages

Session Modify Req        : 0          Session Modify Resp       : 0
Session Modify Resp fail  : 0
Session Report Req        : 0          Session Report Rsp        : 0
Session Report Rsp fail   : 0

PFCPC Node Related Messages

Node Report Req          : 0          Node Report Resp         : 0
Node Report Resp fail    : 0
Assoc Setup Req Rx       : 0          Assoc Setup Resp Rx      : 1
Assoc Setup Resp fail Rx : 0
Assoc Setup Req Tx       : 1          Assoc Setup Resp Tx      : 0
Assoc Setup Resp fail Tx : 0
Assoc Upd Req Rx         : 0          Assoc Upd Resp Rx        : 0
Assoc Upd Resp fail Rx   : 0
Assoc Upd Req Tx         : 0          Assoc Upd Resp Tx        : 0
Assoc Upd Resp fail Tx   : 0
Assoc Upd Req with ARR   : 0          Assoc Upd Req with GRP   : 0
Assoc Upd Req ARR & GRP  : 0
Assoc Release Req        : 0          Assoc Release Resp       : 0
Assoc Release Resp fail  : 0
Heartbeat Req Rx         : 417       Heartbeat Resp Rx        : 1
Heartbeat Req Tx         : 1          Heartbeat Resp Tx        : 417
Heartbeat Aud Trig Req Tx : 0         Heartbeat Aud Trig Rsp Rx : 0
Heartbeat Aud Start Req Rx : 0         Heartbeat Aud Start Rsp Tx : 0
Heartbeat Aud End Req Rx  : 0         Heartbeat Aud End Rsp Tx  : 0

IBCP upstream packet statistics

IpoE Rx Pkts             : 0
Pppoe Ctrl Rx Pkts      : 10
Pppoe Data Rx Pkts      : 16
Tx Pkts to Smf           : 26

IBCP upstream packet discard statistics
```



```
Missing pkt detection rule : 0
Default tnl trigger missing: 0
Default tunnel missing    : 0
Parsing error              : 0
Tx error                   : 0

IBCP default tunnel
overwrite                  : 0

Number of PFCP Sessions   : 2
-----
=====
```

## statistics

### Syntax

**statistics lsp-path** [**lsp-index** *lsp-index*] [**path-lspid** *path-lspid*] [**prefix** *ip-prefix|prefix-length*] [**src** *ip-address | ipv6 address*]

**statistics lsp-path all**

**statistics sr-policy** [**lsp-index** *lsp-index*] [**path-lspid** *path-lspid*] [**prefix** *ip-prefix|prefix-length*] [**src** *ip-address | ipv6 address*]

**statistics sr-policy all**

### Context

**[Tree]** (clear>router>bfd>seamless-bfd statistics)

### Full Context

clear router bfd seamless-bfd statistics

### Description

This command clears BFD statistics.

### Parameters

#### **lsp-path**

Keyword to clear the S-BFD statistics for LSP path.

#### **sr-policy**

Keyword to clear the S-BFD statistics for SR policy.

#### **all**

Keyword to clear all S-BFD statistics.

#### **lsp-index** *lsp-index*

Specifies the LSP index.

**Values** 0 to 4294967295

#### **path-lspid** *path-lspid*

Specifies the path LSP ID.

**Values** 0 to 4294967295

### prefix

Keyword to clear information by far-end prefix.

### *ip-prefix/prefix-length*

Specifies an IP prefix for which to clear S-BFD statistics, and the length of the prefix.

**Values** *ipv4-prefix* — a.b.c.d (host bits must be zero)  
*ipv4-prefix-length* — 0 to 32  
*ipv6-prefix* — x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)  
*ipv6-prefix-length* — 0 to 128

### *ip-address* | *ipv6-address*

Specifies the IP address for which to clear S-BFD statistics.

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x[-interface]  
x:x:x:x:x:d.d.d.d[-interface]  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)  
interface — mandatory for link local address, up to 32 characters

## Platforms

All

## statistics

## Syntax

**statistics** [*interval seconds*] [*repeat repeat*] [*absolute* | *rate*]

## Context

[\[Tree\]](#) (monitor>router>isis statistics)

## Full Context

monitor router isis statistics

## Description

This command displays statistical IS-IS traffic information at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified router statistics. The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## Output

The following output is an example of ISIS statistics.

### Output Example

```
A:ALA-12>monitor>router>isis# statistics interval 3 repeat 2 absolute
=====
ISIS Statistics
=====
At time t = 0 sec (Base Statistics)
-----
ISIS Instance      : 1                SPF Runs          : 2
Purge Initiated   : 0                LSP Regens.      : 11

CSPF Statistics

Requests          : 0                Request Drops    : 0
Paths Found       : 0                Paths Not Found  : 0
-----
PDU Type  Received  Processed  Dropped   Sent      Retransmitted
-----
LSP       0         0         0         0         0
```

```

IIH      0      0      0      74      0
CSNP     0      0      0      0      0
PSNP     0      0      0      0      0
Unknown  0      0      0      0      0
-----
At time t = 3 sec (Mode: Absolute)
-----
ISIS Instance      : 1          SPF Runs          : 2
Purge Initiated   : 0          LSP Regens.      : 11

CSPF Statistics

Requests          : 0          Request Drops    : 0
Paths Found       : 0          Paths Not Found  : 0
-----
PDU Type  Received  Processed  Dropped   Sent      Retransmitted
-----
LSP       0         0         0         0         0
IIH       0         0         0         74        0
CSNP      0         0         0         0         0
PSNP      0         0         0         0         0
Unknown   0         0         0         0         0
-----
At time t = 6 sec (Mode: Absolute)
-----
ISIS Instance      : 1          SPF Runs          : 2
Purge Initiated   : 0          LSP Regens.      : 11

CSPF Statistics

Requests          : 0          Request Drops    : 0
Paths Found       : 0          Paths Not Found  : 0
-----
PDU Type  Received  Processed  Dropped   Sent      Retransmitted
-----
LSP       0         0         0         0         0
IIH       0         0         0         74        0
CSNP      0         0         0         0         0
PSNP      0         0         0         0         0
Unknown   0         0         0         0         0
=====
A:ALA-12>monitor>router>isis# statistics interval 3 repeat 2 rate
=====
ISIS Statistics
=====
At time t = 0 sec (Base Statistics)
-----
ISIS Instance      : 1          SPF Runs          : 2
Purge Initiated   : 0          LSP Regens.      : 11

CSPF Statistics

Requests          : 0          Request Drops    : 0
Paths Found       : 0          Paths Not Found  : 0
-----
PDU Type  Received  Processed  Dropped   Sent      Retransmitted
-----
LSP       0         0         0         0         0
IIH       0         0         0         76        0
CSNP      0         0         0         0         0
PSNP      0         0         0         0         0
Unknown   0         0         0         0         0

```

```

-----
At time t = 3 sec (Mode: Rate)
-----
ISIS Instance      : 1                SPF Runs       : 0
Purge Initiated   : 0                LSP Regens.    : 0

CSPF Statistics

Requests          : 0                Request Drops  : 0
Paths Found       : 0                Paths Not Found: 0
-----
PDU Type  Received  Processed  Dropped   Sent      Retransmitted
-----
LSP        0         0         0         0         0
IIH        0         0         0         0         0
CSNP       0         0         0         0         0
PSNP       0         0         0         0         0
Unknown    0         0         0         0         0
-----
At time t = 6 sec (Mode: Rate)
-----
ISIS Instance      : 1                SPF Runs       : 0
Purge Initiated   : 0                LSP Regens.    : 0

CSPF Statistics

Requests          : 0                Request Drops  : 0
Paths Found       : 0                Paths Not Found: 0
-----
PDU Type  Received  Processed  Dropped   Sent      Retransmitted
-----
LSP        0         0         0         0         0
IIH        0         0         0         1         0
CSNP       0         0         0         0         0
PSNP       0         0         0         0         0
Unknown    0         0         0         0         0
=====
A:ALA-12>monitor>router>isis#
    
```

## statistics

### Syntax

**statistics** [*interval seconds*] [*repeat repeat*] [*absolute | rate*]

### Context

[\[Tree\]](#) (monitor>router>ldp statistics)

### Full Context

monitor router ldp statistics

### Description

Monitor statistics for LDP instance at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the LDP statistics. The subsequent statistical information listed for each interval is displayed as a delta to the previous display. When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *seconds*

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

All

## Output

The following output is an example of LDP statistics information.

### Output Example

```
A:ALA-12>monitor>router>ldp# statistics interval 3 repeat 3 absolute
=====
Monitor statistics for LDP instance
=====
At time t = 0 sec (Base Statistics)
-----
Addr FECs Sent   : 0                Addr FECs Recv   : 0
Serv FECs Sent   : 1                Serv FECs Recv   : 2
-----
At time t = 3 sec (Mode: Absolute)
-----
Addr FECs Sent   : 0                Addr FECs Recv   : 0
Serv FECs Sent   : 1                Serv FECs Recv   : 2
-----
At time t = 6 sec (Mode: Absolute)
-----
Addr FECs Sent   : 0                Addr FECs Recv   : 0
```

```

Serv FECs Sent      : 1                Serv FECs Recv      : 2
-----
At time t = 9 sec (Mode: Absolute)
-----
Addr FECs Sent      : 0                Addr FECs Recv      : 0
Serv FECs Sent      : 1                Serv FECs Recv      : 2
=====
A:ALA-12>monitor>router>ldp#

A:ALA-12>monitor>router>ldp# statistics interval 3 repeat 3 rate
=====
Monitor statistics for LDP instance
=====
At time t = 0 sec (Base Statistics)
-----
Addr FECs Sent      : 0                Addr FECs Recv      : 0
Serv FECs Sent      : 1                Serv FECs Recv      : 2
-----
At time t = 3 sec (Mode: Rate)
-----
Addr FECs Sent      : 0                Addr FECs Recv      : 0
Serv FECs Sent      : 0                Serv FECs Recv      : 0
-----
At time t = 6 sec (Mode: Rate)
-----
Addr FECs Sent      : 0                Addr FECs Recv      : 0
Serv FECs Sent      : 0                Serv FECs Recv      : 0
-----
At time t = 9 sec (Mode: Rate)
-----
Addr FECs Sent      : 0                Addr FECs Recv      : 0
Serv FECs Sent      : 0                Serv FECs Recv      : 0
=====
A:ALA-12>monitor>router>ldp#
    
```

## statistics

### Syntax

**statistics** [*interval seconds*] [*repeat repeat*] [*absolute*| *rate*]

### Context

[\[Tree\]](#) (monitor>eth-cfm statistics)

### Full Context

monitor eth-cfm statistics

### Description

This command monitors control plane traffic statistics.

### Parameters

#### **seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10

***repeat***

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

***absolute***

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

***rate***

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**statistics**

**Syntax**

**statistics all**

**statistics neighbor** *ip-address* [**port** *port-number*]

**Context**

[\[Tree\]](#) (clear>service>id>gsmp statistics)

**Full Context**

clear service id gsmp statistics

**Description**

This command clears General Switch Management Protocol (GSMP) statistics.

**Parameters**

**all**

Clears all GSMP related statistics.

***ip-address***

Specifies the IP address.

**Values** a.b.c.d. (unicast address only)

***port-number***

Specifies port number.



**Values** 0 to 65535

## Platforms

All

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (clear>system>ptp>port statistics)

## Full Context

clear system ptp port statistics

## Description

This command clears PTP port statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (clear>service>id>subhosts statistics)

## Full Context

clear service id subscriber-hosts statistics

## Description

This command clears subscriber host HTTP redirect statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (show>li>x-interfaces statistics)

### Full Context

show li x-interfaces statistics

### Description

Commands in this context display statistics of the X1, X2, and X3 interfaces.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## statistics

### Syntax

**statistics**

### Context

**[Tree]** (clear>router>bier statistics)

### Full Context

clear router bier statistics

### Description

This command clears BIER statistics.

### Platforms

All

## statistics

### Syntax

**statistics** [*policy* *policy-name*]

## Context

[\[Tree\]](#) (clear>router>mcac statistics)

## Full Context

clear router mcac statistics

## Description

This command clears and resets MCAC statistics.

## Parameters

*policy-name*

Specifies the policy name, up to 32 characters.

## Platforms

All

## statistics

## Syntax

**statistics** [*portal name*] [ **all-portals**]

## Context

[\[Tree\]](#) (clear>router>wpp statistics)

## Full Context

clear router wpp statistics

## Description

This command clears WPP statistics.

## Parameters

*portal-name*

Specifies the portal name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## statistics

## Syntax

**statistics**

## Context

[\[Tree\]](#) (clear>router>autoconfigure>rtr-adv statistics)

## Full Context

clear router autoconfigure router-advertisement statistics

## Description

This command clears router-advertisement statistics.

## Platforms

7450 ESS-7, 7750 SR-1, 7750 SR-7, 7750 SR-1e, 7750 SR-2e, 7750 SR-s

## 22.34 statistics-summary

### statistics-summary

## Syntax

**statistics-summary** [**active**] [**family**]

## Context

[\[Tree\]](#) (show>router>ldp statistics-summary)

## Full Context

show router ldp statistics-summary

## Description

This command displays LDP statistics summary information.

## Parameters

### active

Displays LDP statistics for only active paths.

### family

Displays either IPv4 or IPv6 LDP information.

## Platforms

All

## Output

### Output Example

```
*A:Dut-A# show router ldp statistics-summary
```

```
=====
Statistics Summary
=====
LDP FEC IPv4 Prefix Egress statistics : 0
LDP FEC IPv6 Prefix Egress statistics : 0
=====
*A:Dut-A#
```

## statistics-summary

### Syntax

**statistics-summary**

### Context

[\[Tree\]](#) (show>router>mpls statistics-summary)

### Full Context

show router mpls statistics-summary

### Description

This command displays the number of LSP statistics configured.

### Platforms

All

### Output

The following output is an example of MPLS statistics summary information.

### Output Example

```
*A:SRU4>config>router>mpls# show router mpls statistics-summary
=====
Statistics Summary
=====
LSP egress statistics           : 0
LSP ingress statistics          : 0
=====
*A:SRU4>config>router>mpls#
```

## 22.35 stats

## stats

### Syntax

**stats**

## Context

[\[Tree\]](#) (tools>dump>ipsec stats)

## Full Context

tools dump ipsec stats

## Description

Commands in this context dump the IPsec statistics.

## Platforms

All

stats

## Syntax

stats

## Context

[\[Tree\]](#) (clear>ipsec stats)

## Full Context

clear ipsec stats

## Description

Commands in this context clear IKE statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 22.36 status

status

## Syntax

status

## Context

[\[Tree\]](#) (show>call-trace status)

## Full Context

show call-trace status

## Description

This command gives a router-wide overview of call-trace operational data, such as number of configured profile, number of jobs and status of the compact flash.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of call trace status information.

### Output Example

```

=====
Call trace status
=====
No. of trace profiles: 1
No. of trace jobs   : 0
-----
Primary CF       : CF1           Max files number   : 200
CF1 state        : enabled        CF1 volume limit   : 1000 MB
CF2 state        : enabled        CF2 volume limit   : 1000 MB
    
```

[Table 548: Call Trace Status Field Descriptions](#) describes call trace status output field information.

Table 548: Call Trace Status Field Descriptions

Field	Descriptions
No. of trace profiles	The number of profiles configured in the system
No. of trace jobs	The number of trace jobs
Primary CF	The compact flash card to be used as the primary local storage location to save the generated call trace log files
Max files number	The cumulative number of call trace log files present on all cflash cards on the active CPM that are being used for local storage has reached the limit
CF1 state	The status of a call trace job on CF2. "running" indicates the job is active and is tracing events triggered by the host being monitored. "finished" indicates the job has already finished and is not tracing events generated by the host anymore.
CF1 volume limit	The data volume limit for the CF1 call trace job
CF2 state	The status of a call trace job on CF2. "running" indicates the job is active and is tracing events triggered by the host being monitored. "finished" indicates the job has already

Field	Descriptions
	finished and is not tracing events generated by the host anymore.
CF2 volume limit	The data volume limit for the CF2 call trace job

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>igmp status)

### Full Context

show router igmp status

### Description

This command displays IGMP status information.

If IGMP is not enabled, the following message appears:

```
A:NYC# show router igmp status
MINOR: CLI IGMP is not configured.
A:NYC#
```

### Platforms

All

### Output

The following output is an example of IGMP status information. [Table 549: IGMP Status Fields](#) provides IGMP status field descriptions.

### Output Example

```
*A:ALA-BA# show router 100 igmp status
=====
IGMP Status
=====
Admin State           : Up
Oper State            : Up
Query Interval        : 1024
Last Member Query Interval : 1024
Query Response Interval : 1023
Robust Count          : 10
=====
*A:ALA-BA#
```



Table 549: IGMP Status Fields

Label	Description
Admin State	The administrative status of IGMP.
Oper State	The current operating state of this IGMP protocol instance on this router.
Query Interval	The frequency at which IGMP query packets are transmitted.
Last Member Query Interval	The maximum response time inserted into group-specific queries sent in response to leave group messages, and is also the amount of time between group-specific query messages.
Query Response Interval	The maximum query response time advertised in IGMPv2 queries.
Robust Count	The number of times the router will retry a query.

## status

### Syntax

status

### Context

[\[Tree\]](#) (show>service>id>spb status)

### Full Context

show service id spb status

### Description

This command displays SPB status.

### Platforms

All

### Output

The following output is an example of service SPB status information.

### Output Example

```
A:cses-B01# show service id spb status
=====
ISIS Status
=====
System Id       : 0000.00AA.AAAA
Admin State    : Up
```

```
Oper State           : Up
SPB Routing          : Enabled
Last Enabled         : 07/23/2012 16:01:06
Level Capability     : L1
Authentication Check : True
Authentication Type  : None
CSNP-Authentication : Enabled
HELLO-Authentication : Enabled
PSNP-Authentication : Enabled
Overload-On-Boot Tim*: 0
LSP Lifetime         : 1200
LSP Wait             : 5 sec (Max)  0 sec (Initial)  1 sec (Second)
LSP MTU Size         : 1492 (Config) 1492 (Oper)
Adjacency Check      : loose
L1 Auth Type         : none
L1 CSNP-Authenticati*: Enabled
L1 HELLO-Authenticat*: Enabled
L1 PSNP-Authenticati*: Enabled
L1 Preference        : 15
L1 Ext. Preference   : 160
L1 Wide Metrics      : Enabled
L1 LSDB Overload     : Disabled
L1 LSPs              : 4
L1 Default Metric    : 10
L1 IPv6 Def Metric   : 10
Last SPF              : 07/23/2012 16:01:29
SPF Wait             : 10 sec (Max)  1000 ms (Initial)  1000 ms (Second)
Multi-topology       : Disabled
Area Addresses       : 00
Total Exp Routes(L1) : 0
IID TLV              : Disabled
All-L1-MacAddr       : 01:80:c2:00:00:14
=====
```

## status

### Syntax

**status** [*family*]

### Context

[\[Tree\]](#) (show>service>id>pim-snooping status)

### Full Context

show service id pim-snooping status

### Description

This command displays PIM status information.

### Parameters

**family**

Displays either IPv4 or IPv6 status information

**Values**    ipv4 or ipv6

## Platforms

All

## Output

The following output is an example of service PIM snooping status information.

### Output Example

```
*A:PE# show service id 1 pim-snooping status
=====
PIM Snooping Status ipv4
=====
Admin State           : Up
Oper State            : Up
Mode Admin            : Proxy
Mode Oper             : Proxy
Hold Time             : 90
Designated Router    : 10.0.1.2
J/P Tracking         : Inactive
Up Time               : 0d 00:08:43
Group Policy          : None
=====
*A:PE#
```

## status

## Syntax

**status**

## Context

[\[Tree\]](#) (show>router>ldp status)

## Full Context

show router ldp status

## Description

This command displays LDP status information.

## Platforms

All

## Output

LDP Status Output

[Table 550: LDP Status Output Fields](#) describes the LDP status output fields.

### Output Example

```
*A:Sim>config>router>ldp# show router ldp status
=====
```

```

LDP Status for IPv4 LSR ID 0.0.0.0
IPv6 LSR ID ::
=====
Created at          : 02/01/22 16:19:46
Last Change        : 02/01/22 16:19:46
Admin State        : Up
IPv4 Oper State    : Down
IPv4 Down Time     : 2d 03:47:02
IPv4 Oper Down Rea*: systemIpDown
IPv4 Oper Down Eve*: 0
Tunn Down Damp Time: 3 sec
Tunnel Table Pref  : 9
Label Withdraw Del*: 0 sec
Short. TTL Local   : Enabled
ConsiderSysIPInGep : Disabled
Imp Ucast Policies : None
Imp Mcast Policies : None
Tunl Exp Policies  : None
FRR                : Disabled
Mcast Upst ASBR FRR: Disabled
MP MBB Time        : 3
Aggregate Prefix   : False
Class Forwarding   : Disabled
Legacy LSR Interop : False
Entropy Label Capa*: False
Generate Basic FEC : Disabled
Resolve Root Using : ucastRtm
Import PMSI Routes : None
Cfg Max ECMP Routes: 32
Oper ECMP          : 1
IPv6 Oper State    : Down
IPv6 Down Time     : 2d 03:47:02
IPv6 Oper Down Reason: systemIpDown
IPv6 Oper Down Events: 0
Weighted ECMP      : Disabled
Implicit Null Label : Disabled
Short. TTL Transit : Enabled
Exp Ucast Policies : None
Tunl Imp Policies  : None
Mcast Upstream FRR : Disabled
ASBR MoFRR Loop Detct: Disabled
Agg Prefix Policies : None
=====
Capabilities
-----
Dynamic           : Enabled
IPv4 Prefix Fec   : Enabled
Service Fec128    : Enabled
MP MBB            : Enabled
Unrecognized Notif*: Enabled
P2MP              : Enabled
IPv6 Prefix Fec   : Enabled
Service Fec129    : Enabled
Overload          : Enabled
=====
    
```

Table 550: LDP Status Output Fields

Label	Description
Created at	The date and time when the LDP instance was created.
Last Change	The date and time when the LDP instance was last modified.
Admin State	Up — The LDP is administratively enabled. Down — The LDP is administratively disabled.
Oper State	Up — The LDP is operationally enabled. Down — The LDP is operationally disabled.
Up Time	The time, in hundredths of seconds, that the LDP instance has been operationally up.
Oper Down Reason	The reason for the operational down status.

Label	Description
Oper Down Events	The number of times the LDP instance has gone operationally down since the instance was created.
Tunn Down Damp Time	Indicates the value configured by <b>tunnel-down-damp-time</b> .
Weighted ECMP	Indicates whether weighted ecmp is enabled or not.
Label Withdraw Del*	Indicates the value configured by <b>label-withdrawal-delay</b> .
Implicit Null Label	Indicates whether implicit null is supported.
Short. TTL Local	Indicates whether <b>shortcut-local-ttl-propagate</b> is enabled or not.
Short. TTL Transit	Indicates whether <b>shortcut-transit-ttl-propagate</b> is enabled or not.
ConsiderSysIPByPol*	Whether <b>consider-system-ip-in-gep</b> is enabled.
Imp Ucast Policies	Lists the applied import unicast policies, if any. Up to five import policies can be specified.
Exp Ucast Policies	Lists the applied export unicast policies, if any. Up to five import policies can be specified.
Imp Mcast Policies	Lists the applied import multicast policies, if any. Up to five import policies can be specified.
Tunl Exp Policies	Lists the applied tunnel export policies, if any. Up to five import policies can be specified.
FRR	Indicates whether Fast ReRoute is enabled or not.
Mcast Upstream FRR	Indicates whether multicast upstream fast reroute has been enabled or not.
Mcast Upst ASBR FRR	Indicates whether multicast upstream fast reroute has been enabled or not at ASBR.
MP MBB Time	Indicates the value configured by <b>mp-mbb-time</b> .
Aggregate Prefix	Indicates whether aggregate-prefix-match has been enabled or not.
Agg Prefix Policies	Lists the policies for the aggregate prefix match, if any. Up to five aggregate prefix policies can be specified.
Class Forwarding	Indicates whether class forwarding is in the enabled or disabled mode. Enabled modes are (lsr, ler, or lsr-and-ler).
Legacy LSR Interop	Indicates whether legacy LSR interoperability has been enabled or not.
Entropy Label Capa*	Indicates whether the support for entropy label is enabled or not.
Generate Basic FEC	Indicates whether generate-basic-fec-only has been enabled or not.

Label	Description
Resolve Via Mcast *	Indicates whether the route for the root address of P2MP FECs will be resolved using the unicast routing table or the multicast routing table.
Capabilities	
Dynamic	Indicates whether LDP supports changing capabilities dynamically using the LDP Capability message, or only in the Initialization message.
P2MP	Indicates whether LDP supports exchanging P2MP FECs.
IPv4 Prefix Fec	Indicates whether LDP supports exchanging IPv4 Prefix FECs.
IPv6 Prefix Fec	Indicates whether LDP supports exchanging IPv6 Prefix FECs.
Service Fec128	Indicates whether LDP supports exchanging basic pseudowire service FECs.
Service Fec129	Indicates whether LDP supports exchanging generalized pseudowire (PWE3) service FECs.
MP MBB	Indicates whether MP MBB is enabled or not.
Overload	Indicates whether LDP supports sending and receiving overload notification messages (Nokia vendor extension).
Unrecognized Notif*	Indicates whether LDP supports receiving notification messages with an unrecognized status; required for the end-of-lib feature (RFC 5919).

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>mpls status)

### Full Context

show router mpls status

### Description

This command displays MPLS operation information.

### Platforms

All

## Output

The following output is an example of MPLS status information.

[Table 551: MPLS Status Output Fields](#) describes MPLS status output fields.

### Output Example

```
# show router mpls status

=====
MPLS Status
=====
Admin Status           : Up
Oper(V4) State        : Up      Oper(V6) State           : Up
IPv4 Oper Down Reason : n/a
IPv6 Oper Down Reason : n/a
FRR Object             : Enabled   Resignal Timer          : Disabled
Hold Timer            : 1 seconds Next Resignal           : N/A
Srlg Frr              : Disabled  Srlg Frr Strict         : Disabled
Admin Group Frr       : Disabled
Dynamic Bypass        : Enabled   User Srlg Database      : Disabled
BypassResignalTimer   : Disabled  BypassNextResignal     : N/A
LeastFill Min Thd     : 5 percent LeastFill Reopti Thd   : 10 percent
Local TTL Prop        : Enabled   Transit TTL Prop        : Enabled
P2mp TTL Prop         : Disabled
AB Sample Multiplier  : 1        AB Adjust Multiplier    : 288
Exp Backoff Retry     : Disabled  CSPF On Loose Hop       : Disabled
Lsp Init RetryTimeout : 30 seconds MBB Pref Current Hops  : Disabled
Logger Event Bundling : Disabled
Retry on IGP Overload : Disabled  Resignal on IGP Overload : Enabled

P2mp Resignal Timer   : Disabled  P2mp Next Resignal     : N/A
Sec FastRetryTimer    : Disabled  Static LSP FR Timer    : 30 seconds
P2P Max Bypass Association: 1000
Max Bypass PLR Association: 16
P2PActPathFastRetry  : Disabled  P2MP S2L Fast Retry    : Disabled
In Maintenance Mode   : No
MplsTp                : Disabled
Next Available Lsp Index : 2
Entropy Label RSVP-TE : Enabled   Entropy Label SR-TE    : Enabled
PCE Report RSVP-TE    : Disabled  PCE Report SR-TE       : Disabled
PCE Init LSP          : Disabled
SR-TE Resignal Timer  : Disabled  SR-TE Resig on IGP Event : Disabled
LSP History           : Enabled   LSP History Recording   : Enabled
LSP Self Ping Timeout : 300 seconds LSP Self Ping Interval : 2 seconds
LSP Self Ping RSVP TE : Enabled

=====
MPLS LSP Count
=====
-----
```

	Originate	Transit	Terminate
Static LSPs	0	0	0
Dynamic LSPs	1	0	0
Detour LSPs	0	0	0
P2MP S2Ls	0	0	0
MPLS-TP LSPs	0	0	0
Mesh-P2P LSPs	0	N/A	N/A
One Hop-P2P LSPs	0	N/A	N/A
SR-TE LSPs	0	N/A	N/A
Mesh-P2P SR-TE LSPs	0	N/A	N/A
One Hop-P2P SR-TE LSPs	0	N/A	N/A
PCE Init SR-TE LSPs	0	N/A	N/A

Table 551: MPLS Status Output Fields

Label	Description
Admin Status	Down — MPLS is administratively disabled. Up — MPLS is administratively enabled.
Oper Status	Down — MPLS is operationally down. Up — MPLS is operationally up.
Oper Down Reason	Specifies the operational down cause.
FRR Object	Enabled — Specifies that Fast reroute object is signaled for the LSP. Disabled — Specifies that Fast reroute object is not signaled for the LSP.
Resignal Timer	Enabled — Specifies that the resignal timer is enabled for the LSP. Disabled — Specifies that the resignal timer is disabled for the LSP.
Hold Timer	Displays the amount of time that the ingress node holds before programming its data plane and declaring the LSP up to the service module.
Next Resignal	Specifies the next resignal value.
Srlg Frr	Enabled — Specifies that SRLG Fast reroute is signaled for the LSP. Disabled — Specifies that SRLG Fast reroute is not signaled for the LSP.
Srlg Frr Strict	Enabled — Specifies that SRLG Fast reroute strict is signaled for the LSP. Disabled — Specifies that SRLG Fast reroute strict is not signaled for the LSP.
Admin Group Frr	Enabled — Specifies that the administrative group Fast reroute is signaled for the LSP. Disabled — Specifies that the administrative group Fast reroute is not signaled for the LSP.
Dynamic Bypass	Enabled — Specifies that dynamic bypass is enabled. Disabled — Specifies that dynamic bypass is disabled.
User Srlg Database	Enabled — Specifies that user SRLG databases are enabled. Disabled — Specifies that user SRLG databases are disabled.
BypassResignalTimer	Enabled — Specifies that the bypass resignal timer is enabled. Disabled — Specifies that the bypass resignal timer is disabled.
BypassNextResignal	Specifies the bypass next resignal value.
LeastFill Min Thd	Specifies the least fill minimum threshold percentage value.
LeastFill Reopti Thd	Specifies the least fill re-optimization threshold percentage value.



Label	Description
Local TTL Prop	Enabled — Specifies that local TTL property is enabled. Disabled — Specifies that local TTL property is disabled.
Transit TTL Prop	Enabled — Specifies that transit TTL property is enabled. Disabled — Specifies that transit TTL property is disabled.
P2mp TTL Prop	Enabled — Specifies that the uniform mode of operation is configured for RSVP P2MP LSPs. Disabled — Specifies that the pipe mode of operation is configured for RSVP P2MP LSPs.
AB Sample Multiplier	Specifies the AB sample multiplier value.
AB Adjust Multiplier	Specifies the AB adjust multiplier value.
Exp Backoff Retry	Enabled — Specifies that Exp Backoff retry is enabled. Disabled — Specifies that Exp Backoff is disabled.
CSPF On Loose Hop	Enabled — Specifies that CSPF On Loose Hop is enabled. Disabled — Specifies that CSPF On Loose Hop is disabled.
Lsp Init RetryTimeout	Specifies the LSP Init RetryTimeout seconds value.
MBB Pref Current Hops	Enabled — Specifies that MBB Pref Current Hops is enabled. Disabled — Specifies that MBB Pref Current Hops is disabled.
Logger Event Bundling	Enabled — Specifies that Logger Event Bundling is enabled. Disabled — Specifies that Logger Event Bundling is disabled.
Retry on IGP Overload	Enabled — Specifies that Retry on IGP Overload is enabled. Disabled — Specifies that Retry on IGP Overload is disabled.
Resignal on IGP Overload	Enabled — Specifies that Resignal on IGP Overload is enabled. Disabled — Specifies that Resignal on IGP Overload is disabled.
P2mp Resignal Timer	Enabled — Specifies that the P2MP Resignal Timer is enabled. Disabled — Specifies that the P2MP Resignal Timer is disabled.
P2mp Next Resignal	Specifies the P2MP Next Resignal Timer value.
Sec FastRetryTimer	Enabled — Specifies that the Sec Fast RetryTimer is enabled. Disabled — Specifies that the Sec Fast RetryTimer is disabled.
Static LSP FR Timer	Specifies the Static LSP FR Timer seconds value.
P2P Max Bypass Association	Specifies the P2P Max Bypass Association value.

Label	Description
P2PActPathFastRetry	Enabled — Specifies that the P2P ActPath Fast Retry is enabled. Disabled — Specifies that the P2P ActPath Fast Retry is disabled.
P2MP S2L Fast Retry	Enabled — Specifies that the P2MP S2L Fast Retry is enabled. Disabled — Specifies that the P2MP S2L Fast Retry is disabled.
In Maintenance Mode	No — Specifies that the system is not in maintenance mode. Yes — Specifies that the system is in maintenance mode.
MplsTp	Enabled — Specifies that MPLS TP is enabled. Disabled — Specifies that MPLS TP is disabled.
Next Available Lsp Index	Specifies the next available LSP index value.
Entropy Label RSVP-TE	Enabled — Specifies that Entropy Label RSVP-TE is enabled. Disabled — Specifies that Entropy Label RSVP-TE is disabled.
Entropy Label SR-TE	Enabled — Specifies that Entropy Label SR-TE is enabled. Disabled — Specifies that Entropy Label SR-TE is disabled.
PCE Report RSVP-TE	Enabled — Specifies that PCE Report RSVP-TE is enabled. Disabled — Specifies that PCE Report RSVP-TE is disabled.
PCE Report SR-TE	Enabled — Specifies that PCE Report SR-TE is enabled. Disabled — Specifies that PCE Report SR-TE is disabled.
PCE Init LSP	Enabled — Specifies that PCE Init LSP is enabled. Disabled — Specifies that PCE Init LSP is disabled.
PCE Init SR-TE	Enabled — Specifies that PCE Init LSP SR-TE is enabled. Disabled — Specifies that PCE Init LSP SR-TE is disabled.
PCE Init SR-TE Admin State	Up — Specifies that the PCE Init SR-TE Admin State is up. Down — Specifies that the PCE Init SR-TE Admin State is down.
PCE Init SR-TE Oper State	Up — Specifies that the PCE Init SR-TE Operational State is up. Down — Specifies that the PCE Init SR-TE Operational State is down.
PCE Init SR-TE Oper Dn Rsn	Specifies the reason for the PCE Init SR-TE Operationally down.
LSP History	Enabled — Specifies that the LSP history is enabled. Disabled — Specifies that the LSP history is disabled.
LSP History Recording	Enabled — Specifies that the LSP history recording is enabled.

Label	Description
	Disabled — Specifies that the LSP history recording is disabled.
LSP Self Ping Timeout	Specifies the LSP Self Ping timeout value.
LSP Self Ping Interval	Specifies the LSP Self Ping interval value.
LSP Self Ping RSVP TE	Specifies the status of LSP Self Ping RSVP TE.
Originate	Specifies the number of originations for the various LSP types.
Transit	Specifies the number of transits for the various LSP types.
Terminate	Specifies the number of terminations for the various LSP types.

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>mpls>mpls-tp status)

### Full Context

show router mpls mpls-tp status

### Description

This command displays MPLS-TP system configuration information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of MPLS TP status information .

### Output Example

```
*A:mlstp-dutA# show router mpls mpls-tp status
=====
MPLS-TP Status
=====
Admin Status   : Up
Global ID      : 42
Tunnel Id Min  : 1
Node ID        : 0.0.3.233
Tunnel Id Max  : 4096
=====
```

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>rsvp status)

### Full Context

show router rsvp status

### Description

This command displays RSVP status.

### Platforms

All

### Output

The following output is an example of RSVP status information.

[Table 552: RSVP Status Output Fields](#) describes RSVP status output fields.

*Table 552: RSVP Status Output Fields*

Label	Description
Admin Status	Down — RSVP is administratively disabled. Up — RSVP is administratively enabled.
Oper Status	Down — RSVP is operationally down. Up — RSVP is operationally up.
Keep Multiplier	Displays the <b>keep-multiplier</b> <i>number</i> used by RSVP to declare that a reservation is down or the neighbor is down.
Refresh Time	Displays the <b>refresh-time</b> interval (in s), between the successive Path and Resv refresh messages.
Message Pacing	Enabled — RSVP messages, specified in the <b>max-burst</b> command, are sent in a configured interval, specified in the <b>period</b> command. Disabled — Message pacing is disabled. RSVP message transmission is not regulated.
Pacing Period	Displays the time interval (in ms), when the router can send the specified number of RSVP messages specified in the <b>rsvp max-burst</b> command.

Label	Description
Max Packet Burst	Displays the maximum number of RSVP messages that are sent in the specified period under normal operating conditions.
Soft Preemption Timer	Displays the time (in s), a node holds on to a reservation for which it has triggered the soft preemption procedure.
Rapid Retransmit	Displays the value of the rapid retransmission interval.
Rapid Retry Limit	Displays the rapid retry limit.
Graceful Shutdown	Specifies whether graceful shutdown of the RSVP node is enabled.
Dark Bandwidth	Indicates the status of the dark bandwidth accounting application.
DBw Sample Intv	Displays the configured dark bandwidth sampling interval.
DBw Up Threshold	Displays the configured dark bandwidth up threshold.
DBw Down Threshold	Displays the configured dark bandwidth down threshold.
DBw Multiplier	Displays the configured dark bandwidth multiplier.
DBw Sample Multp	Displays the configured dark bandwidth sample multiplier.

### Output Example

```

B:# show router rsvp status
=====
RSVP Status
=====
Admin Status      : Down          Oper Status      : Down
Keep Multiplier   : 3              Refresh Time     : 30 sec
Message Pacing    : Disabled       Pacing Period    : 100 msec
Max Packet Burst  : 650 msgs      Refresh Bypass   : Disabled
Rapid Retransmit  : 5 hmsec       Rapid Retry Limit: 3
Graceful Shutdown: Disabled       SoftPreemptionTimer: 300 sec
Implicit Null Label: Disabled      Node-id in RR0   : Exclude
P2P Merge Point Ab*: 10          P2MP Merge Point A*: 10
DiffServTE AdmModel: Basic
Percent Link Bw CT0: 100          Percent Link Bw CT4: 0
Percent Link Bw CT1: 0           Percent Link Bw CT5: 0
Percent Link Bw CT2: 0           Percent Link Bw CT6: 0
Percent Link Bw CT3: 0           Percent Link Bw CT7: 0
TE0 -> Class Type : 0           Priority         : 0
TE1 -> Class Type : 0           Priority         : 1
TE2 -> Class Type : 0           Priority         : 2
TE3 -> Class Type : 0           Priority         : 3
TE4 -> Class Type : 0           Priority         : 4
TE5 -> Class Type : 0           Priority         : 5
TE6 -> Class Type : 0           Priority         : 6
TE7 -> Class Type : 0           Priority         : 7
IgpThresholdUpdate : Disabled
Up Thresholds(%)   : 0 15 30 45 60 75 80 85 90 95 96 97 98 99 100
Down Thresholds(%) : 100 99 98 97 96 95 90 85 80 75 60 45 30 15 0
Update Timer       : N/A
    
```

```

Update on CAC Fail : Disabled
Dark Bandwidth    : Enabled          DBw Multiplier      : 100
DBw Sample Intv   : 30                DBw Sample Multp    : 3
DBw Up Threshold  : 0 %
DBw Down Threshold : 0 %
=====
* indicates that the corresponding row element may have been truncated.
    
```

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>pcep>pcc status)

### Full Context

show router pcep pcc status

### Description

This command displays PCEP status information

### Platforms

All

### Output

The table in the **detail** parameter (**show>router>pcep>pcc detail**) describes the status output fields.

### Output Example

```

*A:Dut-C>config>router>mpls# show router pcep pcc status
=====
Path Computation Element Protocol (PCEP) Path Computation Client (PCC) Info
=====
Admin Status          : Up           Oper Status          : Up
Unknown Msg Limit     : 10 msg/min
Keepalive Interval    : 30 seconds      DeadTimer Interval   : 120 seconds
Capabilities List      : stateful-delegate stateful-pce segment-rt-path rsvp-
                        path pce-initiated-lsp
Address               : 10.20.1.3
Report Path Constraints: True
Redelegation Interval : 90 seconds
State Interval        : 180 seconds      State Timer Action    : remove
Max SR-TE PCE Init Lsps: 8191
-----
PCEP Path Computation Client (PCC) Peer Info
-----
Peer                  Admin State/Oper State Oper Keepalive/Oper DeadTimer
-----
10.20.1.24            Up/Up                    30/120
-----
=====
    
```

## status

### Syntax

status

### Context

[\[Tree\]](#) (show>router>mpls>forwarding-policies status)

### Full Context

show router mpls forwarding-policies status

### Description

This command displays MPLS Forwarding status information

### Platforms

All

### Output

[Table 553: MPLS Forward-policy Status Output Fields](#) describes MPLS forward-policy status output fields.

*Table 553: MPLS Forward-policy Status Output Fields*

Label	Description
Reserved label bl	Specifies the MPLS reserved label block name.

### Output Example

```
*A:Dut-B>show>router>mpls# forwarding-policies status
=====
Forwarding Policy Status
=====
Admin Status      : Up                Oper Status        : Down
Reserved label bl: reservedlabel!!!blockname32chars
=====
```

## status

### Syntax

status

### Context

[\[Tree\]](#) (show>app-assure>group>cflowd status)

## Full Context

```
show application-assurance group cflowd status
```

## Description

This command displays status information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of status information.

### Output Example

```
A:ALU-A# show application-assurance group 1 status [isa 1/2] cflowd
=====
Application-Assurance Group Cflowd Status
=====
Cflowd Admin Status   : Enabled
Cflowd Oper Status    : Enabled
-----
Volume :
-----
Sample Rate           : <Disabled> or <1 in 500 packets>
Active Flows          : 23102
Records Reported      : 12345
Records Dropped       : 10
Records Per Second    : 45
Packets Sent          : 1763
Packets Sent Per Sec  : 7
-----
TCP Performance :
-----
Sample Rate           : <Disabled> or <1 in 1000 flows>
Active Flows          : 32103
Flows Not Allocated   : 33
Records Reported      : 12345678
Records Dropped       : 100
Records Per Second    : 456
Packets Sent          : 2057613
Packets Sent Per Sec  : 76
=====
A:ALU-A#

A:ALU-A#show application-assurance group <aa-group-id:[partition]> cflowd status
=====
Application-Assurance Group:Partition Cflowd Status
=====
-----
Volume :
-----
Admin State           : Up
Records Reported      : 12345
Records Dropped       : 10
-----
TCP Performance :
-----
Admin State           : Up
```



```
Flows Not Allocated : 33
Records Reported    : 12345678
Records Dropped     : 100
```

```
=====
A:ALU-A#
```

## status

### Syntax

```
status [isa mda-id] cflowd
status [isa mda-id]
status [isa mda-id] detail
status [isa mda-id] cpu [sample-period seconds]
status [isa mda-id] overload
status [isa mda-id] qos count
status [isa mda-id] qos pools
```

### Context

[\[Tree\]](#) (show>app-assure>group status)

### Full Context

```
show application-assurance group status
```

### Description

This command displays system statistics.

### Parameters

#### **isa mda-id**

Displays information about the specified AA ISA.

**Values** mda-id: slot/mda: slot: 1 to 10, mda: 1 or 2

#### **cflowd**

Displays cflowd status information.

#### **detail**

Displays detailed status information.

#### **cpu [sample-period seconds]**

Displays DPU utilization info about the specified AA ISA. The **isa mda-id** must be specified. The sample period can be specified within a range of 1 5 seconds (default 1s).

**Values** 1 to 5

**overload**

Displays the overload status.

**qos count**

Displays information about queue statistics. The **isa mda-id** must be specified.

**qos pools**

Displays information about AA related pool utilization. The **isa mda-id** must be specified.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of status information.

**Output Example**

```
*A:Dut-C# show application-assurance group 1 status
=====
Application-Assurance Status
=====
Last time change affecting status : 01/25/2018 18:55:08
Number of Active ISAs             : 2
Flows                             : 0
Flow Resources In Use             : 0
AA Subs Created                   : 0
AA Subs Deleted                   : 0
AA Subs Modified                  : 0
AA Subs Quarantined               : 0
Seen IP Requests Sent             : 0
Seen IP Requests Dropped         : 0
-----
                                Current   Average   Peak
-----
Active Flows                     : 0       0         0
Flow Setup Rate (per second)     : 0       0         0
Traffic Rate (Mbps)              : 0       0         0
Packet Rate (per second)         : 0       0         0
AA-Subs Downloaded               : 0       0         0
Active Subs                      : 0       0         0
-----
                                Packets   Octets
-----
Diverted traffic                  : 0       0
Diverted discards                 : 0       0
  Congestion                      : 0       0
  Errors                           : 0       N/A
Entered ISA-AAs                  : 0       0
Buffered in ISA-AAs              : 0       0
Discarded in ISA-AAs             : 0       0
  Policy                          : 0       0
  Congestion                      : 0       0
  Errors                           : 0       0
Modified in ISA-AAs              : 0       0
  Packet size increased           : 0       0
  Packet size decreased           : 0       0
Errors (policy bypass)            : 0       0
Errors (cut-through)              : 0       0
Generated in ISA-AAs             : 0       0
  HTTP Redirect                   : 0       0
```

```

Exited ISA-AAs           : 0           0
Returned discards       : 0           0
  Congestion             : 0           0
  Errors                 : 0           N/A
Returned traffic        : 0           0
    
```

=====

\*A:Dut-C# show application-assurance group 1 status detail

=====

Application-Assurance Status

=====

```

Last time change affecting status : 01/25/2018 18:55:08
Number of Active ISAs           : 2
Flows                           : 0
Flow Resources In Use           : 0
AA Subs Created                 : 0
AA Subs Deleted                 : 0
AA Subs Modified                : 0
Seen IP Requests Sent           : 0
Seen IP Requests Dropped       : 0
    
```

```

-----
Current      Average      Peak
-----
Active Flows           : 0          0          0
Flow Setup Rate (per second) : 0          0          0
Traffic Rate (Mbps)   : 0          0          0
Packet Rate (per second) : 0          0          0
AA-Subs Downloaded    : 0          0          0
Active Subs           : 0          0          0
    
```

```

-----
from-sub packets      from-sub octets
to-sub packets        to-sub octets
-----
Diverted traffic      : 0          0
                   0          0
Diverted discards    : 0          0
                   0          0
  Congestion         : 0          0
                   0          0
  Errors             : 0          N/A
                   0          N/A
Entered ISA-AAs      : 0          0
                   0          0
Buffered in ISA-AAs  : 0          0
                   0          0
Discarded in ISA-AAs : 0          0
                   0          0
  Policy            : 0          0
                   0          0
  Congestion        : 0          0
                   0          0
  Errors            : 0          0
                   0          0
Modified in ISA-AAs  : 0          0
                   0          0
  Packet size increased : 0          0
                   0          0
  Packet size decreased : 0          0
                   0          0
Errors (policy bypass) : 0          0
                   0          0
Errors (cut-through) : 0          0
                   0          0
    
```

```

Generated in ISA-AAs      : 0          0
      HTTP Redirect      : 0          0
      Exited ISA-AAs     : 0          0
Returned discards       : 0          0
      Congestion        : 0          0
      Errors            : 0          N/A
Returned traffic        : 0          0
    
```

=====

```

A:ALU>show>app-assure>group#
=====
Application-Assurance Status
=====
Last time change affecting status : 09/28/2012 14:19:05
Number of Active ISAs            : 1
Flows                            : 62
Flow Resources In Use            : 0
AA-Subs Created                  : 200
AA-Subs Deleted                  : 149
AA-Subs Modified                 : 3
Seen-IP Requests Sent           : 0
Seen-IP Requests Dropped        : 0
-----
                                Current   Average   Peak
-----
Active Flows                    : 0       0        16
Flow Setup Rate (per second)    : 0       0         1
Traffic Rate (Mbps)             : 0       0         0
Packet Rate (per second)       : 0       0         6
AA-Subs Downloaded              : 51      51        51
Active Subs                     : 0       0         1
-----
show application-assurance group <aa-group-id> status [isa <slot/mda>] overload
=====
Application Assurance Group 1 overload
=====
-----
Trap Configuration              High Watermark              Low Watermark
-----
Flow usage                      95%                          90%
Flow setup rate (fps)           60000                        55000
Bit rate (Mbps)                 9000                          8500
Packet rate (pps)               12345678901234567890        12345678901234567890
Datapath CPU usage              95%                          90%
-----
ISA 4/1                          Total up-time (s) : 12345678901234567890
TCA Type
  Current Level                  Average Level                  Peak Level
    State                        Count                          Duration (s)
-----
Flow resources
  75.1%                          50.0%                          82.8%
  cleared                        12345678901234567890        12345678901234567890
Flow setup rate
    
```

```

12345678901234567890      12345678901234567890      12345678901234567890
      cleared                      0                      0
Bit rate
      11000                      5000                      12000
      raised                      1                      123456789
Packet rate
      1500000                      750000                      1600000
      cleared                      2                      12345
Datapath CPU usage
      15.1%                      10.5%                      32.1%
      cleared                      0                      0
Management CPU usage
      65.2%                      50.0%                      77.5%
      N/A                      N/A                      N/A
-----
Overload Trap Configuration      High Watermark      Low Watermark
-----
From-sub WA buffer depth      80%      75%
To-sub WA buffer depth      80%      75%
-----
Isa-overload-cut-through : enabled
Overload cut-through TCA
  Current from-sub WA : 30%
  Current to-sub WA   : 40%
  State                : cleared
  Count                : 3
  Duration (s)        : 123
=====

A:ALU>show>app-assure>group# status isa 3/2 qos count
=====
Application-assurance Queue Statistics for ISA-AA Group: 1, isa 3/2
=====
-----

Egress From-Subscriber
  Queue 1      Packets      Octets
  In Profile forwarded : 0      0
  In Profile dropped  : 0      0
  Out/Exc Prof forwarded: 28940  3767233
  Out/Exc Prof dropped  : 0      0
  Queue 2      Packets      Octets
  In Profile forwarded : 0      0
  In Profile dropped  : 0      0
  Out/Exc Prof forwarded: 0      0
  Out/Exc Prof dropped  : 0      0

Egress To-Subscriber
  Queue 1      Packets      Octets
  In Profile forwarded : 0      0
  In Profile dropped  : 0      0
  Out/Exc Prof forwarded: 44499  53066848
  Out/Exc Prof dropped  : 0      0
  Queue 2      Packets      Octets
  In Profile forwarded : 0      0
  In Profile dropped  : 0      0
  Out/Exc Prof forwarded: 0      0
  Out/Exc Prof dropped  : 0      0

Ingress From-Subscriber
  Queue 1      Packets      Octets
  In Profile forwarded : 25548  3361023
    
```

```

In Profile dropped : 0 0
Out/Exc Prof forwarded: 1 60
Out/Exc Prof dropped : 0 0
Queue 2 Packets Octets
In Profile forwarded : 2921 365606
In Profile dropped : 0 0
Out/Exc Prof forwarded: 0 0
Out/Exc Prof dropped : 0 0
Queue 9 Packets Octets
In Profile forwarded : 0 0
In Profile dropped : 0 0
Out/Exc Prof forwarded: 0 0
Out/Exc Prof dropped : 0 0
Queue 10 Packets Octets
In Profile forwarded : 0 0
In Profile dropped : 0 0
Out/Exc Prof forwarded: 0 0
Out/Exc Prof dropped : 0 0

Ingress To-Subscriber
Queue 1 Packets Octets
In Profile forwarded : 39541 46899769
In Profile dropped : 0 0
Out/Exc Prof forwarded: 1 92
Out/Exc Prof dropped : 0 0
Queue 2 Packets Octets
In Profile forwarded : 5050 6291204
In Profile dropped : 0 0
Out/Exc Prof forwarded: 0 0
Out/Exc Prof dropped : 0 0
Queue 9 Packets Octets
In Profile forwarded : 0 0
In Profile dropped : 0 0
Out/Exc Prof forwarded: 0 0
Out/Exc Prof dropped : 0 0
Queue 10 Packets Octets
In Profile forwarded : 0 0
In Profile dropped : 0 0
Out/Exc Prof forwarded: 0 0
Out/Exc Prof dropped : 0 0
=====
A:ALU>show>app-assure>group#
    
```

```

*A:ALU>show>app-assure>group# status isa 1/2 qos pools
=====
Pool Information
=====
FP : 1
Application : Net-Ing Pool Name : default
CLI Config. Resv CBS : Sum
Resv CBS Step : 0% Resv CBS Max : 0%
Amber Alarm Threshold: 0% Red Alarm Threshold : 0%
-----
Utilization State Start-Avg Max-Avg Max-Prob
-----
HiPlus-Slope Down 85% 100% 80%
High-Slope Down 70% 90% 80%
Low-Slope Down 50% 75% 80%
Exceed-Slope Down 30% 55% 80%
Time Avg Factor : 7
Pool Total : 264192 KB
Pool Shared : 129024 KB Pool Resv : 135168 KB
-----
    
```

```

-----
Current Resv CBS    Provisioned    Rising        Falling        Alarm
%age               all Queues    Alarm Thd     Alarm Thd     Color
-----
Sum                134640 KB    NA            NA            Green
Pool Total In Use   : 0 KB
Pool Shared In Use  : 0 KB           Pool Resv In Use : 0 KB
WA Shared In Use    : 0 KB
HiPlus-Slope Drop Pr*: 0           Hi-Slope Drop Prob : 0
Lo-Slope Drop Prob  : 0           Excd-Slope Drop Prob : 0
=====
Queue Information
=====
Queue : 1 Net=be T=1/*
=====
FC Map           : be
Dest Tap         : 1/*
Admin PIR        : 30000000
Admin CIR        : 0
Admin FIR        : 0
Admin MBS        : 132096 KB
High-Plus Drop T*: 132096 KB
Low Drop Tail    : 116736 KB
CBS              : 132 KB
Slope            : not-applicable
Dest FP         : 1
Oper PIR        : Max
Oper CIR        : 0
Oper FIR        : 0
Oper MBS        : 132096 KB
High Drop Tail  : 132096 KB
Exceed Drop Tail : 119808 KB
Depth           : 0
=====
...
=====
Queue : 16 Net=nc T=31/*
=====
FC Map           : nc
Dest Tap         : MCast
Admin PIR        : 30000000
Admin CIR        : 30000000
Admin FIR        : 0
Admin MBS        : 66048 KB
High-Plus Drop T*: 66048 KB
Low Drop Tail    : 58368 KB
CBS              : 2640 KB
Slope            : not-applicable
Dest FP         : not-applicable
Oper PIR        : Max
Oper CIR        : 30000000
Oper FIR        : 0
Oper MBS        : 66048 KB
High Drop Tail  : 66048 KB
Exceed Drop Tail : 59904 KB
Depth           : 0
=====
No Matching Entries
=====
* indicates that the corresponding row element may have been truncated.
=====
Pool Information
=====
Port             : 1/2/fm-sub
Application      : Net-Egr           Pool Name       : default
CLI Config. Resv CBS : Sum
Resv CBS Step    : 0%
Amber Alarm Threshold: 0%
Resv CBS Max     : 0%
Red Alarm Threshold : 0%
=====
Utilization      State      Start-Avg    Max-Avg      Max-Prob
-----
HiPlus-Slope    Down      85%          100%         80%
High-Slope      Down      70%          90%          80%
Low-Slope       Down      50%          75%          80%
Exceed-Slope    Down      30%          55%          80%
Time Avg Factor : 7
Pool Total      : 116736 KB
Pool Shared     : 66048 KB           Pool Resv       : 50688 KB
=====
    
```

```

=====
Current Resv CBS    Provisioned    Rising        Falling        Alarm
%age               all Queues    Alarm Thd     Alarm Thd     Color
=====
Sum                50520 KB     NA            NA            Green
Pool Total In Use   : 0 KB
Pool Shared In Use : 0 KB           Pool Resv In Use : 0 KB
WA Shared In Use   : 0 KB
HiPlus-Slope Drop Pr*: 0           Hi-Slope Drop Prob : 0
Lo-Slope Drop Prob : 0           Excd-Slope Drop Prob : 0
=====
Queue Information
=====
Queue : 1 Net=be Port=1/2/fm-sub
=====
FC Map           : be
Dest Tap         : not-applicable    Dest FP         : not-applicable
Admin PIR        : 10000000           Oper PIR        : Max
Admin CIR        : 0           Oper CIR        : 0
Admin MBS        : 58368 KB           Oper MBS        : 58368 KB
High-Plus Drop T*: 58368 KB           High Drop Tail  : 58368 KB
Low Drop Tail    : 52224 KB           Exceed Drop Tail : 52224 KB
CBS              : 1176 KB           Depth           : 0
Slope            : not-applicable
=====
Queue : 2 Net=l2 Port=1/2/fm-sub
=====
FC Map           : l2
Dest Tap         : not-applicable    Dest FP         : not-applicable
Admin PIR        : 10000000           Oper PIR        : Max
Admin CIR        : 25000000          Oper CIR        : 25000000
Admin MBS        : 58368 KB           Oper MBS        : 58368 KB
High-Plus Drop T*: 58368 KB           High Drop Tail  : 58368 KB
Low Drop Tail    : 52224 KB           Exceed Drop Tail : 52224 KB
CBS              : 3552 KB           Depth           : 0
Slope            : not-applicable
=====
Queue : 3 Net=af Port=1/2/fm-sub
=====
FC Map           : af
Dest Tap         : not-applicable    Dest FP         : not-applicable
Admin PIR        : 10000000           Oper PIR        : Max
Admin CIR        : 25000000          Oper CIR        : 25000000
Admin MBS        : 58368 KB           Oper MBS        : 58368 KB
High-Plus Drop T*: 58368 KB           High Drop Tail  : 58368 KB
Low Drop Tail    : 52224 KB           Exceed Drop Tail : 52224 KB
CBS              : 11712 KB          Depth           : 0
Slope            : not-applicable
=====
Queue : 4 Net=l1 Port=1/2/fm-sub
=====
FC Map           : l1
Dest Tap         : not-applicable    Dest FP         : not-applicable
Admin PIR        : 10000000           Oper PIR        : Max
Admin CIR        : 25000000          Oper CIR        : 25000000
Admin MBS        : 29184 KB           Oper MBS        : 29184 KB
High-Plus Drop T*: 29184 KB           High Drop Tail  : 29184 KB
Low Drop Tail    : 26112 KB           Exceed Drop Tail : 26112 KB
CBS              : 3552 KB           Depth           : 0
Slope            : not-applicable
=====
Queue : 5 Net=h2 Port=1/2/fm-sub
=====

```



```

FC Map      : h2
Dest Tap    : not-applicable      Dest FP      : not-applicable
Admin PIR   : 10000000            Oper PIR     : Max
Admin CIR   : 10000000            Oper CIR     : Max
Admin MBS   : 58368 KB            Oper MBS     : 58368 KB
High-Plus Drop T*: 58368 KB      High Drop Tail : 58368 KB
Low Drop Tail : 52224 KB          Exceed Drop Tail : 52224 KB
CBS         : 11712 KB            Depth        : 0
Slope       : not-applicable

=====
Queue : 6 Net=ef Port=1/2/fm-sub
=====
FC Map      : ef
Dest Tap    : not-applicable      Dest FP      : not-applicable
Admin PIR   : 10000000            Oper PIR     : Max
Admin CIR   : 10000000            Oper CIR     : Max
Admin MBS   : 58368 KB            Oper MBS     : 58368 KB
High-Plus Drop T*: 58368 KB      High Drop Tail : 58368 KB
Low Drop Tail : 52224 KB          Exceed Drop Tail : 52224 KB
CBS         : 11712 KB            Depth        : 0
Slope       : not-applicable

=====
Queue : 7 Net=h1 Port=1/2/fm-sub
=====
FC Map      : h1
Dest Tap    : not-applicable      Dest FP      : not-applicable
Admin PIR   : 10000000            Oper PIR     : Max
Admin CIR   : 1000000            Oper CIR     : 1000000
Admin MBS   : 29184 KB            Oper MBS     : 29184 KB
High-Plus Drop T*: 29184 KB      High Drop Tail : 29184 KB
Low Drop Tail : 26112 KB          Exceed Drop Tail : 26112 KB
CBS         : 3552 KB             Depth        : 0
Slope       : not-applicable

=====
Queue : 8 Net=nc Port=1/2/fm-sub
=====
FC Map      : nc
Dest Tap    : not-applicable      Dest FP      : not-applicable
Admin PIR   : 10000000            Oper PIR     : Max
Admin CIR   : 1000000            Oper CIR     : 1000000
Admin MBS   : 29184 KB            Oper MBS     : 29184 KB
High-Plus Drop T*: 29184 KB      High Drop Tail : 29184 KB
Low Drop Tail : 26112 KB          Exceed Drop Tail : 26112 KB
CBS         : 3552 KB             Depth        : 0
Slope       : not-applicable
No Matching Entries

=====
* indicates that the corresponding row element may have been truncated.
=====
Pool Information
=====
Port          : 1/2/to-sub
Application   : Net-Egr           Pool Name     : default
CLI Config. Resv CBS : Sum
Resv CBS Step : 0%               Resv CBS Max  : 0%
Amber Alarm Threshold: 0%         Red Alarm Threshold : 0%
-----
Utilization   State      Start-Avg   Max-Avg     Max-Prob
-----
HiPlus-Slope Down       85%        100%        80%
High-Slope   Down       70%        90%         80%
Low-Slope    Down       50%        75%         80%
Exceed-Slope Down       30%        55%         80%
    
```

```

Time Avg Factor      : 7
Pool Total          : 233472 KB
Pool Shared        : 132096 KB      Pool Resv          : 101376 KB
-----
Current Resv CBS    : Provisioned   Rising           Falling           Alarm
%age                : all Queues   Alarm Thd        Alarm Thd         Color
-----
Sum                 : 101040 KB   NA              NA              Green
Pool Total In Use   : 0 KB
Pool Shared In Use  : 0 KB      Pool Resv In Use : 0 KB
WA Shared In Use    : 0 KB
HiPlus-Slope Drop Pr*: 0      Hi-Slope Drop Prob : 0
Lo-Slope Drop Prob : 0      Excd-Slope Drop Prob : 0
=====
Queue Information
=====
Queue : 1 Net=be Port=1/2/to-sub
=====
FC Map              : be
Dest Tap            : not-applicable   Dest FP           : not-applicable
Admin PIR           : 10000000      Oper PIR          : Max
Admin CIR           : 0              Oper CIR          : 0
Admin MBS           : 116736 KB     Oper MBS          : 116736 KB
High-Plus Drop T*  : 116736 KB     High Drop Tail    : 116736 KB
Low Drop Tail       : 104448 KB     Exceed Drop Tail  : 104448 KB
CBS                 : 2352 KB       Depth             : 0
Slope               : not-applicable
=====
Queue : 2 Net=l2 Port=1/2/to-sub
=====
FC Map              : l2
Dest Tap            : not-applicable   Dest FP           : not-applicable
Admin PIR           : 10000000      Oper PIR          : Max
Admin CIR           : 2500000      Oper CIR          : 2500000
Admin MBS           : 116736 KB     Oper MBS          : 116736 KB
High-Plus Drop T*  : 116736 KB     High Drop Tail    : 116736 KB
Low Drop Tail       : 104448 KB     Exceed Drop Tail  : 104448 KB
CBS                 : 7104 KB       Depth             : 0
Slope               : not-applicable
=====
Queue : 3 Net=af Port=1/2/to-sub
=====
FC Map              : af
Dest Tap            : not-applicable   Dest FP           : not-applicable
Admin PIR           : 10000000      Oper PIR          : Max
Admin CIR           : 2500000      Oper CIR          : 2500000
Admin MBS           : 116736 KB     Oper MBS          : 116736 KB
High-Plus Drop T*  : 116736 KB     High Drop Tail    : 116736 KB
Low Drop Tail       : 104448 KB     Exceed Drop Tail  : 104448 KB
CBS                 : 23424 KB     Depth             : 0
Slope               : not-applicable
=====
Queue : 4 Net=l1 Port=1/2/to-sub
=====
FC Map              : l1
Dest Tap            : not-applicable   Dest FP           : not-applicable
Admin PIR           : 10000000      Oper PIR          : Max
Admin CIR           : 2500000      Oper CIR          : 2500000
Admin MBS           : 58368 KB     Oper MBS          : 58368 KB
High-Plus Drop T*  : 58368 KB     High Drop Tail    : 58368 KB
Low Drop Tail       : 52224 KB     Exceed Drop Tail  : 52224 KB
CBS                 : 7104 KB       Depth             : 0
    
```

```

Slope          : not-applicable
=====
Queue : 5 Net=h2 Port=1/2/to-sub
=====
FC Map         : h2
Dest Tap       : not-applicable      Dest FP        : not-applicable
Admin PIR      : 10000000             Oper PIR       : Max
Admin CIR      : 10000000             Oper CIR       : Max
Admin MBS      : 116736 KB            Oper MBS       : 116736 KB
High-Plus Drop T*: 116736 KB          High Drop Tail : 116736 KB
Low Drop Tail  : 104448 KB            Exceed Drop Tail : 104448 KB
CBS           : 23424 KB              Depth          : 0
Slope         : not-applicable
=====
Queue : 6 Net=ef Port=1/2/to-sub
=====
FC Map         : ef
Dest Tap       : not-applicable      Dest FP        : not-applicable
Admin PIR      : 10000000             Oper PIR       : Max
Admin CIR      : 10000000             Oper CIR       : Max
Admin MBS      : 116736 KB            Oper MBS       : 116736 KB
High-Plus Drop T*: 116736 KB          High Drop Tail : 116736 KB
Low Drop Tail  : 104448 KB            Exceed Drop Tail : 104448 KB
CBS           : 23424 KB              Depth          : 0
Slope         : not-applicable
=====
Queue : 7 Net=h1 Port=1/2/to-sub
=====
FC Map         : h1
Dest Tap       : not-applicable      Dest FP        : not-applicable
Admin PIR      : 10000000             Oper PIR       : Max
Admin CIR      : 10000000             Oper CIR       : 10000000
Admin MBS      : 58368 KB             Oper MBS       : 58368 KB
High-Plus Drop T*: 58368 KB          High Drop Tail : 58368 KB
Low Drop Tail  : 52224 KB            Exceed Drop Tail : 52224 KB
CBS           : 7104 KB              Depth          : 0
Slope         : not-applicable
=====
Queue : 8 Net=nc Port=1/2/to-sub
=====
FC Map         : nc
Dest Tap       : not-applicable      Dest FP        : not-applicable
Admin PIR      : 10000000             Oper PIR       : Max
Admin CIR      : 10000000             Oper CIR       : 10000000
Admin MBS      : 58368 KB             Oper MBS       : 58368 KB
High-Plus Drop T*: 58368 KB          High Drop Tail : 58368 KB
Low Drop Tail  : 52224 KB            Exceed Drop Tail : 52224 KB
CBS           : 7104 KB              Depth          : 0
Slope         : not-applicable
No Matching Entries
=====
* indicates that the corresponding row element may have been truncated.
*A:ALU>show>app-assure>group#
    
```

## status

### Syntax

#### status

## Context

[\[Tree\]](#) (show>router>mld status)

## Full Context

show router mld status

## Description

This command displays MLD status information.

If MLD is not enabled, the following message appears:

```
A:NYC# show router mld status
MINOR: CLI MLD is not configured.
A:NYC#
```

## Platforms

All

## Output

The following output is an example of MLD status information [Table 554: MLD Status Fields](#) provides MLD status field descriptions.

### Output Example

```
*A:ALA-BA# show router mld status
=====
MLD Status
=====
Admin State           : Up
Oper State            : Up
Query Interval        : 125
Last Listener Query Interval : 1
Query Response Interval : 10
Robust Count          : 2
=====
*A:ALA-BA#
```

Table 554: MLD Status Fields

Label	Description
Admin State	The administrative status of MLD.
Oper State	The current operating state of this MLD protocol instance on this router.
Query Interval	The frequency at which MLD query packets are transmitted.
Last Listener Query Interval	The maximum response time inserted into group-specific queries sent in response to leave group messages, and is also the amount of time between group-specific query messages.

Label	Description
Query Response Interval	The maximum query response time advertised in MLDv2 queries.
Robust Count	The number of times the router will retry a query.

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>msdp status)

### Full Context

show router msdp status

### Description

This command displays MSDP status information.

### Platforms

All

### Output

The following output is an example of MSDP status information, and [Table 555: Output fields: MSDP status](#) describes the output fields.

#### Output example

```
A:node-2# show router msdp status
=====
MSDP Status
=====
Admin State                : Up
Local Address              : None
Global Statistics
Active Src Limit           : None
Act Src Lim Excd          : 0
Num. Peers                 : 1
Num. Peers Estab          : 1
Num. Source Active        : 10
Policies                   : None
Data Encapsulation        : Enabled
Receive Msg Rate
Rate                       : 0
Time                      : 0
Threshold                  : 0
Last Msdp Enabled         : 08/30/2002 03:21:43
=====
```

A: node-2#

Table 555: Output fields: MSDP status

Label	Description
Admin State	The administrative state
Local Address	The local IP address
Active Src Limit	The active source limit
Act Src Lim Excd	The active source limit which has been exceeded
Number of Peers	The number of peers
Num. Peers Estab	The number of peers established
Num. Source Active	The number of active sources
Policies	The policy to export source active state from the source active list into MSDP
Data Encapsulation	The RP using MSDP to encapsulate multicast data received in MSDP register messages inside forwarded MSDP SA messages - enabled or disabled
Rate	The receive message rate
Time	The receive message time
Threshold	The number of MSDP messages that can be processed before the MSDP message rate-limiting function is activated
RPF Table	The name of the RPF table
Last msdp Enabled	The time the last MSDP was triggered

## status

### Syntax

**status** [**detail**] [*family*]

### Context

[\[Tree\]](#) (show>router>pim status)

### Full Context

show router pim status

## Description

This command displays PIM status. The Oper Status reflects the combined operational status of IPv4 or IPv6 PIM protocol status. If both are down, then Oper Status is reflected as down. If IPv4 or IPv6 reflects up, the Oper Status reflects up.

If PIM is not enabled, the following message appears:

```
A:NYC# show router pim status
MINOR: CLI PIM is not configured.
A:NYC#
```

## Parameters

### detail

Displays detailed status information.

### family

Displays status information for the specified family.

**Values** ipv4, ipv6

## Platforms

All

## Output

The following output is an example of a PIM status configuration. [Table 556: PIM Status Output Fields](#) provides PIM status output field descriptions.

### Output Example

```
A:dut-d# show router pim status
=====
PIM Status ipv4
=====
Admin State                : Up
Oper State                  : Up
IPv4 Admin State           : Up
IPv4 Oper State             : Up
BSR State                   : Accept Any
Elected BSR
  Address                   : None
  Expiry Time               : N/A
  Priority                   : N/A
  Hash Mask Length          : 30
  Up Time                   : N/A
  RPF Intf towards E-BSR   : N/A
Candidate BSR
  Admin State               : Down
  Oper State                 : Down
  Address                   : None
  Priority                   : 0
  Hash Mask Length          : 30
Candidate RP
  Admin State               : Down
  Oper State                 : Down
  Address                   : 0.0.0.0
  Priority                   : 192
```

```

    Holdtime                : 150
    Auto-RP                 : Disabled
    Multicast-Fast-Failover : Disabled
    SSM-Default-Range      : Enabled
    SSM-Assert-Comp-Mode   : Disabled
    SSM-Group-Range
    None
    MC-ECMP-Hashing        : Disabled
    MC-ECMP-Hashing-Rebalance : Disabled
    Enable-MDT-SPT        : Disabled
    Policy                  : None
    RPF Table               : rtable-u
    Non-DR-Attract-Traffic : Disabled
    Rpf-Vector              : None
    ESM                     : Disabled
    SSM S,G Scaling (upto 256K) : Enabled (fabric optimization off)
    =====
A:dut-d#
    
```

Table 556: PIM Status Output Fields

Label	Description
Admin State	The administrative status of PIM.
Oper State	The current operating state of this PIM protocol instance.
BSR State	The state of the router with respect to the Bootstrap mechanism.
Address	The address of the elected Bootstrap router.
Expiry Time	The time remaining before the router sends the next Bootstrap message.
Priority	The priority of the elected Bootstrap router. The higher the value, the higher the priority.
Hash Mask Length	The hash mask length of the Bootstrap router.
Up Time	The time since the current E-BSR became the Bootstrap router.
RPF Intf towards	The RPF interface towards the elected BSR. The value is zero if there is no elected BSR in the network.
Address	The address of the candidate BSR OS.
Expiry Time	The time remaining before the router sends the next Bootstrap message.
Auto-RP	Displays if auto-RP functionality is enabled or disabled.
Priority	The priority of the Bootstrap router. The higher the value, the higher the priority.
Hash Mask Length	The hash mask length of the candidate Bootstrap router.
Up Time	The time since becoming the Bootstrap router.



Label	Description
Admin State	The administrative status of CRP.
Oper State	The current operating state of the C-RP mechanism.
Address	The local RP address.
Priority	The CRP's priority for becoming a rendezvous point (RP). A 0 value is the highest priority.
Holdtime	The hold time of the candidate RP. It is used by the Bootstrap router to time out the RP entries if it does not listen to another CRP advertisement within the holdtime period.
Policy	The PIM policies for a particular PIM instance.
Default Group	The default core group address.
RPF Table	The route table used for RPF check.
MC-ECMP-Hashing	Displays whether hash-based multicast balancing of traffic over ECMP links is enabled or disabled.
SSM S,G Scaling (up to 256K)	The status of PIM SSM scaling.

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>p2mp-sr-tree status)

### Full Context

show router p2mp-sr-tree status

### Description

This command displays P2MP SR tree status information.

### Platforms

All

### Output

The following output is an example of P2MP SR tree status information.

## Output Example

```
A:swsim103>show>router>p2mp-sr-tree# status
=====
P2MP-SR-TREE Status
=====
Admin Status      : Up           Oper Status      : Up
Reserved Lbl Blk : treeSID
=====
```

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>li status)

### Full Context

show li status

### Description

This command displays LI status information.

### Platforms

All

### Output

The following output is an example of information about the LI status.

### Output Example

```
*A:sim138# show li status
=====
Lawful Intercept Status Information
=====
LI Booted Config Status      : fail
LI Local Save Allowed       : yes
Separate LI administration   : no
Last LI Config Save Time    : N/A
Last Config Save Result     : none
Changes Since Last Save     : yes
Last LI Config Modified Time : 2008/01/11 10:24:30
=====
*A:sim138#
```

## status

### Syntax

status

### Context

[\[Tree\]](#) (show>cflowd status)

### Full Context

show cflowd status

### Description

This command displays basic information regarding the administrative and operational status of cflowd.

### Platforms

All

### Output

The following output is an example of cflowd status information, and [Table 557: Show cflowd Status Fields](#) describes the output fields.

### Output Example

```
*A:Dut-C>config>cflowd# /show cflowd status
=====
Cflowd Status
=====
Cflowd Admin Status   : Enabled
Cflowd Oper Status    : Enabled
Cflowd Export Mode    : Automatic
Active Flow Timeout   : 30 minutes
Inactive Flow Timeout : 10 seconds
Template Retransmit   : 600 seconds
Cache Size            : 65536 entries
Overflow              : 1%
Aggregation Summary  : (Not Specified)
VRtr If Index Context: global
Analyze GRE          : [Enabled | Disabled]
Analyze L2TPv2       : [Enabled | Disabled]
Analyze IPV4overV6   : [Enabled | Disabled]
Active Flows         : 0
Dropped Flows        : 0
Total Pkts Rcvd      : 2
Total Pkts Dropped   : 0
Overflow Events       : 0

                               Raw Flow Counts  Aggregate Flow Counts
Flows Created         : 2                      0
Flows Matched         : 0                      0
Flows Flushed         : 2                      0
=====
Sample Profile Info
=====
Profile Id           Sample Rate
```

```

-----
1                               1000
=====
Version Info
=====
Version Status                Sent                Open                Errors
-----
5 Disabled                    0                0                0
8 Disabled                    0                0                0
9 Disabled                    0                0                0
10 Enabled                    1                0                0
=====
    
```

Table 557: Show cflowd Status Fields

Label	Description
Cflowd Admin Status	The desired administrative state for this cflowd remote collector host
Cflowd Oper Status	The current operational status of this cflowd remote collector host
Active Flow Timeout	The maximum amount of time, in minutes, before an active flow will be exported; if an individual flow is active for this amount of time, the flow is exported and a new flow is created
Inactive Flow Timeout	Inactive flow timeout in seconds
Template Retransmit	The time in seconds before template definitions are sent
Cache Size	The maximum number of active flows to be maintained in the flow cache table
Overflow	The percentage number of flows to be flushed when the flow cache size has been exceeded
Analyze GRE	Displays whether cflowd analysis of the inner IP packet in a sampled GRE packet that is transiting the local router is enabled or disabled
Analyze L2TPv2	Displays whether cflowd looking for and analyzing the inner IP header of an L2TPv2 frame is enabled or disabled
Analyze IPV4overV6	Displays whether cflowd looking for and analyze the inner IPv4 header of IPv4overIPv6 frames that include MAP-E as well as DS-Lite and SAM traffic is enabled or disabled
Sample Rate	The rate at which traffic is sampled and forwarded for cflowd analysis: one (1) — all packets are analyzed 1000 (default) — every 1000th packet is analyzed
Active Flows	The current number of active flows being collected

Label	Description
Total Pkts Rcvd	The total number of packets sampled and forwarded for cflowd analysis
Total Pkts Dropped	The total number of packets dropped
Aggregation Info:	
Type	The type of data to be aggregated and to the collector
Status	enabled — specifies that the aggregation type is enabled
	disabled — specifies that the aggregation type is disabled
Sent	The number of packets with flow data sent to the associated collector
Open	This counter shows the number of partially filled packets which have some flow data but are not yet filled or have been timed out (60 seconds maximum)
Error	This counter increments when there was an error during exporting of the collector packet; the most common reason will be a UDP unreachable destination for the configured collector
Overflow events	The number of times the active cache overflowed
Dropped Flows	Total number of flows dropped due to cache overflow events

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router status)

### Full Context

show router status

### Description

This command displays the router status.

### Platforms

All

## Output

**Router Status Output** — The following output is an example of router status information.

There are multiple instances of OSPF. OSPF-0 is persistent. OSPF-1 through OSPF-31 are present when that specific OSPF instance is configured.

### Output Example

```
*A:Dut-C# show router status
=====
Router Status (Router: Base)
=====
-----
Admin State                                Oper State
-----
Router                                    Up
OSPFv2                                    Not configured
RIP                                        Not configured
RIP-NG                                     Not configured
ISIS-0                                     Up
MPLS                                       Up
RSVP                                       Up
LDP                                        Not configured
BGP                                        Not configured
IGMP                                       Not configured
MLD                                        Not configured
PIM                                        Not configured
PIMv4                                     Not configured
PIMv6                                     Not configured
OSPFv3                                    Not configured
MSDP                                       Not configured
BIER                                       Not configured

Max IPv4 Routes                           No Limit
Max IPv6 Routes                           No Limit
Total IPv4 Routes                         27
Total IPv6 Routes                         27
Max Multicast Routes                      No Limit
Total IPv4 Mcast Routes                   PIM not configured
Total IPv6 Mcast Routes                   PIM not configured
ECMP Max Routes                           64
Weighted ECMP                             Strict
Mcast Info Policy                         default
Triggered Policies                        No
Policy reference checks                   Disabled
LDP Shortcut                              Disabled
Single SFM Overload                      Disabled
IP Fast Reroute                          Disabled
Entropy Label                            Disabled
ICMP Tunneling                           Disabled
MSS adjust ISA group                     Not configured
Reassembly ISA-BB group                  Not configured
Ipv6 Nbr Reachab. time                   Not configured
IPv6 Nbr stale time (s)                  14400
Static Route Hold Down                   Disabled
TTL Propagate
  VPRN Local                             vc-only
  VPRN Transit                           vc-only
  Label Route Local                       none
  Label Route Transit                     none
  LSR Label Route                         none
LSP BFD Tail Sessions                    Disabled
Class Forwarding                         Disabled
Mtrace2 Tests                             Disabled
```

```

Leak Export          Disabled
Leak Export Limit   5
=====
*A:Dut-C#
    
```

**Router Status Output** —The following output is an example of router status information with Mtrace2 enabled.

**Output Example**

```

=====
Router Status (Router: Base)
=====
-----
Admin State                               Oper State
-----
Router                                    Up
OSPFv2                                    Not configured
RIP                                        Not configured
RIP-NG                                    Not configured
ISIS                                       Not configured
MPLS                                       Not configured
RSVP                                       Not configured
LDP                                        Not configured
BGP                                        Not configured
IGMP                                       Not configured
MLD                                        Not configured
PIM                                        Not configured
PIMv4                                      Not configured
PIMv6                                      Not configured
OSPFv3                                    Not configured
MSDP                                       Not configured

Max IPv4 Routes                           No Limit
Max IPv6 Routes                           No Limit
Total IPv4 Routes                          0
Total IPv6 Routes                          0
Max Multicast Routes                       No Limit
Total IPv4 Mcast Routes                    PIM not configured
Total IPv6 Mcast Routes                    PIM not configured
ECMP Max Routes                            ECMP not configured
Weighted ECMP                              Disabled
Mcast Info Policy                          default
Triggered Policies                         No
LDP Shortcut                               Disabled
Single SFM Overload                        Disabled
IP Fast Reroute                            Disabled
Entropy Label                              Disabled
ICMP Tunneling                             Disabled
MSS adjust ISA group                       Not configured
Reassembly ISA-BB group                    Not configured
Ipv6 Nbr Reachab. time                     Not configured
IPv6 Nbr stale time (s)                   14400
Static Route Hold Down                     Disabled
TTL Propagate
  VPRN Local                               vc-only
  VPRN Transit                             vc-only
  Label Route Local                         none
  Label Route Transit                       none
  LSR Label Route                           none
LSP BFD Tail Sessions                      Disabled
Class Forwarding                           Disabled
Mtrace2 Tests                              Enabled on UDP PORT 5001
-----
30
    
```

**7450 ESS Router Status Output**—The following output is an example of router status information for the 7450 ESS:

**Output Example**

```
*A:Performance# configure router ospf [1..31] shutdown
*A:Performance# show router status
=====
Router Status (Router: Base)
=====
-----
Admin State      Oper State
-----
Router           Up           Up
OSPFv2-0        Up           Up
OSPFv2-1        Down        Down
OSPFv2-2        Down        Down
OSPFv2-3        Down        Down
OSPFv2-4        Down        Down
OSPFv2-5        Down        Down
OSPFv2-6        Down        Down
OSPFv2-7        Down        Down
OSPFv2-8        Down        Down
OSPFv2-9        Down        Down
OSPFv2-10       Down        Down
OSPFv2-11       Down        Down
OSPFv2-12       Down        Down
OSPFv2-13       Down        Down
OSPFv2-14       Down        Down
OSPFv2-15       Down        Down
OSPFv2-16       Down        Down
OSPFv2-17       Down        Down
OSPFv2-18       Down        Down
OSPFv2-19       Down        Down
OSPFv2-20       Down        Down
OSPFv2-21       Down        Down
OSPFv2-22       Down        Down
OSPFv2-23       Down        Down
OSPFv2-24       Down        Down
OSPFv2-25       Down        Down
OSPFv2-26       Down        Down
OSPFv2-27       Down        Down
OSPFv2-28       Down        Down
OSPFv2-29       Down        Down
OSPFv2-30       Down        Down
OSPFv2-31       Down        Down
RIP              Up           Up
ISIS             Up           Up
MPLS             Not configured Not configured
RSVP             Not configured Not configured
LDP              Not configured Not configured
BGP              Up           Up
IGMP             Not configured Not configured
PIM              Not configured Not configured
OSPFv3           Not configured Not configured
MSDP             Not configured Not configured
Max Routes       No Limit
Total IPv4 Routes 244277
Max Multicast Routes No Limit
Total Multicast Routes PIM not configured
ECMP Max Routes 1
Single SFM Overload Enabled          hold-off 30 sec
Single SFM State  normal
Single SFM Start  004 19:03:39.680
```



```

Single SFM Interval      0d 00:16:06
Reassembly ISA-BB group Not configured
Ipv6 Nbr Reachab. time  Not configured      30
Triggered Policies      No
=====
*A:Performance#
    
```

**Router Status Output for 7750 SR and 7950 XRS**—The following output is an example of router status information for the 7750 SR and 7950 XRS:

**Output Example**

```

*A:Performance# configure router ospf [1..31] shutdown
*A:Performance# show router status
=====
Router Status (Router: Base)
=====
-----
Admin State      Oper State
-----
Router           Up           Up
OSPFv2-0        Up           Up
OSPFv2-1        Down        Down
OSPFv2-2        Down        Down
OSPFv2-3        Down        Down
OSPFv2-4        Down        Down
OSPFv2-5        Down        Down
OSPFv2-6        Down        Down
OSPFv2-7        Down        Down
OSPFv2-8        Down        Down
OSPFv2-9        Down        Down
OSPFv2-10       Down        Down
OSPFv2-11       Down        Down
OSPFv2-12       Down        Down
OSPFv2-13       Down        Down
OSPFv2-14       Down        Down
OSPFv2-15       Down        Down
OSPFv2-16       Down        Down
OSPFv2-17       Down        Down
OSPFv2-18       Down        Down
OSPFv2-19       Down        Down
OSPFv2-20       Down        Down
OSPFv2-21       Down        Down
OSPFv2-22       Down        Down
OSPFv2-23       Down        Down
OSPFv2-24       Down        Down
OSPFv2-25       Down        Down
OSPFv2-26       Down        Down
OSPFv2-27       Down        Down
OSPFv2-28       Down        Down
OSPFv2-29       Down        Down
OSPFv2-30       Down        Down
OSPFv2-31       Down        Down
RIP             Up           Up
ISIS            Up           Up
MPLS            Not configured Not configured
RSVP            Not configured Not configured
LDP             Not configured Not configured
BGP             Up           Up
IGMP            Not configured Not configured
PIM             Not configured Not configured
OSPFv3         Not configured Not configured
MSDP            Not configured Not configured
    
```

```

Max Routes                No Limit
Total IPv4 Routes         244277
Total IPv6 Routes         0
Max Multicast Routes      No Limit
Total Multicast Routes    PIM not configured
ECMP Max Routes           1
Single SFM Overload       Enabled             hold-off 30 sec
Single SFM State          normal
Single SFM Start          004 19:03:39.680
Single SFM Interval       0d 00:16:06
Reassembly ISA-BB group   Not configured
Ipv6 Nbr Reachab. time   Not configured           30
Triggered Policies        No
=====
*A:Performance#
    
```

**Class Forwarding**—The following output is an example for checking if class-based forwarding is enabled in the global router context.

**Output Example**

```

*A:Dut-B>show>router# show router "Base" status
=====
Router Status (Router: Base)
=====
-----
Admin State                Oper State
-----
Router                     Up                Up
OSPFv2                     Not configured   Not configured
RIP                         Not configured   Not configured
RIP-NG                      Not configured   Not configured
ISIS-0                      Up                Up
MPLS                        Up                Up
RSVP                        Up                Up
LDP                         Not configured   Not configured
BGP                         Up                Up
IGMP                       Not configured   Not configured
MLD                         Not configured   Not configured
PIM                         Not configured   Not configured
PIMv4                      Not configured   Not configured
PIMv6                      Not configured   Not configured
OSPFv3                     Not configured   Not configured
MSDP                       Not configured   Not configured
Max IPv4 Routes            No Limit
Max IPv6 Routes            No Limit
Total IPv4 Routes          262
Total IPv6 Routes          262
Max Multicast Routes        No Limit
Total IPv4 Mcast Routes    PIM not configured
Total IPv6 Mcast Routes    PIM not configured
ECMP Max Routes            64
Weighted ECMP              Disabled
Mcast Info Policy          default
Triggered Policies         No
LDP Shortcut               Disabled
Single SFM Overload        Disabled
IP Fast Reroute            Disabled
Entropy Label              Disabled
ICMP Tunneling             Enabled
MSS adjust ISA group        Not configured
Reassembly ISA-BB group    Not configured
Ipv6 Nbr Reachab. time     Not configured     30
IPv6 Nbr stale time (s)    14400
    
```

```

Static Route Hold Down Disabled
TTL Propagate
  VPRN Local vc-only
  VPRN Transit vc-only
  Label Route Local none
  Label Route Transit none
  LSR Label Route none
LSP BFD Tail Sessions Disabled
Class Forwarding Enabled
=====
    
```

**TTL Propagation and ICMP Tunneling**—The following output is an example of TTL propagation and ICMP tunneling configurations, first in base router and then in a VPRN service.

**Output Example**

```

*A:Performance# show router status
=====
Router Status (Router: Base)
=====
-----
Admin State      Oper State
-----
Router           Up           Up
OSPFv2-0         Up           Up
OSPFv2-2         Down        Down
RIP              Not configured Not configured
RIP-NG          Not configured Not configured
ISIS-0          Up           Up
ISIS-1024       Down        Down
MPLS            Down        Down
RSVP            Down        Down
LDP             Up           Down
BGP             Up           Down
IGMP
MLD
PIM
PIMv4
PIMv6
OSPFv3
MSDP

Max IPv4 Routes      No Limit
Max IPv6 Routes      No Limit
Total IPv4 Routes    0
Total IPv6 Routes    0
Max Multicast Routes No Limit
Total IPv4 Mcast Routes PIM not configured
Total IPv6 Mcast Routes PIM not configured
ECMP Max Routes      1
Mcast Info Policy    default
Triggered Policies   No
LDP Shortcut         Disabled
Single SFM Overload  Disabled
IP Fast Reroute      Disabled
ICMP Tunneling       Disabled
Reassembly ISA-BB group Not configured
ICMP Tunneling       Disabled
Ipv6 Nbr Reachab. time Not configured      30
IPv6 Nbr stale time (s) 14400
VPRN Local TTL Propagate vc-only
VPRN Transit TTL Propag* vc-only
Label Route Local TTL P* none
Label Route Transit TTL* none
    
```

```
LSR Label Route TTL Pro* none
=====
* indicates that the corresponding row element may have been truncated.
*B:bkvm31#
```

**VPRN TTL Propagation and ICMP Tunneling**—The following output is an example of TTL propagation and ICMP tunneling configurations in a VPRN service. The TTL propagation has been specified as local and all for VPRN service 5001.

**Output Example**

```
*A:Dut-A# configure service vprn 5001 ttl-propagate local all
*A:Dut-A# show router 5001 status

=====
Router Status (Service: 5001)
=====
```

	Admin State	Oper State
Router	Up	Up
OSPFv2	Not configured	Not configured
RIP	Not configured	Not configured
RIP-NG	Not configured	Not configured
ISIS	Not configured	Not configured
MPLS	Not configured	Not configured
RSVP	Not configured	Not configured
LDP	Not configured	Not configured
BGP	Not configured	Not configured
IGMP	Not configured	Not configured
MLD	Not configured	Not configured
PIM	Not configured	Not configured
PIMv4	Not configured	Not configured
PIMv6	Not configured	Not configured
OSPFv3	Not configured	Not configured
MSDP	Not configured	Not configured
Max IPv4 Routes	No Limit	
Max IPv6 Routes	No Limit	
Total IPv4 Routes	2	
Total IPv6 Routes	2	
Max Multicast Routes	No Limit	
Total IPv4 Mcast Routes	PIM not configured	
Total IPv6 Mcast Routes	PIM not configured	
ECMP Max Routes	1	
Mcast Info Policy	default	
Triggered Policies	No	
GRT Lookup	Disabled	
Local Management	Disabled	
Single SFM Overload	Disabled	
IP Fast Reroute	Disabled	
ICMP Tunneling	Disabled	
Reassembly ISA-BB group	Not configured	
ICMP Tunneling	Disabled	
Ipv6 Nbr Reachab. time	Not configured	30
VPRN Local TTL Propagate	all	
VPRN Transit TTL Propag*	inherit (vc-only)	

```
=====
* indicates that the corresponding row element may have been truncated.
*A:Dut-A#
```

## status

### Syntax

status

### Context

[\[Tree\]](#) (show>router>rib-api status)

### Full Context

show router rib-api status

### Description

This command displays RIB-API status information.

### Platforms

All

### Output

The following output is an example of RIB-API status information.

### Output Example

```
*A:Dut-A# /show router rib-api status
=====
Rib-Api Status
=====
MPLS Admin      Reserved Label Block Name
Status
-----
Up              ribapi
=====
```

## status

### Syntax

status

### Context

[\[Tree\]](#) (clear>application-assurance>group status)

### Full Context

clear application-assurance group status

### Description

This command clears application assurance system statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## status

## Syntax

status

## Context

[\[Tree\]](#) (show>router>isis status)

## Full Context

show router isis status

## Description

This command displays the IS-IS status information.

## Platforms

All

## Output

The following output is an example of the IS-IS status that shows Unreachable Prefix Announcement (UPA) configuration properties, and [Table 558: Output fields: IS-IS status](#) describes the output fields.

### Output example

```
A:node-2# show router isis status
=====
Rtr Base ISIS Instance 0 Status
=====
ISIS Cfg System Id       : 0000.0000.0000
...
Micro loop avoidance     : Disabled fib-delay 15
UPA Received Processing  : Disabled
UPA Lifetime             : 180
UPA Metric                : 4261412865
UPA Max Number Advertised : 32
=====
```

The following output is an example of the IS-IS status, and [Table 558: Output fields: IS-IS status](#) describes the output fields.

### Output example

```
A:node-2# show router isis status
=====
Rtr Base ISIS Instance 0 Status
=====
ISIS Cfg System Id       : 0000.0000.0000
ISIS Oper System Id     : 0100.2000.1001
ISIS Cfg Router Id      : 0.0.0.0
=====
```

```
ISIS Oper Router Id      : 10.20.1.1
ISIS Cfg IPv6 Router Id  : ::
ISIS Oper IPv6 Router Id : ::
ASN                      : 0
Admin State              : Up
Oper State               : Up
Ipv4 Routing             : Enabled
Ipv6 Routing            : Disabled
Mcast Ipv4 Routing      : Enabled, Native
Mcast Ipv6 Routing      : Disabled
Last Enabled            : 12/09/2022 18:43:43
Level Capability         : L1L2
Authentication Check    : True
Auth Keychain           : Disabled
Authentication Type     : None
CSNP-Authentication     : Enabled
HELLO-Authentication    : Enabled
PSNP-Authentication    : Enabled
Traffic Engineering     : Disabled
Oper IPv6 TE Router Id  : ::
Graceful Restart        : Disabled
GR Helper Mode          : Disabled
Overload-On-Boot Timeout : 0
Overload Max-Metric     : False
Overload-On-Boot Max-Metric : False
Overload Include Locators : Disabled
Ovl Export Interlevel   : Disabled
Ovl Export External     : Disabled
Ovl FIB Error Notify Only : Disabled
Ovl FIB Error Retry     : N.A.
LSP Lifetime            : 1200
LSP Min Remaining Lifetime : N.A.
LSP Refresh Half Interval : 600 (Config) 600 (Oper)
LSP Wait (ms)          : 5000 (Max) 10 (Initial) 1000 (Second)
LSP MTU Size           : 1492 (Config)
L1 LSP MTU Size        : 1492 (Config) 1492 (Oper)
L2 LSP MTU Size        : 1492 (Config) 1492 (Oper)
L1 MAX LSP MTU Size    : 9187
L2 MAX LSP MTU Size    : 1497
Adjacency Check        : loose
L1 Auth Keychain       : Disabled
L1 Auth Type           : none
L1 CSNP-Authentication : Enabled
L1 HELLO-Authentication : Enabled
L1 PSNP-Authentication : Enabled
L1 Preference          : 15
L1 Ext. Preference     : 160
L1 Wide Metrics        : Disabled
L1 LSDB Overload       : Disabled
L1 LSPs                : 1
L1 Default Metric      : 10
L1 IPv6 Def Metric     : 10
L1 Mcast IPv4 Def Metric : 10
L1 Mcast IPv6 Def Metric : 10
L1 Adv Router Cap      : Enabled
L1 Bier Template       : None, Disabled
L1 Total Exp Routes    : 0
All-L1-MacAddr (Cfg)   : 01:80:c2:00:00:14
Last SPF               : 12/09/2022 18:43:43
SPF Wait (ms)         : 10000 (Max) 1000 (Initial) 1000 (Second)
Multi-topology         : Disabled
IPv6-Unicast MT2       : Disabled
IPv4-Multicast MT3     : Disabled
IPv6-Multicast MT4     : Disabled
```

```

Area Addresses : 30.31
Standard Multi-Instance : Disabled
IID TLV : Disabled
Prefix Attributes TLV : Disabled
L2 Auth Keychain : Disabled
L2 Auth Type : none
L2 CSNP-Authentication : Enabled
L2 HELLO-Authentication : Enabled
L2 PSNP-Authentication : Enabled
L2 Preference : 18
L2 Ext. Preference : 165
L2 Wide Metrics : Enabled
L2 LSDB Overload : Disabled
L2 LSPs : 6
L2 Default Metric : 10
L2 IPv6 Def Metric : 10
L2 Mcast IPv4 Def Metric : 10
L2 Mcast IPv6 Def Metric : 10
L2 Adv Router Cap : Enabled
L2 Bier Template : None, Disabled
L2 Total Exp Routes : 0
All-L2-MacAddr (Cfg) : 01:80:c2:00:00:15
Export Policies : None
Import Policies : None
LFA Policies : None
Multicast Import : None
Advertise-Passive-Only : Disabled
Ignore Attached Bit : Disabled
Suppress Attached Bit : Disabled
Default Route Tag : None
Rib Prio List High : None
Rib Prio Tag High : None
Ldp Sync Admin State : Up
LDP-over-RSVP : Disabled
IGP-Shortcut : Disabled
IGP SC Allow SR over SR-TE : Disabled
IPv4 IGP SC Tunn-Nhop : Res-Disabled
IPv6 IGP SC Tunn-Nhop : Res-Disabled
SRv4 IGP SC Tunn-Nhop : Res-Disabled
SRv6 IGP SC Tunn-Nhop : Res-Disabled
Advertise-Tunnel-Link : Disabled
Export Limit : 0
Exp Lmt Log Percent : 0
Loopfree-Alternate : Disabled
Remote-LFA : Disabled
Max PQ Cost : 4261412864
Remote-LFA (node-protect) : Disabled
Max PQ nodes (node-protect) : 16
Augment-route-table : Disabled
TI-LFA : Disabled
Max SR FRR Labels : 2
TI-LFA (node-protect) : Disabled
L1 LFA : Included
L2 LFA : Included
Advertise Router Cap : Disabled
Hello Padding : Disabled
L1 Hello Padding : Disabled
L2 Hello Padding : Disabled
Ignore Lsp Errors : Disabled
Ignore Narrow Metric : Disabled
Reference Bandwidth : 0
Ucast Import Disable : None
Segment Routing : Disabled
Segment Routing MT2 : Disabled
    
```



```

Flex Algo                : Down
Mapping Server           : Disabled
Purge Originator Id     : Disabled
Class Based Forwarding  : Disabled
Entropy Label           : Enabled
Override ELC            : Enabled
Micro loop avoidance    : Disabled fib-delay 15
UPA Received Processing  : Disabled
UPA Lifetime            : 180
UPA Metric               : 4261412865
UPA Max Number Advertised : 32
=====
    
```

The following output is an example of the LFA policies configured in the **configure router isis**, and [Table 558: Output fields: IS-IS status](#) describes the output fields.

### Output example

```

A:node-2# show router isis status
=====
Rtr Base ISIS Instance 0 Status
=====
ISIS Cfg System Id      : 0000.C0A8.0001
ISIS Oper System Id    : 0100.C0A8.1001
ISIS Cfg Router Id     : 0.0.0.0
ISIS Oper Router Id    : 10.20.1.3
ISIS Cfg IPv6 Router Id : ::
ISIS Oper IPv6 Router Id : ::
ASN                    : 0
Admin State            : Up
Oper State             : Up
Ipv4 Routing           : Enabled
Ipv6 Routing           : Disabled
Mcast Ipv4 Routing     : Enabled, Native
Mcast Ipv6 Routing     : Disabled
Last Enabled           : 12/09/2022 18:43:43
Level Capability       : L1
Authentication Check   : True
Auth Keychain          : Disabled
Authentication Type    : None
CSNP-Authentication    : Enabled
HELLO-Authentication  : Enabled
PSNP-Authentication    : Enabled
Traffic Engineering    : Disabled
Oper IPv6 TE Router Id : ::
Graceful Restart       : Disabled
GR Helper Mode         : Disabled
Overload-On-Boot Timeout : 0
Overload Max-Metric    : False
Overload-On-Boot Max-Metric : False
Overload Include Locators : Disabled
Ovl Export Interlevel  : Disabled
Ovl Export External    : Disabled
Ovl FIB Error Notify Only : Disabled
Ovl FIB Error Retry    : N.A.
LSP Lifetime           : 1200
LSP Min Remaining Lifetime : N.A.
LSP Refresh Half Interval : 600 (Config) 600 (Oper)
LSP Wait (ms)         : 5 (Max) 0 (Initial) 1 (Second)
LSP MTU Size          : 1492 (Config)
L1 LSP MTU Size       : 1492 (Config) 1492 (Oper)
L2 LSP MTU Size       : 1492 (Config) 1492 (Oper)
L1 MAX LSP MTU Size   : 9187
    
```

```
L2 MAX LSP MTU Size : 1497
Adjacency Check : loose
L1 Auth Keychain : Disabled
L1 Auth Type : none
L1 CSNP-Authentication : Enabled
L1 HELLO-Authentication : Enabled
L1 PSNP-Authentication : Enabled
L1 Preference : 15
L1 Ext. Preference : 160
L1 Wide Metrics : Enabled
L1 LSDB Overload : Disabled
L1 LSPs : 51
L1 Default Metric : 10
L1 IPv6 Def Metric : 10
L1 Mcast IPv4 Def Metric : 10
L1 Mcast IPv6 Def Metric : 10
L1 Adv Router Cap : Enabled
L1 Bier Template : None, Disabled
L1 Total Exp Routes : 1
All-L1-MacAddr (Cfg) : 01:80:c2:00:00:14
Last SPF : 12/09/2022 18:43:43
SPF Wait (ms) : 10 sec (Max) 1000 ms (Initial) 1000 ms (Second)
Multi-topology : Disabled
IPv6-Unicast MT2 : Disabled
IPv4-Multicast MT3 : Disabled
IPv6-Multicast MT4 : Disabled
Area Addresses : 49.0001
Standard Multi-Instance : Disabled
IID TLV : Disabled
Prefix Attributes TLV : Disabled
L2 Auth Keychain : Disabled
L2 Auth Type : none
L2 CSNP-Authentication : Enabled
L2 HELLO-Authentication : Enabled
L2 PSNP-Authentication : Enabled
L2 Preference : 18
L2 Ext. Preference : 165
L2 Wide Metrics : Disabled
L2 LSDB Overload : Disabled
L2 LSPs : 0
L2 Default Metric : 10
L2 IPv6 Def Metric : 10
L2 Mcast IPv4 Def Metric : 10
L2 Mcast IPv6 Def Metric : 10
L2 Adv Router Cap : Enabled
L2 Bier Template : None, Disabled
L2 Total Exp Routes : 0
All-L2-MacAddr (Cfg) : 01:80:c2:00:00:15
Export Policies : static
Import Policies : None
LFA Policies : pol1
: pol2
: pol3
: pol4
: pol5
Multicast Import : None
Advertise-Passive-Only : Disabled
Ignore Attached Bit : Disabled
Suppress Attached Bit : Disabled
Default Route Tag : None
Rib Prio List High : None
Rib Prio Tag High : None
Ldp Sync Admin State : Up
LDP-over-RSVP : Disabled
```

```

IGP-Shortcut : Disabled
IGP SC Allow SR over SR-TE : Disabled
IPv4 IGP SC Tunn-Nhop : Res-Disabled
IPv6 IGP SC Tunn-Nhop : Res-Disabled
SRv4 IGP SC Tunn-Nhop : Res-Disabled
SRv6 IGP SC Tunn-Nhop : Res-Disabled
Advertise-Tunnel-Link : Disabled
Export Limit : 0
Exp Lmt Log Percent : 0
Loopfree-Alternate : Enabled
Remote-LFA : Disabled
Max PQ Cost : 4261412864
Remote-LFA (node-protect) : Disabled
Max PQ nodes (node-protect) : 16
Augment-route-table : Disabled
TI-LFA : Disabled
Max SR FRR Labels : 2
TI-LFA (node-protect) : Disabled
L1 LFA : Included
L2 LFA : Included
Advertise Router Cap : Disabled
Hello Padding : Disabled
L1 Hello Padding : Disabled
L2 Hello Padding : Disabled
Ignore Lsp Errors : Disabled
Ignore Narrow Metric : Disabled
Reference Bandwidth : 0
Ucast Import Disable : None
Segment Routing : Disabled
Segment Routing MT2 : Disabled
Flex Algo : Down
Mapping Server : Disabled
Purge Originator Id : Disabled
Class Based Forwarding : Disabled
Entropy Label : Enabled
Override ELC : Enabled
Micro loop avoidance : Disabled fib-delay 15
UPA Received Processing : Disabled
UPA Lifetime : 180
UPA Metric : 4261412865
UPA Max Number Advertised : 32
=====
    
```

The following output is an example of the detailed LFA policies configured in the **configure router isis** context.

### Output example

```

A:node-2# show router isis interface "DUTC_TO_DUTE.1.0" detail
=====
Rtr Base ISIS Instance 0 Interfaces (detail)
=====
-----
Interface      : DUTC_TO_DUTE.1.0          Level Capability: L1L2
Oper State     : Up                    Admin State      : Up
Auth Keychain  : Disabled
Auth Type      : None                    Auth State      : Enabled
Circuit Id     : 3                      Retransmit Int. : 5
Type           : Broadcast              LSP Pacing Int. : 100
Oper Type      : Broadcast              CSNP Int.       : 10
Mesh Group     : Inactive                BER             : none
LFA NH Template : "template1"                Bfd Enabled     : No
Topology      : IPv4-Unicast, IPv6-Unicast, IPv4-Multicast, IPv6-Multicast
    
```

```

Te Metric      : 0
Admin Groups   : None
Ldp Sync      : outOfService
Ldp Timer State : Disabled
Route Tag     : None

Level         : 1
Desg. IS      : Dut-C
Auth Keychain : Disabled
Auth Type     : None
Hello Timer   : 9
Priority      : 64
Passive       : No
SD-Offset    : 0
Hello Mult.   : 3

Level         : 2
Desg. IS      : Dut-C
Auth Keychain : Disabled
Auth Type     : None
Hello Timer   : 9
Priority      : 64
Passive       : No
SD-Offset    : 0
Hello Mult.   : 3

Te State      : Down
Ldp Sync Wait : Disabled
Ldp Tm Left   : 0
LFA           : Included

Adjacencies   : 0

Metric        : 10
IPv6-Ucast-Met : 10
IPv6-Mcast-Met : 10
IPv4-Mcast-Met : 10
SF-Offset     : 0

Adjacencies   : 0

Metric        : 10
IPv6-Ucast-Met : 10
IPv6-Mcast-Met : 10
IPv4-Mcast-Met : 10
SF-Offset     : 0
    
```

=====

The following output is an example of the output with flexible algorithms enabled, and [Table 558: Output fields: IS-IS status](#) describes the output fields.

### Output Example

```

A:node-2# show router isis 0 status
=====
Rtr Base ISIS Instance 0 Status
=====
ISIS Cfg System Id       : 4900.0000.0001
ISIS Oper System Id     : 4900.0000.0001
ISIS Cfg Router Id      : 10.20.1.1
ISIS Oper Router Id     : 10.20.1.1
ISIS Cfg IPv6 Router Id : ::
ISIS Oper IPv6 Router Id : ::
ASN                      : 0
Admin State              : Up
Oper State               : Up
Ipv4 Routing             : Enabled
Ipv6 Routing             : Disabled
Mcast Ipv4 Routing      : Enabled, Native
Mcast Ipv6 Routing      : Disabled
Last Enabled             : 05/28/2020 13:17:48
Level Capability         : L1L2
Authentication Check    : True
Auth Keychain            : MyKeyChain
Authentication Type     : None
CSNP-Authentication     : Enabled
HELLO-Authentication    : Enabled
PSNP-Authentication     : Enabled
Traffic Engineering     : Disabled
Oper IPv6 TE Router Id  : ::
Graceful Restart        : Disabled
GR Helper Mode          : Disabled
Overload-On-Boot Timeout : 0
    
```

```
Overload Max-Metric : False
Overload-On-Boot Max-Metric : False
Overload Include Locators : Disabled
Ovl Export Interlevel : Disabled
Ovl Export External : Disabled
Ovl FIB Error Notify Only : Disabled
Ovl FIB Error Retry : N.A.
LSP Lifetime : 1200
LSP Min Remaining Lifetime : N.A.
LSP Refresh Half Interval : 600 (Config) 600 (Oper)
LSP Wait (ms) : 5000 (Max) 10 (Initial) 1000 (Second)
LSP MTU Size : 1492 (Config)
L1 LSP MTU Size : 1492 (Config) 1492 (Oper)
L2 LSP MTU Size : 1492 (Config) 1492 (Oper)
L1 MAX LSP MTU Size : 9775
L2 MAX LSP MTU Size : 1561
Adjacency Check : loose
L1 Auth Keychain : Disabled
L1 Auth Type : none
L1 CSNP-Authentication : Enabled
L1 HELLO-Authentication : Enabled
L1 PSNP-Authentication : Enabled
L1 Preference : 15
L1 Ext. Preference : 160
L1 Wide Metrics : Enabled
L1 LSDB Overload : Disabled
L1 LSPs : 1
L1 Default Metric : 10
L1 IPv6 Def Metric : 10
L1 Mcast IPv4 Def Metric : 10
L1 Mcast IPv6 Def Metric : 10
L1 Adv Router Cap : Enabled
L1 Bier Template : None, Disabled
L1 Total Exp Routes : 0
All-L1-MacAddr (Cfg) : 01:80:c2:00:00:14
Last SPF : 06/03/2020 10:27:06
SPF Wait (ms) : 10000 (Max) 1000 (Initial) 1000 (Second)
Multi-topology : Disabled
IPv6-Unicast MT2 : Disabled
IPv4-Multicast MT3 : Disabled
IPv6-Multicast MT4 : Disabled
Area Addresses : 49.0001
Standard Multi-Instance : Disabled
IID TLV : Disabled
Prefix Attributes TLV : Disabled
L2 Auth Keychain : Disabled
L2 Auth Type : none
L2 CSNP-Authentication : Enabled
L2 HELLO-Authentication : Enabled
L2 PSNP-Authentication : Enabled
L2 Preference : 18
L2 Ext. Preference : 165
L2 Wide Metrics : Enabled
L2 LSDB Overload : Disabled
L2 LSPs : 3
L2 Default Metric : 10
L2 IPv6 Def Metric : 10
L2 Mcast IPv4 Def Metric : 10
L2 Mcast IPv6 Def Metric : 10
L2 Adv Router Cap : Enabled
L2 Bier Template : None, Disabled
L2 Total Exp Routes : 0
All-L2-MacAddr (Cfg) : 01:80:c2:00:00:15
Export Policies : None
```

```

Import Policies           : None
LFA Policies             : None
Multicast Import         : None
Advertise-Passive-Only   : Disabled
Ignore Attached Bit      : Disabled
Suppress Attached Bit    : Disabled
Default Route Tag        : None
Rib Prio List High       : None
Rib Prio Tag High        : None
Ldp Sync Admin State     : Up
LDP-over-RSVP            : Disabled
IGP-Shortcut             : Disabled
IPv4 IGP SC Tunn-Nhop    : Res-Disabled
IPv6 IGP SC Tunn-Nhop    : Res-Disabled
SRv4 IGP SC Tunn-Nhop    : Res-Disabled
SRv6 IGP SC Tunn-Nhop    : Res-Disabled
Advertise-Tunnel-Link    : Disabled
Export Limit             : 0
Exp Lmt Log Percent      : 0
Loopfree-Alternate       : Disabled
Remote-LFA               : Disabled
Max PQ Cost              : 4261412864
Remote-LFA (node-protect) : Disabled
Max PQ nodes (node-protect) : 16
Augment-route-table      : Disabled
TI-LFA                  : Disabled
Max SR FRR Labels        : 2
TI-LFA (node-protect)    : Disabled
L1 LFA                  : Included
L2 LFA                  : Included
Advertise Router Cap     : Area
Hello Padding            : Disabled
L1 Hello Padding         : Disabled
L2 Hello Padding         : Disabled
Ignore Lsp Errors        : Disabled
Ignore Narrow Metric     : Disabled
Reference Bandwidth      : 0
Ucast Import Disable     : None
Segment Routing          : Up
Segment Routing MT2      : Disabled
Flex Algo                : Up
Mapping Server           : Down
Purge Originator Id      : Disabled
Class Based Forwarding   : Disabled
Entropy Label            : Enabled
Override ELC             : Disabled
Micro loop avoidance     : Disabled fib-delay 15
UPA Received Processing   : Disabled
UPA Lifetime             : 180
UPA Metric               : 4261412865
UPA Max Number Advertised : 32
=====
    
```

Table 558: Output fields: IS-IS status

Label	Description
ISIS Cfg System Id	Displays the configured IS-IS system ID
ISIS Oper System Id	Displays the operational IS-IS system ID

Label	Description
ISIS Cfg Router Id	Displays the configured IS-IS router ID
ISIS Oper Router Id	Displays the operational IS-IS router ID
ISIS Cfg IPv6 Router Id	Displays the configured IS-IS IPv6 router ID
ISIS Oper IPv6 Router Id	Displays the operational IS-IS IPv6 router ID
ASN	Displays the Autonomous System Number (ASN) the IGP uses when the IS-IS Traffic Engineering Database (TEDB) export is enabled. The ASN value represents either the ASN from the confederation AS, or the router AS if confederations are not configured.
Admin State Oper State	Displays one of the following: <ul style="list-style-type: none"> <li>• Up — IS-IS is administratively up</li> <li>• Down — IS-IS is administratively down</li> </ul>
Ipv4 Routing	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — IPv4 routing is enabled</li> <li>• Disabled — IPv4 routing is disabled</li> </ul>
Ipv6 Routing	Displays one of the following: <ul style="list-style-type: none"> <li>• Disabled — IPv6 routing is disabled</li> <li>• Enabled, Native — IPv6 routing is enabled</li> <li>• Enabled, Multi-topology — Multi-topology TLVs for IPv6 routing is enabled</li> </ul>
Mcast Ipv4 Routing	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Multicast is enabled</li> <li>• Disabled — Multicast is disabled</li> <li>• Native — Multicast in IS-IS MT0 is enabled</li> <li>• Multi-topology — Multicast in IS-IS MT3 (IPv4) is enabled</li> </ul>
Mcast Ipv6 Routing	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Multicast is enabled</li> <li>• Disabled — Multicast is disabled</li> <li>• Native — Multicast in IS-IS MT0 is enabled</li> <li>• Multi-topology — Multicast in IS-IS MT4 (IPv6) is enabled</li> </ul>
Last Enabled	Displays the date and time when IS-IS was last enabled in the router

Label	Description
Level Capability	Displays the routing level for the IS-IS routing process
Authentication Check	Displays one of the following: <ul style="list-style-type: none"> <li>• True — All IS-IS mismatched protocol packets are rejected</li> <li>• False — Authentication is performed on received IS-IS protocol packets but mismatched packets are not rejected</li> </ul>
Auth Keychain	Displays the authentication keychain name used by IS-IS for the session when enabled
Authentication Type	Displays the authentication method used to verify the authenticity of packets sent by neighboring routers on an IS-IS interface
CSNP-Authentication	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Complete Sequence Number Packet (CSNP) authentication is enabled</li> <li>• Disabled — CSNP authentication is disabled</li> </ul>
HELLO-Authentication	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Hello packet authentication is enabled</li> <li>• Disabled — Hello packet authentication is disabled</li> </ul>
PSNP-Authentication	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Partial Sequence Number Packet (PSNP) authentication is enabled</li> <li>• Disabled — PSNP authentication is disabled</li> </ul>
Traffic Engineering	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — TE is enabled for the router</li> <li>• Disabled — TE is disabled so that TE metrics are not generated and are ignored when received by this node</li> </ul>
Oper IPv6 TE Router Id	Displays the value of the IS-IS IPv6 TE Router ID TLV (TLV 140) defined by RFC 6119. The IPv6 TE Router ID is configured using the <b>configure router ipv6-te-router-id interface name</b> command. By default, the system IPv6 address is used when IPv6 TE is enabled.
Graceful Restart	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Graceful restart is enabled for this instance of IS-IS on the router</li> <li>• Disabled — Graceful restart capability is disabled for this instance of IS-IS on the router</li> </ul>
GR Helper Mode	Displays if GR helper mode is configured



Label	Description
Overload-On-Boot Timeout	Displays if the overload-on-boot timeout is configured
Overload Max-Metric	Displays if overload max metric is configured
Overload-On-Boot Max-Metric	Displays if the overload-on-boot maximum metric is configured
Overload Include Locators	Displays if overload include locators is enabled
Ovl Export Interlevel	Displays if overload export interlevel is configured
Ovl Export External	Displays if overload export external is configured
Ovl FIB Error Notify Only	Displays if overload notification only is configured: <ul style="list-style-type: none"> <li>• Disabled — Indicates the router will go into overload mode when the overload condition is reached.</li> <li>• Enabled — Indicates the router will not go into overload mode when the overload condition is reached and instead will only advertise a notification.</li> </ul>
Ovl FIB Error Retry	Displays the amount of time in seconds until the router periodically retries to program the FIB during the gracious overload condition
LSP Lifetime	Displays the LSP lifetime value
LSP Min Remaining Lifetime	Displays the LSP minimum remaining lifetime information
LSP Refresh Half Interval	Displays the LSP refresh half interval
LSP Wait (ms)	Displays the max, initial, and initial wait times
LSP MTU Size	Displays the LSP Maximum Transmission Unit (MTU) size
L1 LSP MTU Size	Displays the level 1 LSP MTU size
L2 LSP MTU Size	Displays the level 2 LSP MTU size
L1 MAX LSP MTU Size	Displays the level 1 maximum LSP MTU size
L2 MAX LSP MTU Size	Displays the level 2 maximum LSP MTU size
Adjacency Check	Displays the adjacency check configuration
L1 Auth Keychain or L2 Auth Keychain	Displays if authentication keychain is enabled

Label	Description
L1 Auth Type or L2 Auth Type	Displays if the authentication type is configured
L1 CNSP-Authentication or L2 CNSP-Authentication	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Complete Sequence Number Packet (CSNP) authentication is enabled</li> <li>• Disabled — CSNP authentication is disabled</li> </ul>
L1 HELLO-Authentication or L2 HELLO-Authentication	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Hello packet authentication is enabled</li> <li>• Disabled — Hello packet authentication is disabled</li> </ul>
L1 PSNP-Authentication or L2 PSNP-Authentication	Displays one of the following: <ul style="list-style-type: none"> <li>• Enabled — Partial Sequence Number Packet (PSNP) authentication is enabled</li> <li>• Disabled — PSNP authentication is disabled</li> </ul>
L1 Preference or L2 Preference	Displays the preference
L1 Ext. Preference or L2 Ext. Preference	Displays the external preference
L1 Wide Metrics or L2 Wide Metrics	Displays if the wide metrics features is enabled
L1 LSDB Overload or L2 LSDB Overload	Displays if the Link-State Database (LSDB) overload is enabled
L1 LSPs or L2 LSPs	Displays the number of LSPs
L1 Default Metric or L2 Default Metric	Displays the default metric
L1 IPv6 Def Metric or L2 IPv6 Def Metric	Displays the IPv6 default metric
L1 Mcast IPv4 Def Metric or L2 Mcast IPv4 Def Metric	Displays the multicast IPv4 default metric
L1 Mcast IPv6 Def Metric or L2 Mcast IPv6 Def Metric	Displays the multicast IPv6 default metric
L1 Adv Router Cap or L2 Adv Router Cap	Displays if the advanced router capacity is enabled for the level

Label	Description
L1 Bier Template or L2 Bier Template	Displays if the Bit Indexed Explicit Replication (BIER) template is enabled
L1 Total Exp Routes or L2 Total Exp Routes	Displays the total exp routes for the level
All-L1-Mac_Addr (Cfg) or All-L2-MacAddr (Cfg)	Displays the MAC addresses for the level
Last SPF	Displays the last shortest path first (SPF) calculation time
SPF Wait (ms)	Displays the SPF wait time before doing another calculation
Muti-topology	Displays if multi-topology is enabled
IPv6-Unicast MT2	Displays if IPv6 unicast MT2 is enabled
IPv4-Multicast MT3	Displays if IPv4 multicast MT3 is enabled
IPv6-Multicast MT4	Displays if IPv6 multicast MT4 is enabled
Area Addresses	Displays the area addresses
Standard Multi-Instance	Displays if a standard multi-instance is enabled
IID TLV	Displays if the Instance ID TLV is enabled
Prefix TLV	Displays if the Prefix Attributes TLV is enabled
Export Policies	Displays if there are export policies
Import Policies	Displays if there are import policies
LFA Policies	Displays if there are Loop-Free Alternate policies
Multicast Import	Displays if there is a multicast import
Advertise-Passive-Only	Displays if advertise passive only is enabled
Ignore Attached Bit	Displays if ignore attached bit is enabled
Suppress Attached Bit	Displays if suppress attached bit is enabled
Default Route Tag	Displays the default route tag if one exists
Rib Prio List High	Displays the Routing Information Base (RIB) high priority list
Rib Prio Tag High	Displays the RIB high priority tag

Label	Description
Ldp Sync Admin State	Displays if the IGP-LDP synchronization feature is enabled on all interfaces participating in the OSPF routing protocol
LDP-over-RSVP	Displays if LDP over RSVP is enabled
IGP-Shortcut	Displays if Interior Gateway Protocol (IGP) shortcuts are enabled
IPv4 IGP SC Tunn-Nhop	Displays if IPv4 IGP shortcut tunnel next hop is enabled
IPv6 IGP SC Tunn-Nhop	Displays the IPv6 IGP shortcut tunnel next hop is enabled
SRv4 IGP SC Tunn-Nhop	Displays if the SRv4 IGP shortcut tunnel next hop is enabled
SRv6 IGP SC Tunn-Nhop	Displays if the SRv6 IGP shortcut tunnel next hop is enabled
Advertise-Tunnel-Link	Displays if advertise tunnel link is enabled
Export Limit	Displays the export limit
Exp Lmt Log Percent	Displays the export limit log percentage
Loopfree-Alternate	Displays if Loop-Free Alternate (LFA) is enabled in this IS-IS instance
Remote-LFA	Displays if remote LFA is enabled
Max PQ Cost	Displays the maximum PQ cost
Remote-LFA (node-protect)	Displays if remote LFA is enabled
Max PQ Nodes (node-protect)	Displays the maximum PQ nodes
LFA NH Template	Displays if the LFA Next-Hop (NH) template is applied for the configured LFA policies
Augment-route-table	Displays if the augment route table feature is enabled
TI-LFA	Displays if Topology-Independent Loop-Free Alternate (TI-LFA) is enabled
Max SR FFR Labels	Displays the maximum Segment Routing Fast Reroute (SR FRR) labels
TI-LFA (node-protect)	Displays if TI-LFA node protect is enabled
L1 LFA	Displays if level 1 LFA is included

Label	Description
L2 LFA	Displays if level 2 LFA is included
Advertise Router Cap	Displays the advertise router capacity
Hello Padding L1 Hello Padding L2 Hello Padding	Displays if Hello padding is enabled
Ignore Lsp Errors	Displays if ignoring LSP errors is enabled
Ignore Narrow Metric	Displays if ignoring narrow metric is enabled
Reference Bandwidth	Displays the reference bandwidth
Ucast Import Disable	Displays the Ucast import disable configuration information
Segment Routing	Displays if Segment Routing is enabled
Segment Routing MT2	Displays if Segment Routing MT2 is enabled.
Flex Algo	Displays if Flexible Algorithms are up
Mapping Server	Displays if the mapping server is up
Purge Originator Id	Displays if purge originator ID is enabled
Class Based Forwarding	Displays if class based forwarding is enabled
Entropy Label	Displays if the entropy label is enabled
Override ELC	Displays if override ELC is enabled
Micro loop avoidance	Displays if micro-loop avoidance is enabled and the Forwarding Information Base (FIB) delay
UPA Received Processing	Displays if Unreachable Prefix Announcement (UPA) processing is enabled. When enabled, this allows processing of received UPAs from other routers. When disabled, received UPAs are handled briefly with normal IGP routes and ignored by the router.
UPA Lifetime	Displays the amount of time a UPA is advertised
UPA Metric	Displays the metric to an advertised UPA
UPA Max Number Advertised	Displays the maximum number of UPAs the router can advertise

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>ospf status)

[\[Tree\]](#) (show>router>ospf3 status)

### Full Context

show router ospf status

show router ospf3 status

### Description

Displays the general status of OSPF.

### Platforms

All

### Output

OSPF Status Output Fields

[Table 559: OSPF Status Output Fields](#) describes the command output fields for OSPF status.

*Table 559: OSPF Status Output Fields*

Label	Description
OSPF Router Id	A 32-bit integer uniquely identifying the router in the Autonomous System. The SR OS system defaults to the System IP address or if not configured the 32 least significant bits of the system MAC address.
OSPF Version	The current version number of the OSPF protocol is 2.
OSPF Admin Status	Disabled — Denotes that the OSPF process is disabled on all interfaces. Enabled — Denotes that the OSPF process is active on at least one interface.
OSPF Oper Status	Disabled — Denotes that the OSPF process is not operational on all interfaces. Enabled — Denotes that the OSPF process is operational on at least one interface.
Preference	The route preference for OSPF internal routes.

Label	Description
External Preference	The route preference for OSPF external routes.
Backbone Router	False — This variable indicates that this router is not configured as an OSPF back bone router.  True — This variable indicates that this router is configured as an OSPF back bone router.
Area Border Router	False — This router is not an area border router.  True — This router is an area border router.
AS Border Router	False — This router is not configured as an Autonomous System border router.  True — This router is configured as an Autonomous System border router.
OSPF Ldp Sync Admin Status	Indicates whether the IGP-LDP synchronization feature is enabled or disabled on all interfaces participating in the OSPF routing protocol.

### Output Example

```
*A:Dut-A>config>service# show router ospf status
=====
Rtr Base OSPFv2 Instance 0 Status
=====
OSPF Cfg Router Id       : 0.0.0.0
OSPF Oper Router Id     : 10.20.1.1
OSPF Version            : 2
OSPF Admin Status       : Enabled
OSPF Oper Status        : Enabled
Graceful Restart        : Disabled
GR Helper Mode          : Disabled
GR Strict LSA Checking  : Enabled
Preference               : 10
External Preference     : 150
Backbone Router         : True
Area Border Router      : False
AS Border Router        : False
Opaque LSA Support      : True
Traffic Engineering Support : True
RFC 1583 Compatible     : True
Demand Exts Support     : False
In Overload State       : False
In External Overflow State : False
Exit Overflow Interval  : 0
Last Overflow Entered   : Never
Last Overflow Exit      : Never
External LSA Limit      : -1
Reference Bandwidth     : 100,000,000 Kbps
Init SPF Delay          : 1000 msec
Sec SPF Delay           : 1000 msec
Max SPF Delay           : 1000 msec
Min LS Arrival Interval : 1000 msec
Init LSA Gen Delay      : 5000 msec
Sec LSA Gen Delay       : 5000 msec
```

```
Max LSA Gen Delay      : 5000 msec
Lsa accumulate         : 1000 msec
Redistribute delay     : 1000 msec
Incremental SPF wait   : 1000 msec
Last Ext SPF Run       : Never
Ext LSA Cksum Sum      : 0x0
OSPF Last Enabled      : 07/06/2017 18:51:52
Unicast Import         : True
Multicast Import       : False
Export Policies        : None
Import Policies        : None
Lfa Policies          : None
OSPF Ldp Sync Admin Status : Enabled
LDP-over-RSVP         : Disabled
IGP-Shortcut          : Disabled
IPv4 IGP SC Tunn-Nhop : Res-Disabled
Advertise-Tunnel-Link : Disabled
LFA                   : Disabled
Remote-LFA            : Disabled
Max PQ Cost           : 65535
TI-LFA                : Disabled
Max SR FRR Labels     : 2
Export Limit           : 0
Export Limit Log Percent : 0
Total Exp Routes      : 0
RIB-priority-high prefix list: None
Segment Routing       : Enabled
Database export       : Disabled
ASN                   : n/a
Entropy Label         : Enabled
Override ELC          : Enabled
=====
```

```
*A:Dut-C>config>router>ospf3# show router ospf3 0 status
```

```
=====
Rtr Base OSPFv3 Instance 0 Status
=====
OSPF Cfg Router Id      : 10.20.1.3
OSPF Oper Router Id    : 10.20.1.3
OSPF Version           : 3
OSPF Admin Status      : Enabled
OSPF Oper Status       : Enabled
Graceful Restart       : Disabled
GR Helper Mode         : Disabled
GR Strict LSA Checking  : Enabled (operational down)
Preference             : 10
External Preference    : 150
Backbone Router        : False
Area Border Router     : False
AS Border Router       : True
Traffic Engineering Support : False
Demand Exts Support    : False
In Overload State      : False
In External Overflow State : False
Exit Overflow Interval : 0
Last Overflow Entered  : Never
Last Overflow Exit     : Never
External LSA Limit     : -1
Reference Bandwidth    : 100,000,000 Kbps
Init SPF Delay         : 1000 msec
Sec SPF Delay          : 1000 msec
Max SPF Delay          : 10000 msec
Min LS Arrival Interval : 1000 msec
```



```
Init LSA Gen Delay      : 5000 msec
Sec LSA Gen Delay      : 5000 msec
Max LSA Gen Delay      : 5000 msec
Lsa accumulate         : 1000 msec
Redistribute delay     : 1000 msec
Incremental SPF wait   : 1000 msec
Last Ext SPF Run       : 10/11/2018 07:39:48
Ext LSA Cksum Sum      : 0x10926
OSPF Last Enabled     : 10/11/2018 07:39:45
Unicast Import         : True
Multicast Import       : False
Export Policies        : static
Import Policies        : None
Lfa Policies           : None
OSPF Ldp Sync Admin Status : Enabled
LDP-over-RSVP         : Disabled
IGP-Shortcut          : Disabled
IPv6 IGP SC Tunn-Nhop : Res-Disabled
Advertise-Tunnel-Link : Disabled
LFA                   : Enabled
Remote-LFA            : Enabled
Max PQ Cost           : 65535
TI-LFA                : Disabled
Max SR FRR Labels     : 2
Export Limit          : 0
Export Limit Log Percent : 0
Total Exp Routes      : 1
RIB-priority-high prefix list: None
Segment Routing       : Enabled
Extended LSA          : sparse
=====
```

## status

### Syntax

**status**

### Context

[\[Tree\]](#) (show>router>isis>srv6 status)

### Full Context

show router isis segment-routing-v6 status

### Description

This command displays the IS-IS SRv6 status.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

## status

### Syntax

status

### Context

[\[Tree\]](#) (show>subscr-mgmt status)

### Full Context

show subscriber-mgmt status

### Description

Commands in this context display subscriber management status information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## status

### Syntax

status

### Context

[\[Tree\]](#) (show>app-assure>group>aa-sub>um status)

### Full Context

show application-assurance group aa-sub usage-monitor status

### Description

This command displays the usage monitor status.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## status

### Syntax

status

## Context

[\[Tree\]](#) (show>router>bier status)

## Full Context

show router bier status

## Description

This command displays the BIER status.

## Platforms

All

## 22.37 steering-profile

### steering-profile

## Syntax

**steering-profile** *steering-profile-name*

## Context

[\[Tree\]](#) (show subscr-mgmt steering-profile)

## Full Context

show subscriber-mgmt steering-profile

## Description

This command displays steering profile information.

## Parameters

***steering-profile-name***

Specifies an existing steering profile name.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 22.38 sticky-dest

sticky-dest

### Syntax

**sticky-dest**

### Context

[\[Tree\]](#) (tools>dump>filter>resources sticky-dest)

### Full Context

tools dump filter resources sticky-dest

### Description

This command displays information about resources pertaining to sticky destinations timers.

### Platforms

All

### Output

The following output is an example of sticky destination filter action information.

### Output Example

```
=====
Filter action - Sticky-dest resources
=====
Used   : 1
Free   : 2047
Total  : 2048
=====
```

## 22.39 sticky-leases

sticky-leases

### Syntax

**sticky-leases** [*hostname*]

### Context

[\[Tree\]](#) (show>router>dhcp>server sticky-leases)

## Full Context

```
show router dhcp local-dhcp-server sticky-leases
```

## Description

This command shows either all sticky leases or a single specific sticky lease created under the specified DHCP server.

## Parameters

### *hostname*

Specifies the name of the host for which an entry is created.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of sticky lease information

### Output Example

```
Node# show router dhcp local-dhcp-server "dhcp_server" sticky-leases
=====
DHCP Server Sticky Leases
=====
Hostname                IP address
-----
test_lease              10.0.0.1
-----
No. of Matching Entries: 1
=====
```

[Table 560: Sticky Leases Field Descriptions](#) describes the sticky leases field descriptions.

*Table 560: Sticky Leases Field Descriptions*

Field	Description
Hostname	The name of the sticky host
IP address	The IP address of the sticky host
No. of Matching Entries	The total numbers of entries matching the command criteria

## sticky-leases

## Syntax

```
sticky-leases hostname [hostname]
```

```
sticky-leases hostname-prefix [hostname-prefix]
```

### Context

[\[Tree\]](#) (clear>router>dhcp>server sticky-leases)

### Full Context

clear router dhcp local-dhcp-server sticky-leases

### Description

This command clears sticky leases.

### Parameters

#### *hostname*

Clears information about the name of the host for which an entry is cleared.

#### *hostname-prefix*

Clears information about the sub-string of all host names starting with that sub-string.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 22.40 stop

```
stop
```

### Syntax

```
stop
```

### Context

[\[Tree\]](#) (tools>perform>router>l2tp>group stop)

### Full Context

tools perform router l2tp group stop

### Description

This command triggers an attempt to immediately stop all the L2TP connections within the specified L2TP tunnel group.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## stop

### Syntax

**stop**

### Context

**[Tree]** (tools>perform>router>l2tp>tunnel stop)

**[Tree]** (tools>perform>router>l2tp>group>tunnel stop)

### Full Context

tools perform router l2tp tunnel stop

tools perform router l2tp group tunnel stop

### Description

This command triggers an attempt to immediately stop all the L2TP connections within the specified L2TP tunnel.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## stop

### Syntax

**stop** [*script-policy-name*] [**owner** *script-policy-owner*] [**all**]

### Context

**[Tree]** (tools>perform>system>script-control>script-policy stop)

### Full Context

tools perform system script-control script-policy stop

### Description

This command stops the execution of scripts.

### Parameters

#### ***script-policy-name***

Specifies to only stop scripts with the specified script-policy, up to 32 characters.

#### ***script-policy-owner***

Specifies to only stop scripts that are associated with script-policies with the specified owner, up to 32 characters.

**Default** TiMOS CLI

**all**

Specifies to stop all running scripts.

**Platforms**

All

## 22.41 stp

```
stp
```

**Syntax**

**stp** [detail]

**Context**

[\[Tree\]](#) (show>service>id stp)

**Full Context**

show service id stp

**Description**

Displays information for the spanning tree protocol instance for the service.

**Parameters**

**detail**

Displays detailed information.

**Platforms**

All

**Output**

The following output is an example of service STP information.

**Output Example**

```
A:ALA-12# show service id 1 stp
=====
Spanning Tree Information
=====
VPLS Spanning Tree Information
-----
RSTP Admin State   : Up           RSTP Oper State   : Down
Core Connectivity  : Down
Bridge-id          : 04:67:ff:00:00:01
```



```

Hold Timer      : 1          Bridge fwd delay : 15
Bridge Hello time : 1        Bridge max age   : 20
Bridge priority  : 1        Topology change  : Inactive
Last Top. change : 0d 00:00:00 Top. change count : 0

Root bridge-id  : 00:03:fa:00:00:00

Root path cost  : 1          Root forward delay: 15
Root hello time : 1        Root max age      : 20
Root priority    : 0        Root port         : vcp

-----
Spanning Tree Specifics
-----
SAP Identifier   : 1/1/7:0    RSTP State       : Down
STP Port State   : Forwarding BPDU encap        : dot1d
Port Number      : 2048       Priority          : 128
Cost             : 10         Fast Start       : Disabled
Designated Port  : 34816     Designated Bridge : 02:fa:00:04:54:01
=====
A:ALA-12#
    
```

The following output is an example for the 7450 ESS.

```

ALA-1# show service id 1 stp
=====
Inherited Rstp State (from mVPLS), Service 1
=====
Sap/Spoke Id      Oper-   Prune-   Port-   Managed by   Managed by
                  State   State   State   Service      Sap/spoke
-----
1/1/1:2           Down    Pruned   Discarding 101          1/1/1:1
100:1             Up      Pruned   Discarding 100          100:100
=====
    
```

[Table 561: Service-ID STP Field Descriptions](#) describes show service-id STP output fields:

*Table 561: Service-ID STP Field Descriptions*

Label	Description
RSTP Admin State	The administrative state of the Rapid Spanning Tree Protocol instance associated with this service
Core Connectivity	The connectivity status to the core
RSTP Oper State	The operational state of the Rapid Spanning Tree Protocol instance associated with this service. This field is applicable only when STP is enabled on the router.
Bridge-id	The MAC address used to identify this bridge in the network.
Hold Time	The interval length during which no more than two Configuration BPDUs shall be transmitted by this bridge
Bridge fwd delay	The speed of bridge state changes when moving toward the forwarding state

Label	Description
Bridge Hello time	The amount of time between the transmission of Configuration BPDUs
Bridge max age	The maximum age of spanning tree protocol information learned from the network on any port before it is discarded. This is the actual value that this bridge is currently using.
Bridge priority	The priority of the spanning tree protocol instance associated with this service
Topology change	Topology change is currently in progress.
Last Top. change	The time (in hundredths of a second) since the last time a topology change was detected by the Spanning Tree Protocol instance associated with this service
Top. change count	The total number of topology changes detected by the Spanning Tree Protocol instance associated with this service since the management entity was last reset or initialized
Root bridge-id	The Root bridge-id
Root path cost	The Root path cost
Root forward delay	The Root forward delay
Root hello time	The Root hello time
Root max age	The Root maximum age
Root priority	The Root priority level
Root port	The Root port number
SAP Identifier	The SAP identifier
RSTP State	The RSTP state
STP Port State	The STP port state
BPDU encap	The BPDU encapsulation
Port Number	The port number
Priority	The priority level
Cost	The cost
Fast Start	The fast start state
Designated Port	The designated port
Designated Bridge	The designated bridge

Label	Description
Sap/Spoke Id	The SAP or spoke ID
Oper-State	The operational state
Prune-State	The prune state
Port-State	The port state
Managed by Service	The managed service
Managed by Sap/ spoke	The managed SAP or spoke

## stp

### Syntax

stp

### Context

[\[Tree\]](#) (clear>service>statistics>id stp)

[\[Tree\]](#) (clear>service>id stp)

### Full Context

clear service statistics id stp

clear service id stp

### Description

Clears all spanning tree statistics for the service ID.

### Platforms

All

## 22.42 streaming

## streaming

### Syntax

streaming

### Context

[\[Tree\]](#) (show>oam-pm streaming)

### Full Context

show oam-pm streaming

### Description

Commands in this context show OAM performance monitoring telemetry report streaming information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## streaming

### Syntax

**streaming**

### Context

[\[Tree\]](#) (show>snmp streaming)

### Full Context

show snmp streaming

### Description

Commands in this context display streaming counters information.

### Platforms

All

## 22.43 sub-ident-policy

## sub-ident-policy

### Syntax

**sub-ident-policy** [*sub-ident-policy-name* [ **association**]]

**sub-ident-policy** *sub-ident-policy-name* **script** { **primary** | **secondary** | **tertiary**}

### Context

[\[Tree\]](#) (show>subscr-mgmt sub-ident-policy)

## Full Context

```
show subscriber-mgmt sub-ident-policy
```

## Description

This command displays subscriber identification policy information.

## Parameters

### *sub-ident-policy-name*

Specifies an existing subscriber identification policy name.

### **association**

Displays information configured with the specified *sub-ident-policy-name*.

### **script {primary | secondary | tertiary}**

Displays information for the specified identification script.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber management subscriber identification policy information.

### Output Example

```
B:Dut-A>show>subscr-mgmt# sub-ident-policy
=====
Subscriber Identification Policies
=====
Name                               Description
-----
sub_ident_all
sub_ident_pc
-----
Number of Subscriber Identification Policies : 2
=====
B:Dut-A>show>subscr-mgmt#

B:Dut-A>show>subscr-mgmt# sub-ident-policy sub_ident_all
=====
Subscriber Identification Policy sub_ident_all
=====
Sub Profile Map
-----
Key                                 Sub profile
-----
sub_prof100                         sub_prof100
sub_prof110                         sub_prof110
sub_prof120                         sub_prof120
sub_prof130                         sub_prof130
sub_prof140                         sub_prof140
sub_prof230                         sub_prof230
sub_prof80                          sub_prof80
sub_prof81                          sub_prof81
sub_prof90                          sub_prof90
-----
```

```

SLA Profile Map
-----
Key                               SLA profile
-----
sla_prof100_VOIP                  sla_prof100_VOIP
sla_prof110_VOIP                  sla_prof110_VOIP
sla_prof120_VOIP                  sla_prof120_VOIP
sla_prof130_VOIP                  sla_prof130_VOIP
sla_prof140_VOIP                  sla_prof140_VOIP
sla_prof230_VOIP                  sla_prof230_VOIP
sla_prof80_VOIP                   sla_prof80_VOIP
sla_prof81_VOIP                   sla_prof81_VOIP
sla_prof90_VOIP                   sla_prof90_VOIP
-----

Python Scripts
-----
#      Admin Oper  Script
      State State Name
-----
Primary  Down  Down  pyTom.py
Secondary Up    Up    pyTomDebug.py
Tertiary Up    Up    hardcoded.py
=====
B:Dut-A>show>subscr-mgmt#
B:Dut-A>show>subscr-mgmt# sub-ident-policy sub_ident_all association
=====
Subscriber Identification Policy sub_ident_all
=====

SAP Associations
-----
Service-Id : 80 (VPLS)
- SAP : 1/2/1:80
Service-Id : 90 (VPLS)
- SAP : 1/2/1:90
Service-Id : 100 (VPLS)
- SAP : 1/2/1:100
- SAP : 1/2/1:101
- SAP : 1/2/1:102
Service-Id : 110 (VPLS)
- SAP : 1/2/1:110
- SAP : 1/2/1:111
- SAP : 1/2/1:112
Service-Id : 120 (VPLS)
- SAP : 1/2/1:120
- SAP : 1/2/1:121
- SAP : 1/2/1:122
Service-Id : 130 (VPLS)
- SAP : 1/2/1:130
Service-Id : 140 (VPLS)
- SAP : 1/2/1:140
=====
B:Dut-A>show>subscr-mgmt#

B:Dut-A>show>subscr-mgmt# sub-ident-policy sub_ident_all script primary
=====
Subscriber Identification Policy sub_ident_all
=====
Primary Script
-----
URL          : ftp://xxx:yyy@a.b.c.d/pyTom.py
Admin State : Down          Oper State : Down
-----
Source (dumped from memory)
    
```

```

-----
Script is not active.
-----
=====
B:Dut-A>show>subscr-mgmt#

B:Dut-A>show>subscr-mgmt# sub-ident-policy sub_ident_all script secondary
=====
Subscriber Identification Policy sub_ident_all
=====
Secondary Script
-----
URL          : ftp://xxx:yyy@a.b.c.d/pyTomDebug.py
Admin State : Up          Oper State : Up
-----
Source (dumped from memory)
-----
1 import alc
2 yiaddr = alc.dhcp.yiaddr
3 # Subscriber ID equals full client IP address.
4 # Note: IP address 10.10.10.10 yields 'sub-168430090'
5 # and not 'sub-10.10.10.10'
6 alc.dhcp.sub_ident = 'sub-' + str(yiaddr)
7 # DHCP server is configured such that the third byte (field) of the IP
8 # address indicates the session Profile ID.
9 alc.dhcp.sla_profile = 'sp-' + str((yiaddr & 0x0000FF00) >> 8)
=====
B:Dut-A>show>subscr-mgmt#

B:Dut-A>show>subscr-mgmt# sub-ident-policy sub_ident_all script tertiary
=====
Subscriber Identification Policy sub_ident_all
=====
Tertiary Script
-----
URL          : ftp://xxx:yyy@a.b.c.d/hardcoded.py
Admin State : Up          Oper State : Up
-----
Source (dumped from memory)
-----
1 from alc import dhcp
2
3 dhcp.sub_ident = 'sub_ident_A_1'
4 dhcp.sub_profile_string = 'sub_prof_B_2'
5 dhcp.sla_profile_string = 'sla_prof_C_3'
6
=====
B:Dut-A>show>subscr-mgmt#
    
```

**Table 562: Subscriber Identification Policy Field Descriptions** describes subscriber identification policy output fields.

*Table 562: Subscriber Identification Policy Field Descriptions*

Field	Description
Name	The subscriber identification policy name
Description	The user provided description of this policy

Field	Description
Number of Subscriber Identification Policies	The total number of subscriber identification policies configured on the node
Sub Profile Map	The subscriber profile used to define the aggregate QoS for all hosts within a subscriber context
Key	The key that defines the auto-generated subscriber identification key for PPP hosts.
Sub profile	A list of subscriber identification profiles
SLA profile	A list of SLA profiles
Admin State	The administrative state of the Python scripts
Oper State	The operational state of the Python scripts
Script Name	The Python policy script name
SAP Associations	The subscriber identification policy SAP associations
Service-Id	The service ID associated with the subscriber identification policy
SAP	The SAP ID associated with the subscriber identification policy
URL	The URL of the script to change the Python message
Admin State	The admin state of the script
Oper State	The operational state of the script
Primary Script	Information about the primary Python script
Secondary Script	Information about the secondary Python script

## 22.44 sub-mcac

### sub-mcac

#### Syntax

**sub-mcac** [**subscriber** *sub-ident-string*] [ **policy** *sub-mcac-policy-name*]

#### Context

**[Tree]** (show>service>active-subscribers sub-mcac)



## Full Context

```
show service active-subscribers sub-mcac
```

## Description

This command displays active subscriber MCAC information.

## Parameters

### *sub-ident-string*

Specifies the subscriber identification string, up to 32 characters.

### *sub-mac-policy-name*

Specifies the subscriber MAC policy name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of active subscriber MCAC information.

### Output Example

```
*A:eng-BNG-2# show service active-subscribers sub-mcac
=====
Active Subscribers Sub-MCAC
=====
Subscriber                : user_1
MCAC-policy               : sub-mcac-policy-01 (inService)
In use mandatory bandwidth : 10
In use optional bandwidth  : 10
Available mandatory bandwidth : 1000
Available optional bandwidth : 100
-----
Number of Subscribers: 1
=====
```

## 22.45 sub-mcac-policy

### sub-mcac-policy

## Syntax

```
sub-mcac-policy
```

```
sub-mcac-policy policy-name association
```

```
sub-mcac-policy policy-name
```

## Context

**[Tree]** (show>subscr-mgmt sub-mcac-policy)

## Full Context

show subscriber-mgmt sub-mcac-policy

## Description

This command displays subscriber MCAC policy information.

## Parameters

### *policy-name*

Specifies the subscriber MCAC policy name, up to 32 characters.

### **association**

Displays information associated with the subscriber MCAC policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s

## 22.46 sub-profile

### sub-profile

## Syntax

**sub-profile** [*sub-profile-name* [**association**]]

## Context

**[Tree]** (show subscr-mgmt sub-profile)

## Full Context

show subscriber-mgmt sub-profile

## Description

This command displays subscriber profile information.

## Parameters

### *sub-profile-name*

Specifies an existing subscriber profile name.

### **association**

Displays the association information configured with the specified *sub-profile-name*.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber profile information.

### Output Example

```
# show subscriber-mgmt sub-profile "sub-profile-10"
=====
Subscriber Profile sub-profile-10
=====
Description      : (Not Specified)
Control plane(s) : local
Host Limits      : overall 1
                  ipv4-overall 1
                  ipv4-arp 1
                  ipv4-dhcp 1
                  ipv4-ppp 1
                  ipv6-overall 1
                  ipv6-pd-overall 1
                  ipv6-pd-ipoe-dhcp 1
                  ipv6-pd-ppp-dhcp 1
                  ipv6-wan-overall 1
                  ipv6-wan-ipoe-dhcp 1
                  ipv6-wan-ipoe-slaac 1
                  ipv6-wan-ppp-dhcp 1
                  ipv6-wan-ppp-slaac 1
                  lac-overall 1
Session Limits   : overall 1
                  ipoe 1
                  pppoe-overall 1
                  pppoe-local 1
                  pppoe-lac 1
                  l2tp-overall 1
                  l2tp-lns 1
                  l2tp-lts 1
I. Sched. Policy : N/A
E. Sched. Policy : N/A
                  E. Agg Rate Limit: Max
                  E. Min Resv Bw   : 1
I. Policer Ctrl. : N/A
E. Policer Ctrl. : N/A
I. vport-hashing : Disabled
I. sec-sh-hashing: Disabled
Q Frame-Based Ac*: Disabled
Acct. Policy      : N/A
ANCP Pol.        : N/A
Accu-stats-pol   : (Not Specified)
HostTrk Pol.     : N/A
IGMP Policy      : N/A
MLD Policy       : N/A
PIM Policy       : N/A
Sub. MCAC Policy : N/A
NAT Policy       : N/A
Firewall Policy  : N/A
UPnP Policy      : N/A
NAT Prefix List  : N/A
Allow NAT bypass : No
NAT access mode  : auto
Def. Encap Offset: none
Vol stats type   : full
Preference       : 5
                  Collect Stats    : Disabled
                  Encap Offset Mode: none
```

```
LAG hash class   : 1
LAG hash weight  : 1
-----
Radius Accounting
-----
Policy           : N/A
Session Opti.Stop: False
-----
HS
-----
SLA-mode         : expanded                E Agg Rate Limit : Maximum
                                           E. Min Resv Bw   : 1
E low burst class: 6
-----
Last Mgmt Change : 09/30/2020 15:39:24
=====
* indicates that the corresponding row element may have been truncated.
-----
SLA Profile Map
-----
Key              SLA Profile
-----
No mappings configured.
=====
```

```
# show subscriber-mgmt sub-profile
=====
Subscriber Profiles
=====
Name              Description
-----
sub_default
sub_prof100
sub_prof110
sub_prof120
sub_prof130
sub_prof140
sub_prof230
sub_prof80
sub_prof81
sub_prof90
sub_profPC1
sub_profPC2
sub_profPC3
-----
Number of Subscriber Profiles : 13
=====
A:Dut-A#

# show subscriber-mgmt sub-profile sub_prof100 association
=====
Subscriber Profile sub_prof100
-----
SAP Default-Profile Associations
-----
No associations found.
-----
SAP Static Host Associations
-----
No associations found.
=====
```

```

SAP Non-Sub-Traffic-Profile Associations
-----
No associations found.
-----
Sub-Ident-Policy Profile Map Associations
-----
Policy-name : sub_ident_all
- Key : sub_prof100
-----
Explicit Subscriber Map Associations
-----
No associations found.
=====
A:Dut-A#
    
```

[Table 563: Subscriber Profile Field Descriptions](#) describes subscriber management profile field descriptions.

*Table 563: Subscriber Profile Field Descriptions*

Field	Description
Name	The subscriber profile name
Description	The user provided description of this policy
Control plane(s)	The subscriber profile controlled by the local control plane or CUPS control plane
I. Sched. Policy	The ingress scheduler policy assigned to the ingress subscriber profile
E. Sched. Policy	The egress scheduler policy assigned to the egress subscriber profile
E. Agg Rate Limit	The egress aggregate rate limit
E. Min Resv Bw	The egress minimum reserved bandwidth
I. Policer Ctrl	The ingress policer control status
E. Policer Ctrl	The egress policer control status
I. vport-hashing	The ingress vport-hashing status
I. sec-sh-hashing	The ingress security sh hashing status
Q Frame-Based Ac*	The Q frame-based accounting status
Acct. Policy	The number of accounting policies associated with this subscriber profile
ANCP Pol.	The ANCP policy
Accu-stats-pol	The accu-stats policy
HostTrk Pol.	The HostTrk policy

Field	Description
IGMP Policy	The IGMP policy
MLD Policy	The MLD policy
PIM Policy	The PIM policy
Sub. MCAC Policy	The subscriber MCAC policy
NAT Policy	The NAT policy
Host Limits	The configured maximum number of hosts per subscriber associated with this subscriber profile
Session Limits	The configured maximum number of sessions per subscriber associated with this subscriber profile
Number of Subscriber Profiles	The total number of subscriber profiles configured on this node
Ingress Scheduler Overrides	Information about ingress scheduler overrides for the subscriber profile
Scheduler	The scheduler name
Rate	The scheduler rate
CIR	The CIR rate allowed for this scheduler
Egress Scheduler Overrides	Information about egress scheduler overrides for the subscriber profile
Key	The lookup key in the map
SLA Profile	Information about the SLA profile map
Collect Stats	The accounting statistics collected on this subscriber profile.
Last Mgmt Change	The time of the most recent management-initiated change

## 22.47 sub-services

### sub-services

#### Syntax

**sub-services** [*id service-id*] [**sap sap-id**] [ *ip ip-prefix/prefix-length*] [ **mac ieee-address**] [**pppoe-session-id pppoe-session-id**] [ **sub-service-name sub-service-name**] [**sub-service-type sub-service-type**] [**summary | associations**]

## Context

[\[Tree\]](#) (show>service sub-services)

## Full Context

show service sub-services

## Description

This command displays subscriber service information.

## Parameters

### *service-id*

Specifies the subscriber service ID.

**Values** 1 to 2148278386 | *svc-name*: 64 char max

### *sap-id*

Specifies the SAP ID.

#### **Values**

null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>eth-sat-id</i>
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i> : <i>[qtag1</i>   <i>cp-conn-prof-id</i> ]
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i> : <i>[qtag1</i>   <b>cp-conn-prof-id</b> ]. <i>[qtag2</i>   <b>cp-conn-prof-id</b> ]
	<b>cp</b> keyword
	<i>conn-prof-id</i> 1 to 8000
cem	<i>slot/mda/port.channel</i>
ima-grp	<i>bundle-id</i> [ <i>:vpi/vci</i>   <i>vpi</i>   <i>vpi1.vpi2</i>   <b>cp.conn-prof-id</b> ]
	<b>cp</b> keyword
	<i>conn-prof-id</i> 1 to 8000
port-id	<i>slot/mda/port</i> <i>[.channel]</i> <b>esat-id</b> / <i>slot/port</i> <b>pxc-id</b> . <i>sub-port</i>
aps-id	<b>aps-group-id</b> <i>[.channel]</i>
	<b>aps</b> keyword
	<i>group-id</i> 1 to 128
eth-tunnel	<i>eth-tunnel-id</i> : <i>eth-tun-sap-id</i>
	<i>id</i> 1 to 1024
	<i>eth-tun-sap-id</i> 0 to 4094

lag-id	<b>lag-id</b>   <b>lag-string</b>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
	<i>string</i>	23 character max.
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 32767
qtag1	null   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private</b>   <b>public:tag</b>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16
	<i>tag</i>	0 to 4094
eth-sat-id	<b>esat-id/slot/port</b>	
	<b>esat</b>	keyword
	<i>id</i>	1 to 20
pxc-id	<b>pxc-id.sub-port</b>	
	<b>pxc</b>	keyword
	<i>id</i>	1 to 64
	<i>sub-port</i>	a, b

**ip-prefix/ip-prefix-length**

Specifies information for the specified IP prefix and mask length.

- Values**
- ipv4-prefix* — a.b.c.d
  - ipv4-prefix-length* — 0 to 32
  - ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x — [0..FFFF]H
  - d — [0..255]D
  - ipv6-prefix-length* — 0 to 128

**ieee-address**

Specifies the MAC address.



**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx (cannot be all zeros)

***pppoe-session-id***

Specifies the PPPoE session ID.

**Values** 0 to 65535

***sub-service-name***

Specifies the subscriber service name, up to 255 characters.

***sub-service-type***

Specifies the subscriber service type, up to 255 characters.

***summary***

Displays summary information.

***associations***

Displays information associated with the subscriber service.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 22.48 subnet-ext-stats

### subnet-ext-stats

**Syntax**

**subnet-ext-stats** *ip-address[/mask]*

**subnet-ext-stats pool** *pool-name*

**Context**

[\[Tree\]](#) (show>router>dhcp>server subnet-ext-stats)

**Full Context**

show router dhcp local-dhcp-server subnet-ext-stats

**Description**

This command displays extended statistics per DHCPv4 subnet in local DHCPv4 server.

The following statistics are included in output:

- The number of stable leases in the subnet
- The number of provisioned address in the subnet
- The number of used address in the subnet
- The number of free address in the subnet

- The percentage of used address
- The percentage of free address

For each statistic (except for Provisioned Addresses), there is current value and peak value, peak value is the highest value since subnet creation or last reset via the **clear router *rt-id* dhcp local-dhcp-server *svr-name* subnet-ext-stats** command.

When parameter pool is used, the statistics of each subnet in the pool are displayed.

### Parameters

***ip-address[/mask]***

Specifies the subnet and mask.

***pool-name***

Specifies the name of local DHCPv4 server pool.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of subnet extended statistics information.

#### Output Example

```
show router 500 dhcp local-dhcp-server "d4" subnet-ext-stats 239.10.10.0/24
=====
Extended statistics for subnet 239.10.10.0/24
=====
Current      Peak      TimeStamp
-----
Local:
Stable Leases      1          1      01/07/2013 19:38:36
Provisioned Addresses 101
Used Addresses     1          1      01/07/2013 19:38:36
Free Addresses     100       100    01/07/2013 19:38:36
Used Pct           1          1      01/07/2013 19:38:36
Free Pct           99        99     01/07/2013 19:38:36
Last Reset Time    01/07/2013 19:07:11
-----
Number of entries  1
=====
```

[Table 564: Extended Subnet Statistics Field Descriptions](#) describes extended subnet statistics output field descriptions.

*Table 564: Extended Subnet Statistics Field Descriptions*

Field	Descriptions
Current	The current statistics for the subnet
Peak	The peak statistics for the subnet
TimeStamp	The timestamp for the last reset

Field	Descriptions
Stable Leases	The number of stable leases
Provision Addresses	The number of provisioned addresses in this subnet
Used Addresses	The number of used addresses in this subnet
Free Address	The number of free addresses in this subnet
Used Pct	The percentage of addresses in this subnet in use
Free Pct	The percentage of addresses in this subnet currently unused
Last Reset Time	The time of the last reset
Number of entries	The total number of entries

## subnet-ext-stats

### Syntax

**subnet-ext-stats** *ip-address[/mask]*

**subnet-ext-stats pool** *pool-name*

### Context

[\[Tree\]](#) (clear>router>dhcp>server subnet-ext-stats)

### Full Context

clear router dhcp local-dhcp-server subnet-ext-stats

### Description

This command clears extended subnet statistics.

### Parameters

***ip-address[/mask]***

Clears the specified IP address and mask.

***pool-name***

Clears statistics for the specified pool name.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 22.49 subnet-stats

### subnet-stats

#### Syntax

**subnet-stats** *ip-address[/mask]*

**subnet-stats pool** *pool-name*

#### Context

**[Tree]** (show>router>dhcp>server subnet-stats)

#### Full Context

show router dhcp local-dhcp-server subnet-stats

#### Description

This command displays subnet statistics.

#### Parameters

***ip-address[/mask]***

Specifies the subnet and mask.

***pool-name***

Specifies the name of local DHCPv4 server pool.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of subnet statistics information.

#### Output Example

```
*A:SUB-Dut-A# show router dhcp local-dhcp-server dhcpS2 subnet-stats pool P00L2
=====
Statistics for pool P00L2
=====
Subnet                Free      Offered   Stable
                    FRPending RemPending Declined
-----
10.0.0.0/8           16384      0         0
                    0         0         0
-----
No. of entries: 1
=====
*A:SUB-Dut-A#
```

[Table 565: Subnet Stats Pool Field Descriptions](#) describe the fields for subnet stats pool output.

Table 565: Subnet Stats Pool Field Descriptions

Field	Description
Subnet	The subnet address
Free	The number of addresses in this subnet that are free
Offered	The number of leases in this subnet that are in state <b>offered</b>
Stable	The number of leases in this subnet that are in state <b>stable</b>
FRPending	The number of leases in this subnet that are in state <b>force RenewPending</b>
RemPending	The number of leases in this subnet that are in state <b>removePending</b>
Declined	The number of addresses in this subnet that are declined
No. of entries	The total number of entries

## 22.50 subscribe-to

### subscribe-to

#### Syntax

**subscribe-to** *log-id* *log-id*

#### Context

[\[Tree\]](#) (tools>perform>log subscribe-to)

#### Full Context

tools perform log subscribe-to

#### Description

This command subscribes the current CLI session to the specified CLI log. Log events for the specified log will be output in the current CLI session until the CLI session closes or an unsubscribe-from command is used.

#### Parameters

***log-id***

Specifies the log ID for which subscription is requested.

**Values** 1 to 101

## Platforms

All

## 22.51 subscriber

### subscriber

#### Syntax

```
subscriber sub-ident-string sap sap-id sla-profile sla-profile-name [scheduler scheduler-name] [spi-sharing-type spi-sharing-type] [spi-sharing-id spi-sharing-id]
```

```
subscriber sub-ident-string [scheduler scheduler-name] [ingress | egress]
```

#### Context

[\[Tree\]](#) (clear>qos>scheduler-stats subscriber)

#### Full Context

```
clear qos scheduler-stats subscriber
```

#### Description

This command clears scheduler stats by subscriber.

#### Parameters

##### ***sub-ident-string***

Clears information for the specified subscriber name.

##### ***sap-id***

Clears information for the specified SAP.

##### ***sla-profile-name***

Clears information for the specified SLA profile name.

##### ***scheduler-name***

Clears information for the specified scheduler.

##### ***spi-sharing-type***

Clears information for sessions with the specified SPI sharing type.

**Values** per-group, per-session-ipoe, per-session-ppp

##### ***spi-sharing-id***

Clears information for sessions with the specified SPI sharing type and sharing identifier.  
The SPI group identifier is:

- an identifier when the sharing type is per-group
- an internal PPP or IPoE sharing identifier when the sharing type is a per-PPP or per-IPoE session

**Values** 0 to 4294967295

#### **egress**

Clears egress information for the subscriber.

#### **ingress**

Clears ingress information for the subscriber.

### **Platforms**

All

## subscriber

### **Syntax**

**subscriber** *sub-ident-string*

### **Context**

[\[Tree\]](#) (clear>service>statistics subscriber)

### **Full Context**

clear service statistics subscriber

### **Description**

This command clears the statistics for a particular subscriber.

### **Parameters**

***sub-ident-string***

Clears statistics for the specified subscriber identification string.

### **Platforms**

All

## subscriber

### **Syntax**

**subscriber** *sub-ident-string*

**subscriber** *sub-ident-string* **detail**

**subscriber** *sub-ident-string* **mirror**

```
subscriber sub-ident-string sap sap-id sla-profile sla-profile-name [spi-sharing-type spi-sharing-type]  
[spi-sharing-id spi-sharing-id]
```

```
subscriber sub-ident-string sap sap-id sla-profile sla-profile-name [spi-sharing-type spi-sharing-type]  
[spi-sharing-id spi-sharing-id] detail
```

```
subscriber sub-ident-string sap sap-id sla-profile sla-profile-name [spi-sharing-type spi-sharing-type]  
[spi-sharing-id spi-sharing-id] mirror
```

## Context

[\[Tree\]](#) (show>service>active-subscribers subscriber)

## Full Context

show service active-subscribers subscriber

## Description

This command displays active subscriber information for a subscriber.

## Parameters

### ***sub-ident-string***

Displays the subscriber ID of the active subscriber, up to 32 characters.

### ***sap-id***

Displays the physical port identifier portion of the SAP definition.

### ***sla-profile-name***

Displays the existing SLA profile name, up to 32 characters.

### ***spi-sharing-type***

Displays subscriber information for sessions with the specified SPI sharing type.

**Values** per-group, per-session-ipoe, per-session-ppp

### ***spi-sharing-id***

Displays subscriber information for sessions with the specified SPI sharing type and sharing identifier. The SPI group ID is:

- a group id when sharing type is per-group
- an internal PPP or IPoE sharing id when the sharing type is per-PPP or per-IPoE session

**Values** 0 to 4294967295

### **detail**

Displays detailed output.

### **mirror**

Displays mirrored output.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## Output

The following output is an example of subscriber information for active subscribers.

### Output Example

```
*A:eng-BNG-2# show service active-subscribers subscriber "user_1"
=====
Active Subscribers
=====
-----
Subscriber user_1
          (no-prof)
-----
(1) SLA Profile Instance sap:1/1/20:841 - sla:no-prof
-----
IP Address      MAC Address      Session      Origin      Svc      Fwd
-----
192.168.0.14   00:00:10:10:12:13  N/A          DHCP        1000     Y
-----
=====
```

## subscriber

### Syntax

```
subscriber sub-ident-string [{ingress | egress}] [{detail | root-detail | thresholds | priority-info | depth}]
    [port port-id] [arbiter {name | root}]
```

### Context

[\[Tree\]](#) (show>qos>policer-hierarchy subscriber)

### Full Context

```
show qos policer-hierarchy subscriber
```

### Description

This command displays information about the policer hierarchy per subscriber.

### Parameters

#### ***sub-ident-string***

Displays information about the specified subscriber.

#### **ingress**

Displays ingress information about the specified subscriber.

#### **egress**

Displays egress information about the specified subscriber.

#### **detail**

Displays detailed information.

### **root-detail**

Displays detailed information about the arbiter root.

### **thresholds**

Displays threshold, parenting, rate, and traffic information related to a policer.

### **priority-info**

Displays threshold information related to the root arbiter.

### **depth**

Displays bucket depth, parenting, rate, and traffic information related to a policer.

### **port-id**

Displays information about the specified port.

**Values** *slot/mda/port[.channel]*

### **name**

Displays information about the named QoS arbiter.

### **root**

Displays information about the arbiter root.

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## **subscriber**

### **Syntax**

**subscriber** *sub-ident-string* [**scheduler** *scheduler-name*] [{**ingress** | **egress**}] [**detail**]

**subscriber** *sub-ident-string* **sla-profile** *sla-profile-name* **sap** *sap-id* [**scheduler** *scheduler-name*] [**detail**]  
[ **spi-sharing-type** *spi-sharing-type*] [ **spi-sharing-id** *spi-sharing-id*]

### **Context**

[\[Tree\]](#) (show>qos>scheduler-hierarchy subscriber)

### **Full Context**

show qos scheduler-hierarchy subscriber

### **Description**

This command displays the scheduler hierarchy per subscriber.

### **Parameters**

#### ***sub-ident-string***

Displays the subscriber identification policy name.

#### ***scheduler-name***

Displays the scheduler name.

**ingress**

Displays ingress SAP subscriber scheduler stats.

**egress**

Displays egress SAP subscriber scheduler stats.

**detail**

Displays detailed information.

***sla-profile-name***

Displays information for the specified sla-profile-name.

***spi-sharing-type***

Displays subscriber scheduler hierarchy information for sessions with the specified SLA Profile Instance sharing type.

**Values** per-group, per-session-ipoe, per-session-ppp

***spi-sharing-id***

Displays subscriber scheduler hierarchy information for sessions with the specified SLA Profile Instance sharing type and sharing identifier. The spi-sharing-id is:

- a group id when sharing type is per-group
- an internal PPP or IPoE sharing id when the grouping type is per-PPP or per-IPoE-session

**Platforms**

All

**Output**

The following output is an example of QoS scheduler hierarchy subscriber information, and [Table 566: Show QoS Scheduler-Hierarchy Subscriber Output Fields](#) describes the QoS scheduler hierarchy subscriber fields.

**Output Example**

```
*A:PE# show qos scheduler-hierarchy subscriber "sub1"

=====
Scheduler Hierarchy - Subscriber sub1
=====
Ingress Scheduler Policy: basic-upstream-policy
Egress Scheduler Policy : basic-downstream-policy
-----
Root (Ing)
| slot(1)
|--(S) : basic-upstream
|
|   |--(Q) : Sub=sub1:basic-sla 200->1/1/1:1->2 1-1
|   |--(Q) : Sub=sub1:basic-sla 200->1/1/1:1->1 1-1
|
Root (Egr)
| slot(1)
|--(S) : basic-downstream (Port 1/1/1)
```

```

|--(Q) : Sub=sub1:basic-sla 200->1/1/1:1->1

=====
*A:PE#
*A:PE# show qos scheduler-hierarchy subscriber "sub1" detail
=====
Scheduler Hierarchy - Subscriber sub1
=====
Ingress Scheduler Policy: basic-upstream-policy
Egress Scheduler Policy : basic-downstream-policy
-----
Legend :
(*) real-time dynamic value
(w) Wire rates
B Bytes
-----

Root (Ing)
| slot(1)
|--(S) : basic-upstream
|      AdminPIR:max           AdminCIR:0(sum)
|      Limit Unused Bandwidth: disabled
|
|      [Within CIR Level 0 Weight 0]
|      Assigned:0           Offered:0
|      Consumed:0
|
|      [Above CIR Level 0 Weight 0]
|      Assigned:0           Offered:0
|      Consumed:0
|
|      TotalConsumed:0
|      OperPIR:max
|
|      [As Parent]
|      Rate:max
|      ConsumedByChildren:0
|
|--(Q) : Sub=sub1:basic-sla 200->1/1/1:1->2 1-1
|      AdminPIR:1000000     AdminCIR:0
|      Parent Limit Unused Bandwidth: not-found
|      CBS:31457280 B
|      MBS:51904512 B
|      Depth:0 B
|      HighPlus Drop Tail:51904512 B
|      High Drop Tail:51904512 B
|      Low Drop Tail:46399488 B
|      Exceed Drop Tail:40894464 B
|
|      [Within CIR Level 0 Weight 1]
|      Assigned:0           Offered:0
|      Consumed:0
|
|      [Above CIR Level 1 Weight 1]
|      Assigned:1000000     Offered:0
|      Consumed:0
    
```

```
TotalConsumed:0
OperPIR:max      OperCIR:0
OperFIR:0

PktByteOffset:add 0*
OnTheWireRates:false
ATMOnTheWireRates:false
LastMileOnTheWireRates:false

--(Q) : Sub=sub1:basic-sla 200->1/1/1:1->1 1-1
AdminPIR:10000      AdminCIR:0
Parent Limit Unused Bandwidth: not-found
CBS:10420224 B
MBS:20840448 B
Depth:0 B
HighPlus Drop Tail:20840448 B
High Drop Tail:20840448 B
Low Drop Tail:20840448 B
Exceed Drop Tail:16515072 B

[Within CIR Level 0 Weight 1]
Assigned:0      Offered:0
Consumed:0

[Above CIR Level 1 Weight 1]
Assigned:10000      Offered:0
Consumed:0

TotalConsumed:0
OperPIR:10000      OperCIR:0
OperFIR:0

PktByteOffset:add 0*
OnTheWireRates:false
ATMOnTheWireRates:false
LastMileOnTheWireRates:false

Root (Egr)
| slot(1)
|--(S) : basic-downstream (Port 1/1/1)
AdminPIR:max      AdminCIR:0(sum)
Parent Limit Unused Bandwidth: not-found

AvgFrmOv:100.00
AdminPIR:max(w)      AdminCIR:0(w)

[Within CIR Level 0 Weight 0]
Assigned:0(w)      Offered:0(w)
Consumed:0(w)

[Above CIR Level 1 Weight 1]
Assigned:1000000(w) Offered:0(w)
Consumed:0(w)

TotalConsumed:0(w)
OperPIR:1000000

[As Parent]
Rate:1000000
ConsumedByChildren:0
```

```

--(Q) : Sub=sub1:basic-sla 200->1/1/1:1->1
      AdminPIR:1000000    AdminCIR:0
      Parent Limit Unused Bandwidth: not-found
      AvgFrmOv:100.00
      CBS:0 B
      MBS:1253376 B
      Depth:0 B
      HighPlus Drop Tail:1253376 B
      High Drop Tail:1253376 B
      Low Drop Tail:1253376 B
      Exceed Drop Tail:983040 B

      [Within CIR Level 0 Weight 1]
      Assigned:0          Offered:0
      Consumed:0

      [Above CIR Level 1 Weight 1]
      Assigned:1000000    Offered:0
      Consumed:0

      TotalConsumed:0
      OperPIR:max          OperCIR:0

      PktByteOffset:add 0*
      OnTheWireRates:false
      ATMOnTheWireRates:false
      LastMileOnTheWireRates:false
    
```

---

\*A:PE#

Table 566: Show QoS Scheduler-Hierarchy Subscriber Output Fields

Label	Description
Legend	Admin CIR/PIR: Specifies the configured value of CIR/PIR. Assigned CIR/PIR: Specifies the PIR/CIR rate given to a member by that parent level. Offered CIR/PIR: Specifies the offered load on that member. Consumed CIR/PIR: Specifies the amount of scheduler bandwidth used by this member.
PIR	Specifies the PIR rate.
CIR	Specifies the CIR rate.
S	Displays the scheduler name.
Q	Displays the queue ID and information.

## subscriber

### Syntax

```
subscriber sub-ident-string sap sap-id sla-profile sla-profile-name [scheduler scheduler-name] [spi-sharing-type spi-sharing-type] [spi-sharing-id spi-sharing-id]  
subscriber sub-ident-string [scheduler scheduler-name] [{ingress | egress}]
```

### Context

[\[Tree\]](#) (show>qos>scheduler-stats subscriber)

### Full Context

```
show qos scheduler-stats subscriber
```

### Description

This command displays scheduler statistics information.

### Parameters

#### ***sub-ident-string***

Specifies an existing SLA profile string.

#### ***scheduler-name***

Specifies an existing scheduler name.

#### **ingress**

Display only the policy displayed on ingress.

#### **egress**

Display only the policy displayed on egress.

#### ***sla-profile-name***

Displays information for the specified sla-profile-name.

#### ***spi-sharing-type***

Displays subscriber scheduler hierarchy information for sessions with the specified SLA Profile Instance sharing type.

**Values** per-group, per-session-ipoe, per-session-ppp

#### ***spi-sharing-id***

Displays subscriber scheduler hierarchy information for sessions with the specified SLA Profile Instance sharing type and sharing identifier. The spi-sharing-id is:

- a group id when sharing type is per-group
- an internal PPP or IPoE sharing id when the sharing type is per-PPP or per-IPoE-session

### Platforms

All

## Output

The following output is an example of QoS scheduler-stats subscriber information, and [Table 567: Show QoS Scheduler-Stats Subscriber Output Fields](#) describes the QoS scheduler-stats subscriber fields.

### Output Example

```
A:D# show qos scheduler-stats subscriber RoutedCoHost1
=====
Scheduler Stats
=====
Scheduler                Forwarded Packets    Forwarded Octets
-----
Ingress Schedulers
gp                        0                    0
Egress Schedulers
gp                        0                    0
mb                        0                    0
mbs                       0                    0
pb                        0                    0
pbs                       0                    0
rb                        0                    0
rbs                       0                    0
=====
*A:D#
```

Table 567: Show QoS Scheduler-Stats Subscriber Output Fields

Label	Description
Scheduler	Displays the scheduler policy name.
Forwarded Packets	Displays the number of packets forwarded.
Forwarded Octet	Displays the number of octets forwarded.

## subscriber

### Syntax

**subscriber** *sub-indent-string* [**egress**] [**detail**]

### Context

[\[Tree\]](#) (show>qos>agg-rate subscriber)

### Full Context

show qos agg-rate subscriber

### Description

This command displays the H-QoS aggregate rate limit per subscriber.



## Parameters

### *sub-indent-string*

Specifies the subscriber identification string of the subscriber.

### **egress**

Displays egress SAP customer scheduler stats.

### **detail**

Displays detailed information.

## Platforms

All

## Output

The following output is an example of H-QoS aggregate rate limit per subscriber, and [Table 568: Show H-QoS Aggregate Rate Limit per Subscriber Fields](#) describes the H-QoS aggregate rate limit per subscriber fields.

### Output Example

```
*A:PE1# show qos agg-rate subscriber "sub1" egress
=====
Aggregate Rate Information - Subscriber sub1
=====
-----
Root (Egr)
| slot(1)
|   AdminRate           : 1000
|   OperRate            : 0
|   Limit Unused Bandwidth : disabled
|   OnTheWireRates      : false
|   LastMileOnTheWireRates : false
|
|--(Q) : Sub=sub1:basic-sla 1->1/1/1:1->1 (Port 1/1/1)
|
=====
*A:PE#
```

Table 568: Show H-QoS Aggregate Rate Limit per Subscriber Fields

Label	Description
AdminRate	Displays the configured aggregate rate in the subscriber profile.
OperRate	Displays the actual downstream rate.
Limit Unused Bandwidth	Indicates whether the <b>limit-unused-bandwidth</b> command is enabled to protect against exceeding the aggregated bandwidth
OnTheWireRates	Indicates whether the displayed rates are on-the-wire rates.

Label	Description
LastMileOnTheWireRates	Indicates whether the displayed rates are on-the-wire rates for the last mile only.

## subscriber

### Syntax

**subscriber** *sub-ident-string* **sap** *sap-id* **sla-profile** *sla-profile-name* [**repeat** *repeat*] [**absolute** | **rate**] [**base**]

**subscriber** *sub-ident-string* **sap** *sap-id* **sla-profile** *sla-profile-name* [**repeat** *repeat*] [**absolute** | **rate**] **egress-policer-id** *egress-policer-id*

**subscriber** *sub-ident-string* **sap** *sap-id* **sla-profile** *sla-profile-name* [**repeat** *repeat*] [**absolute** | **rate**] **egress-queue-id** *egress-queue-id*

**subscriber** *sub-ident-string* **sap** *sap-id* **sla-profile** *sla-profile-name* [**repeat** *repeat*] [**absolute** | **rate**] **ingress-policer-id** *ingress-policer-id*

**subscriber** *sub-ident-string* **sap** *sap-id* **sla-profile** *sla-profile-name* [**repeat** *repeat*] [**absolute** | **rate**] **ingress-queue-id** *ingress-queue-id*

### Context

[\[Tree\]](#) (monitor>service subscriber)

### Full Context

monitor service subscriber

### Description

This command monitors statistics for a subscriber.

### Parameters

#### **sub-ident-string**

Specifies an existing subscriber identification profile to monitor, up to 32 characters.

#### **sap-id**

Specifies the physical port identifier portion of the SAP definition.

#### **Values**

null	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>
dot1q	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>aps-id</i>   <i>pw-id</i> : <i>[qtag1]</i> <i>cp-conn-prof-id</i>
qinq	<i>port-id</i>   <i>bundle-id</i>   <i>bpgrp-id</i>   <i>lag-id</i>   <i>pw-id</i> : <i>[qtag1]</i> <i>cp-conn-prof-id</i> . <i>[qtag2]</i>   <i>cp-conn-prof-id</i>
<b>cp</b>	keyword
<i>conn-prof-id</i>	1 to 8000

cem	<i>slot/mda/port.channel</i>	
ima-grp	bundle-id [:vpi/vci   vpi   vpi1.vpi2   <b>cp.conn-prof-id</b> ]	
	<b>cp</b>	keyword
	<i>conn-prof-id</i>	1 to 8000
port-id	<i>slot/mda/port[.channel]</i> <i>esat-id/slot/port</i> <i>pxc-id.sub-port</i>	
aps-id	<b>aps-group-id</b> [.channel]	
	<b>aps</b>	keyword
	<i>group-id</i>	1 to 128
ccag-id	<b>ccag-id.path-id</b> [ <i>cc-type</i> ]: <i>cc-id</i>	
	<b>ccag</b>	keyword
	<i>id</i>	1 to 8
	<i>path-id</i>	a   b
	<i>cc-type</i>	.sap-net   .net-sap
	<i>cc-id</i>	1 to 4094
eth-tunnel	<b>eth-tunnel-id</b> [: <i>eth-tun-sap-id</i> ]	
	<i>id</i>	1 to 1024
	<i>eth-tun-sap-id</i>	0 to 4094
lag-id	<b>lag-id</b>	
	<b>lag</b>	keyword
	<i>id</i>	1 to 800
pw-id	<b>pw-id</b>	
	<b>pw</b>	keyword
	<i>id</i>	1 to 10239
qtag1	*   0 to 4094	
qtag2	*   null   0 to 4094	
tunnel-id	<b>tunnel-id.private</b>   <i>public:tag</i>	
	<b>tunnel</b>	keyword
	<i>id</i>	1 to 16

*tag*

0 to 4094

***sla-profile-name***

Specifies an existing SLA profile. The name can be a maximum of 32 characters long.

***seconds***

Configures the interval for each display, in seconds.

**Values** 11 to 60

**Default** 11

***repeat***

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

***absolute***

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**Default** mode delta

***rate***

Displays rate-per-second for each statistic instead of the delta.

***base***

Monitor base statistics.

***egress-policer-id***

Monitors statistics for the policer.

**Values** 1 to 63

***egress-queue-id***

Monitors statistics for this queue.

**Values** 1 to 8

***ingress-policer-id***

Monitors statistics for this policer.

**Values** 1 to 63

***ingress-queue-id***

Monitors statistics for this queue.

**Values** 1 to 32

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of subscriber-information.

### Output Example

```
A:Dut-A# monitor service subscriber nokia_100 sap 1/2/1:101 sla-profile sla_
default
=====
Monitor statistics for Subscriber nokia_100
=====
At time t = 0 sec (Base Statistics)
-----
SLA Profile Instance statistics
-----

```

	Packets	Octets
Off. HiPrio	: 0	0
Off. LowPrio	: 94531	30704535
Off. Uncolor	: 0	0

```

Queueing Stats (Ingress QoS Policy 1000)
Dro. HiPrio      : 0
Dro. LowPrio    : 7332
For. InProf     : 0
For. OutProf    : 87067

```

	Packets	Octets
Dro. HiPrio	: 0	0
Dro. LowPrio	: 7332	2510859
For. InProf	: 0	0
For. OutProf	: 87067	28152288

```

Queueing Stats (Egress QoS Policy 1000)
Dro. InProf     : 880
Dro. OutProf    : 0
For. InProf     : 90862
For. OutProf    : 0

```

	Packets	Octets
Dro. InProf	: 880	127660
Dro. OutProf	: 0	0
For. InProf	: 90862	12995616
For. OutProf	: 0	0

```

SLA Profile Instance per Queue statistics
-----

```

	Packets	Octets
Ingress Queue 1 (Unicast) (Priority)		
Off. HiPrio	: 0	0
Off. LowPrio	: 0	0
Off. Uncolor	: 0	0
Dro. HiPrio	: 0	0
Dro. LowPrio	: 0	0
For. InProf	: 0	0
For. OutProf	: 0	0

```

Ingress Queue 2 (Unicast) (Priority)
Off. HiPrio      : 0
Off. LowPrio    : 94531
Off. Uncolor    : 0
Dro. HiPrio    : 0
Dro. LowPrio   : 7332
For. InProf    : 0
For. OutProf   : 87067

```

	Packets	Octets
Off. HiPrio	: 0	0
Off. LowPrio	: 94531	30704535
Off. Uncolor	: 0	0
Dro. HiPrio	: 0	0
Dro. LowPrio	: 7332	2510859
For. InProf	: 0	0
For. OutProf	: 87067	28152288

```

Ingress Queue 3 (Unicast) (Priority)
Off. HiPrio      : 0
Off. LowPrio    : 0
Off. Uncolor    : 0
Dro. HiPrio    : 0
Dro. LowPrio   : 0
For. InProf    : 0

```

	Packets	Octets
Off. HiPrio	: 0	0
Off. LowPrio	: 0	0
Off. Uncolor	: 0	0
Dro. HiPrio	: 0	0
Dro. LowPrio	: 0	0
For. InProf	: 0	0

```

For. OutProf      : 0                0

Ingress Queue 11 (Multipoint) (Priority)
Off. HiPrio      : 0                0
Off. LowPrio     : 0                0
Off. Uncolor     : 0                0
Dro. HiPrio      : 0                0
Dro. LowPrio     : 0                0
For. InProf      : 0                0
For. OutProf     : 0                0

Egress Queue 1
Dro. InProf      : 880              127660
Dro. OutProf     : 0                0
For. InProf      : 90862           12995616
For. OutProf     : 0                0

Egress Queue 2
Dro. InProf      : 0                0
Dro. OutProf     : 0                0
For. InProf      : 0                0
For. OutProf     : 0                0

Egress Queue 3
Dro. InProf      : 0                0
Dro. OutProf     : 0                0
For. InProf      : 0                0
For. OutProf     : 0                0
=====
A:Dut-A#

A:Dut-A# monitor service subscriber nokia_100 sap 1/2/1:101 sla-
profile sla_default base rate
=====
Monitor statistics for Subscriber nokia_100
=====
At time t = 0 sec (Base Statistics)
-----
SLA Profile Instance statistics
-----
                Packets                Octets
Off. HiPrio      : 0                    0
Off. LowPrio     : 109099                35427060
Off. Uncolor     : 0                    0
Queueing Stats (Ingress QoS Policy 1000)
Dro. HiPrio      : 0                    0
Dro. LowPrio     : 8449                  2894798
For. InProf      : 0                    0
For. OutProf     : 100523                32489663
Queueing Stats (Egress QoS Policy 1000)
Dro. InProf      : 880                  127660
Dro. OutProf     : 0                    0
For. InProf      : 105578                15104553
For. OutProf     : 0                    0
-----
At time t = 11 sec (Mode: Rate)
-----
SLA Profile Instance statistics
-----
                Packets                Octets                % Port
                                Util.
Off. HiPrio      : 0                    0                    0.00
Off. LowPrio     : 1469                  477795                0.38
    
```

```

Off. Uncolor      : 0                0                0.00
Queueing Stats (Ingress QoS Policy 1000)
Dro. HiPrio      : 0                0                0.00
Dro. LowPrio     : 119              40691            0.03
For. InProf      : 0                0                0.00
For. OutProf     : 1349             437350           0.34
Queueing Stats (Egress QoS Policy 1000)
Dro. InProf      : 0                0                0.00
Dro. OutProf     : 0                0                0.00
For. InProf      : 1469             209129           0.16
For. OutProf     : 0                0                0.00
=====
A:Dut-A#
    
```

```

A:Dut-A# monitor service subscriber nokia_100 sap 1/2/1:101 sla-
profile sla_default ingress-queue-id 1
=====
Monitor statistics for Subscriber nokia_100
=====
At time t = 0 sec (Base Statistics)
-----
                Packets                Octets
Ingress Queue 1 (Unicast) (Priority)
Off. HiPrio      : 0                0
Off. LowPrio     : 0                0
Off. Uncolor     : 0                0
Dro. HiPrio      : 0                0
Dro. LowPrio     : 0                0
For. InProf      : 0                0
For. OutProf     : 0                0
=====
A:Dut-A#
    
```

```

A:Dut-A# monitor service subscriber nokia_100 sap 1/2/1:101 sla-profile
sla_default egress-queue-id 1
=====
Monitor statistics for Subscriber nokia_100
-----
At time t = 0 sec (Base Statistics)
-----
                Packets                Octets
Egress Queue 1
Dro. InProf      : 880              127660
Dro. OutProf     : 0                0
For. InProf      : 164366           23506178
For. OutProf     : 0                0
=====
A:Dut-A#
    
```

## subscriber

### Syntax

```

subscriber sub-ident-string [arbiter {root | name}] [ingress | egress] [interval seconds] [repeat repeat]
[absolute | rate]
    
```

## Context

[\[Tree\]](#) (monitor>qos>arbiter-stats subscriber)

## Full Context

monitor qos arbiter-stats subscriber

## Description

This command monitors arbiter statistics for a subscriber.

## Parameters

### *sub-ident-string*

Specifies an existing subscriber identification policy name, up to 32 characters.

### *name*

Specifies the name of the policer control policy arbiter.

### *root*

Specifies the arbiter to which this queue would be feeding.

### *ingress*

Displays arbiter name statistics applied on the ingress SAP.

### *egress*

Displays arbiter name statistics applied on the egress SAP.

### *seconds*

Configures the interval for each display in seconds.

**Values** 11 to 60

**Default** 11 seconds

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Displays rate-per-second for each statistic instead of the delta.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR



## subscriber

### Syntax

**subscriber** *sub-ident-string* [**scheduler** *scheduler-name*] [**ingress** | **egress**] [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**subscriber** *sub-ident-string* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**] **sap** *sap-id* **sla-profile** *sla-profile-name*

### Context

[\[Tree\]](#) (monitor>qos>scheduler-stats subscriber)

### Full Context

monitor qos scheduler-stats subscriber

### Description

This command monitors scheduler statistics for a subscriber.

### Parameters

#### ***sub-ident-string***

Specifies an existing subscriber identification policy name, up to 32 characters.

#### ***scheduler-name***

Specifies an existing QoS scheduler policy name, up to 32 characters. Scheduler names are configured in the **config>qos>scheduler-policy>tier** level context.

#### **ingress**

Displays *scheduler-name* statistics applied on the ingress SAP.

#### **egress**

Displays *scheduler-name* statistics applied on the egress SAP.

#### ***seconds***

Configures the interval for each display in seconds.

**Values** 11 to 60

**Default** 11 seconds

#### ***repeat***

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

#### **absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**sap-id**

Specifies the physical port identifier portion of the SAP definition.

**sla-profile-name**

Specifies the SLA profile belonging to the subscriber host, up to 32 characters.

**Platforms**

All

## subscriber

**Syntax**

**subscriber** *sub-ident-string* [**arbiter** {*name* | *root*}] [**ingress** | **egress**]

**Context**

[\[Tree\]](#) (clear>qos>arbiter-stats subscriber)

**Full Context**

clear qos arbiter-stats subscriber

**Description**

This command clears the arbiter statistics per subscriber.

**Parameters**

***sub-ident-string***

Specifies the subscriber identification policy name, up to 32 characters.

***name***

Specifies the arbiter name, up to 32 characters.

***root***

Specifies the arbiter root, up to 32 characters.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## subscriber

**Syntax**

**subscriber id** *subscriber-id* [**statistics**]

**subscriber all** [**statistics**]

## Context

[\[Tree\]](#) (clear>subscr-mgmt>host-tracking subscriber)

## Full Context

clear subscriber-mgmt host-tracking subscriber

## Description

This command clears the host tracking data for a subscriber.

## Parameters

### *subscriber-id*

Specifies subscriber ID, up to 32 characters.

### **all**

Clears all host tracking data.

### **statistics**

Clears statistical host tracking information for the specified subscriber ID.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## subscriber

## Syntax

**subscriber** *sub-ident-string* [**arbiter** *name* | *root*] [**ingress** | **egress**]

## Context

[\[Tree\]](#) (show>qos>arbiter-stats subscriber)

## Full Context

show qos arbiter-stats subscriber

## Description

This command displays the arbiter statistics per subscriber.

## Parameters

### *sub-ident-string*

Displays information about the specified subscriber, up to 32 characters for the 7950 XRS and VSR platforms and up to 64 characters for all other platforms.

### *name*

Specifies the arbiter name, up to 32 characters.

### *root*

Specifies the arbiter root, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## subscriber

### Syntax

**subscriber** *sub-ident-string* [**sla-profile** *sla-profile-name*] [**ingress** | **egress**] [**detail**] [**port** *port-id*]

### Context

**[Tree]** (show>qos>policer subscriber)

### Full Context

show qos policer subscriber

### Description

This command displays the policer statistics per port.

### Parameters

#### ***sub-ident-string***

Displays information about the specified subscriber, up to 32 characters for the 7950 XRS and VSR platforms and up to 64 characters for all other platforms.

#### ***sla-profile-name***

Specifies the queue group name, up to 32 characters.

#### ***port-id***

Displays information about the specified port.

**Values** *slot/mda/port*

eth-sat-id **esat-id/slot/port**

**esat** keyword

*id* 1 to 20

pxc-id **pxc-id.sub-port**

**pxc** keyword

*id* 1 to 64

*sub-port* a, b

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, 7950 XRS, VSR

## 22.52 subscriber-hosts

### subscriber-hosts

#### Syntax

**subscriber-hosts**

#### Context

[\[Tree\]](#) (clear>service>id subscriber-hosts)

#### Full Context

clear service id subscriber-hosts

#### Description

Commands in this context clear information for a particular subscriber host.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### subscriber-hosts

#### Syntax

**subscriber-hosts** [**sap** *sap-id*] [**ip** *ip-prefix/prefix-length*] [**mac** *ieee-address*] [**sub-profile** *sub-profile-name*] [**sla-profile** *sla-profile-name*] [**app-profile** *app-profile-name*] [**wholesaler** *service-id*] [**address-origin** *address-origin*] [**detail**] [**statistics**] [**spi-sharing-type** *spi-sharing-type*] [**spi-sharing-id** *spi-sharing-id*]

#### Context

[\[Tree\]](#) (show>service>id subscriber-hosts)

#### Full Context

show service id subscriber-hosts

#### Description

This command displays subscriber host information.

#### Parameters

**sap-id**

Specifies the physical port identifier portion of the SAP definition.

### ***ip-prefix/prefix-length***

Shows information for the specified IP address and mask.

**Values**    *ipv4-prefix* — a.b.c.d (host bits must be 0)  
              *ipv4-prefix-length* — 0 to 32  
              *ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)  
              x:x:x:x:x:d.d.d.d  
              x — [0..FFFF]H  
              d — [0..255]D  
              *ipv6-prefix-length* — 0 to 128

### ***ieee-address***

Displays information only for the specified 48-bit MAC address. The MAC address can be expressed in the form *aa:bb:cc:dd:ee:ff* or *aa-bb-cc-dd-ee-ff* where *aa*, *bb*, *cc*, *dd*, *ee* and *ff* are hexadecimal numbers.

### ***sub-profile-name***

Displays an existing subscriber profile name to be associated with the static subscriber host. The subscriber profile is configured in the **config>subscr-mgmt>sub-profile** context.

### ***sla-profile-name***

Displays subscriber host information for hosts with the specified SLA profile name.

### ***app-profile-name***

Specifies an existing SLA app profile name, up to 32 characters.

### ***service-id***

Specifies the ID that uniquely identifies a service.

**Values**    *service-id*: 1 to 214748364  
              *svc-name*: string, up to 64 characters.

### ***address-origin***

Specifies an address origin.

**Values**    *aaa*, *dynamic*, *static*, *bonding*

### ***detail***

Displays detailed information.

### ***statistics***

Displays the HTTP redirect statistics for the host. The redirect statistics are divided into HTTP GET and HTTP response for redirection.

### ***spi-sharing-type***

Displays subscriber host information for hosts with the specified SPI sharing type.

**Values**    *per-group*, *per-session-ipoe*, *per-session-ppp*

***spi-sharing-id***

Displays subscriber host information for hosts with the specified SPI sharing type and sharing identifier. The SPI group ID is:

- a sharing ID when the sharing type is per-group
- an internal PPP or IPoE sharing ID when the sharing type is per-PPP or per-IPoE session

**Values** 0 to 4294967295

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of subscriber host information.

**Output Example**

```
*A:Dut-C># show service id 3 subscriber-hosts
=====
Subscriber Host table
=====
Sap          Subscriber
  IP Address
  MAC Address      PPPoE-SID      Origin      Fwding State
-----
2/1/5:2          TEACAHEH74
  10.11.1.61
  00:80:00:00:00:0a      N/A          ARP-Host      Fwding
[pw-11:11]
  10.11.1.2
  00:00:11:11:01:02      N/A          ARP-Host      Fwding
[pw-11:12]
  10.11.1.3
  00:00:11:11:01:03      N/A          ARP-Host      Fwding
[pw-11:13]
  10.11.1.4
  00:00:11:11:01:04      N/A          ARP-Host      Fwding
[pw-22:22]
  10.22.1.2
  00:00:22:22:01:02      N/A          ARP-Host      Fwding

[pw-33:33]
  10.33.1.2
  00:00:33:33:01:02      N/A          ARP-Host      Fwding
-----
Number of subscriber hosts: 6
=====
*A:Dut-C>#
```

```
A:Dut-A# show service id 100 subscriber-hosts ip 10.100.1.5
=====
Subscriber Host table
=====
Sap          IP Address      MAC Address      Origin(*) Subscriber
-----
1/2/1:102    10.100.1.5      00:10:00:00:00:03  -/D/-  nokia_100
-----
```

```
Number of subscriber hosts : 1
=====
(*) S=Static Host, D=DHCP Lease, N=Non-Sub-Traffic
A:Dut-A#
```

The following table describes **show service-id subscriber hosts** output fields:

*Table 569: Service-ID Subscriber Hosts Field Descriptions*

Label	Description
Sap	The physical port identifier portion of the SAP definition.
IP Address	The IP address
MAC Address	The MAC address
PPPoE-SID	The PPPoE-SID of the originating subscriber
Origin Subscriber	The ID of the originating subscriber
Fwding State	The forwarding state
Number of subscriber hosts	The number of subscriber hosts

## 22.53 subscriber-identification

### subscriber-identification

#### Syntax

**subscriber-identification**

#### Context

[\[Tree\]](#) (show>router>nat subscriber-identification)

#### Full Context

show router nat subscriber-identification

#### Description

This command displays the NAT subscriber identification information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR



## subscriber-identification

### Syntax

**subscriber-identification subscriber-string** *subscriber-string*

### Context

**[Tree]** (clear>nat subscriber-identification)

### Full Context

clear nat subscriber-identification

### Description

This command clears NAT subscriber identification information.

### Parameters

***subscriber-string***

Specifies the subscriber identification string, up to 64 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 22.54 subscriber-mgmt

## subscriber-mgmt

### Syntax

**subscriber-mgmt**

### Context

**[Tree]** (clear subscriber-mgmt)

### Full Context

clear subscriber-mgmt

### Description

This command enables the context to clear subscriber management data.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## subscriber-mgmt

### Syntax

**subscriber-mgmt**

### Context

**[Tree]** (tools>perform subscriber-mgmt)

### Full Context

tools perform subscriber-mgmt

### Description

This command enables tools to control subscriber management.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## subscriber-mgmt

### Syntax

**subscriber-mgmt**

### Context

**[Tree]** (tools>dump subscriber-mgmt)

### Full Context

tools dump subscriber-mgmt

### Description

Commands in this context display subscriber management resources.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## subscriber-mgmt

### Syntax

**subscriber-mgmt**

## Context

[\[Tree\]](#) (show subscriber-mgmt)

## Full Context

show subscriber-mgmt

## Description

Commands in this context display subscriber management statistics.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 22.55 subscriber-using

### subscriber-using

## Syntax

```
subscriber-using [service-id service-id] [sap-id sap-id] [interface ip-int-name] [ip ip-address[/mask]]  
  [mac ieee-address] [sub-profile sub-profile-name] [sla-profile sla-profile-name] [app-profile app-  
  profile-name] [port port-id] [no-inter-dest-id | inter-dest-id intermediate-destination-id]
```

## Context

[\[Tree\]](#) (show>service subscriber-using)

## Full Context

show service subscriber-using

## Description

This command displays selective subscriber information using specific options.

## Parameters

### ***service-id***

Specifies the ID that uniquely identifies a service.

### ***sap-id***

Displays the physical port identifier portion of the SAP definition.

### ***ip-int-name***

Shows DHCP statistics on the specified interface.

### ***port-id***

Indicates the SAP or SDP for which this entry contains information.

***ip-address[/mask]***

Shows information for the specified IP address and mask.

***ieee-address***

Displays information only for the specified 48-bit MAC address. The MAC address can be expressed in the form *aa:bb:cc:dd:ee:ff* or *aa-bb-cc-dd-ee-ff* where *aa*, *bb*, *cc*, *dd*, *ee* and *ff* are hexadecimal numbers.

***sub-profile-name***

Displays an existing subscriber profile name to be associated with the static subscriber host. The subscriber profile is configured in the **config>subscr-mgmt>sub-profile** context.

***sla-profile-name***

Specifies an existing SLA profile name.

***app-profile-name***

Displays the profile of the specified application.

***intermediate-destination-id***

Indicates the intermediate destination identifier received from either the DHCP or RADIUS server, or the local user database.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of selective subscriber information.

**Output Example**

```
A:Dut-A# show service subscriber-using service-id 100
=====
Subscribers
=====
Subscriber                Sub Profile
-----
nokia_100                  sub_prof100
-----
Matching Subscribers : 1
=====
A:Dut-A#

A:Dut-A# show service subscriber-using
=====
Subscribers
=====
Subscriber                Sub Profile
-----
nokia_100                  sub_prof100
nokia_110                  sub_prof110
nokia_120                  sub_prof120
nokia_130                  sub_prof130
nokia_80                   sub_prof80
nokia_90                   sub_prof90
client_PC1                 sub_profPC1
static                     sub_default
-----
```

```
Matching Subscribers : 8
=====
A:Dut-A#
```

[Table 570: Subscriber Using Service ID Field Descriptions](#) describes subscriber using a specified service ID field descriptions.

*Table 570: Subscriber Using Service ID Field Descriptions*

Field	Description
Subscriber	The subscriber name
Sub Profile	The subscriber profile name
Matching Subscribers	The number of subscribers matching the search criteria

## 22.56 subscription

### subscription

#### Syntax

**subscription** *subscription-id* [**paths**]

**subscription**

#### Context

[\[Tree\]](#) (show>system>telemetry>grpc subscription)

#### Full Context

show system telemetry grpc subscription

#### Description

This command displays the active telemetry gRPC subscriptions.

#### Parameters

##### *subscription-id*

Specifies the unique subscription ID or number that is assigned by the SR OS gRPC server to each active telemetry subscription.

##### **paths**

Keyword that indicates that the **show** command output includes all paths with the respective subscription ID information.

#### Platforms

All

## Output

The following output is an example of the telemetry gRPC subscription information, and [Table 571: Show Telemetry gRPC Subscription Field Descriptions](#) describes the output fields.

### Output Example

```
A:node-6>show>system>telemetry>grpc# subscription
=====
Telemetry gRPC subscriptions
=====
Id          User          Mode          Port
Destination
-----
1          admin        stream        49648
192.99.5.0
-----
No. of gRPC Telemetry subscriptions: 1
=====
```

```
A:node-6>show>system>telemetry>grpc# subscription 2
=====
Telemetry gRPC subscription
=====
Subscription-id : 2
User           : admin
Destination    : 192.168.110.252
Port           : 54309
=====
```

```
A:node-6>show>system>telemetry>grpc# subscription 1 paths
=====
Telemetry gRPC subscription
=====
Subscription id : 1
User           : admin
Destination    : 192.99.5.0
Port           : 49648
Subscription mode : stream
-----
Paths
-----
Path           : /state/router[router-instance=]/interface[interface-
name=]/ipv4/oper-state
Path mode      : on-change
Heartbeat interval : 10000 ms
Sample interval : 10000 ms
Finished samples : 1
Deferred samples : 0
Total collection time : 6 ms
Min collection time : 6 ms
Avg collection time : 6 ms
Max collection time : 6 ms
-----
No. of paths   : 1
=====
```

Table 571: Show Telemetry gRPC Subscription Field Descriptions

Label	Description
Subscription id	Displays the subscription ID
User	Displays name of the user who started the subscription
Destination	Displays the destination IP address
Port	Displays the destination port
Subscription mode	once — Short-lived subscription that transmits a single sample stream — Long-lived subscription that transmits a sample at every interval
Encoding	Displays the encoding method used for telemetry notifications: bytes, json, json-ietf, proto
Notification count	Displays the notification count
Context count	Displays the context count
Notification bundling	Display the state of notification bundling. When enabled, additional statistics are displayed.
Path	Display the subscribed path
Path mode	Displays the path mode: on-change, sample, target-defined
Heartbeat interval	Displays the heartbeat interval
Finished samples	Displays the number of finished samples
Deferred samples	Displays the number of deferred samples
Total collection time	Displays the total collection time
Min collection time	Displays the minimum collection time
Avg collection time	Displays the average collection time
Max collection time	Displays the maximum collection time
No. of paths	Displays the total number of paths

## subscription

### Syntax

**subscription** *subscription-name* [**destinations** | **paths** | **scale-paths**]

**subscription**

### Context

[\[Tree\]](#) (show>system>telemetry>persistent subscription)

### Full Context

show system telemetry persistent subscription

### Description

This command displays the active persistent subscriptions.

### Parameters

#### ***subscription-name***

Specifies the subscription name, up to 32 characters.

#### ***destinations***

Indicates that the output includes all destinations with the respective subscription name.

#### ***paths***

Indicates that the output includes all paths with the respective subscription name.

#### ***scale-paths***

Indicates that the output includes all scale paths with the respective subscription name.

### Platforms

All

### Output

The following output is an example of persistent subscription fields and [Table 572: Show Persistent Subscription Field Descriptions](#) describes the output fields.

### Output Example

```
# show system telemetry persistent subscription
=====
Telemetry persistent subscriptions
=====
Name                                                    Admin  Oper
-----
miro                                                    Disabled Down
-----
No. of persistent Telemetry subscriptions: 1
```



```
=====
# show system telemetry persistent subscription miro
=====
```

```
Telemetry persistent subscription
=====
```

```
Subscription Name      : miro
Administrative State   : Disabled
Operational State     : Down
Oper Down Reason      : TODO
Subscription Id        : 0
Description            :
Sensor Group           : miro
Destination Group     : miro
Path Mode              : none
Sample Interval        : 10000 ms
Encoding               : json
=====
```

```
=====
# show system telemetry persistent subscription miro destinations
=====
```

```
Telemetry persistent subscription
=====
```

```
Subscription Name      : miro
Administrative State   : Disabled
Operational State     : Down
Oper Down Reason      : TODO
Subscription Id        : 0
Description            :
Sensor Group           : miro
Destination Group     : miro
Path Mode              : none
Sample Interval        : 10000 ms
Encoding               : json
-----
```

```
Destinations
-----
```

```
Destination           : 1.1.1.1
Port                   : 57400
Operational State     : Down
Oper Down Reason      : TODO
Router Instance        :
Establishment Time     : 1970/01/01 00:00:00
Retry Count            : 0
Operational Qos        : be
Notification Count     : 0
Total Notification Co* : 0
-----
```

```
No. of destinations   : 1
```

```
* indicates that the corresponding row element may have been truncated.
=====
```

```
=====
# show system telemetry persistent subscription miro paths
=====
```

```
Telemetry persistent subscription
=====
```

```
Subscription Name      : miro
Administrative State   : Disabled
Operational State     : Down
Oper Down Reason      : TODO
Subscription Id        : 0
Description            :
=====
```

```

Sensor Group      : miro
Destination Group : miro
Path Mode        : none
Sample Interval  : 10000 ms
Encoding         : json
-----
Paths
-----
Path              : miro
Finished Samples  : 0
Deferred Samples  : 0
Total Collection Time : 0 ms
Min Collection Time : 0 ms
Avg Collection Time : 0 ms
Max Collection Time : 0 ms
-----
No. of paths      : 1
=====
    
```

Table 572: Show Persistent Subscription Field Descriptions

Label	Description
Subscription Name	Displays the name of the persistent subscription.
Administrative State	Enabled — The administrative state of the persistent subscription is enabled. Disabled — The administrative state of the persistent subscription is disabled.
Operational State	Up — The operational state of the persistent subscription is up. Down — The operational state of the persistent subscription is down. Transition — The persistent subscription is waiting for the <b>delay-on-boot</b> timer to expire.
No. of persistent Telemetry subscriptions	Displays the number of persistent telemetry subscriptions.
Oper Down Reason	Displays the reason for the operational down state.
Subscription Id	Displays the subscription ID.
Description	Displays the description information of the subscription.
Sensor Group	Displays the sensor group name.
Destination Group	Displays the destination group name.
Path Mode	Displays the path mode.
Sample Interval	Displays the sample interval.

Label	Description
Encoding	json — The encoding method used for telemetry notifications. bytes — The encoding method used for telemetry notifications.
Destination	Displays the destination IP address.
Port	Displays the destination port.
Router Instance	Displays the router instance.
Establishment Time	Displays the date and time of the destination establishment.
Retry Count	Displays the number of missed TCP keepalive probes before closing a TCP connection.
Operational Qos	Displays the QoS marking type.
Notification Count	Displays the notification count.
Total Notification Co*	Displays the total notification count.
No. of destinations	Displays the total number of configured destinations.
Path	Displays the path name.
Finished Samples	Displays the number of finished samples.
Deferred Samples	Displays the number of deferred samples.
Total Collection Time	Displays the total collection time.
Min Collection Time	Displays the minimum collection time.
Avg Collection Time	Displays the average collection time.
Max Collection Time	Displays the maximum collection time.
No. of paths	Displays the total number of configured paths.

## 22.57 subscriptions

### subscriptions

#### Syntax

**subscriptions**

#### Context

[\[Tree\]](#) (tools>dump>log subscriptions)

#### Full Context

tools dump log subscriptions

#### Description

This command displays the list of CLI logs to which each CLI session is currently subscribed.

#### Platforms

All

#### Output

The following is an output example.

#### Output Example

```
=====
CLI log subscriptions of all CLI sessions
=====
Session ID      : 6
Type           : console
User           : admin
Login time      : 19OCT2017 08:24:14
Remote IP address: 192.168.102.122
Log ID         : 1
               : 2
               : 3
               : 4
               : 5
...
               : 20
-----
Session ID      : 25
Type           : telnet
User           : admin
Login time      : 19OCT2017 08:33:16
Remote IP address: 192.168.102.138
Log ID         : 1
               : 2
=====
```

[Table 573: Output Parameters](#) describes the output fields.

Table 573: Output Parameters

Label	Description
Session ID	Specifies the session ID.
Type	Specifies the type of session (console, telnet, and so on).
User	Specifies the name of the user.
Login time	Specifies the time the user logged in.
Remote IP address	Specifies the originating (client side) IP address of the session.
Log ID	Specifies the log ID.

## subscriptions

### Syntax

**subscriptions**

### Context

**[Tree]** (tools>dump>log subscriptions)

### Full Context

tools dump log subscriptions

### Description

This command displays the list of active subscriptions for this CLI session only.

### Platforms

All

### Output

The following output is an example of subscriptions information.

### Output Example

```
=====  
CLI logs this CLI session is subscribed to  
=====  
Log Id  
-----  
31  
72  
-----  
No. of subscriptions: 2  
=====
```

Table 574: Output Parameters describes subscriptions output fields.

Table 574: Output Parameters

Label	Description
No. of subscriptions	Specifies the number of active subscriptions.

## 22.58 summary

### summary

#### Syntax

summary

#### Context

[Tree] (show>router>dhcp6>server summary)

[Tree] (show>router>dhcp>server summary)

#### Full Context

show router dhcp6 local-dhcp-server summary

show router dhcp local-dhcp-server summary

#### Description

This command displays DHCP or DHCP6 server summary information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of DHCP summary information.

#### Output Example

```
*A:SUB-Dut-A# show router dhcp local-dhcp-server dhcpS2 summary
=====
DHCP server dhcpS2  router Base
=====
dhcpS2-P00L2
Admin State          : inService
Persistency State   : ok
User Data Base       : N/A
Use gateway IP address : disabled
Send force-renewals  : disabled
-----
Pool name : P00L2
-----
```

```

Subnet          Free      Stable    Declined  Offered  Remove-pending
-----
10.0.0.0/8      16384    0         0         0         0
Totals for pool 16384    0         0         0         0
-----
Totals for server 16384    0         0         0         0
-----
Associations
Admin
-----
No associations found
=====
*A:SUB-Dut-A#

*A:vsim-2# show router 500 dhcp local-dhcp-server "d4" summary
=====
DHCP server d4  router 500
=====
Admin State      : inService
Operational State : inService
Persistency State : shutdown
User Data Base   : N/A
Use gateway IP address : enabled (scope subnet)
Use pool from client : disabled
Send force-renewals : disabled
Creation Origin   : manual
Lease Hold Time   : 0h0m0s
Lease Hold Time For : N/A
User-ident        : mac-circuit-id
Failover Admin State : outOfService
Failover Oper State : shutdown
Failover Persist Key : N/A
Administrative MCLT : 0h10m0s
Operational MCLT   : 0h10m0s
Startup wait time  : 0h2m0s
Partner down delay : 23h59m59s
Ignore MCLT        : disabled
-----
Pool name : v4-1
-----
Failover Admin State : inService
Failover Oper State  : normal
Failover Persist Key : N/A
Administrative MCLT  : 0h10m0s
Operational MCLT     : 0h10m0s
Startup wait time    : 0h2m0s
Partner down delay    : 23h59m59s
Ignore MCLT          : disabled
-----
Subnet          Free      %      Stable  Declined  Offered  Rem-pend Drain
-----
10.20.20.0/24  (L) 10    90%    1        0         0         0         N
                  (R) N/A    0      0        N/A       N/A       N/A       N
Totals for pool 10      90%    1        0         0         0
-----
Totals for server 10      90%    1        0         0         0
-----
Interface associations
Interface
Admin
-----
l1
Up
-----
Local Address Assignment associations
    
```

```

Group interface                               Admin
-----
=====
*A:vsim-2#
    
```

## summary

### Syntax

**summary**

### Context

[\[Tree\]](#) (show>router>dhcp6 summary)

[\[Tree\]](#) (show>router>dhcp summary)

### Full Context

show router dhcp6 summary

show router dhcp summary

### Description

This command displays the status of the DHCP6 relay and DHCP snooping functions on each interface.

### Platforms

All

### Output

The following outputs are examples of DHCP and DHCP6 summary information.

#### Output Example

```

A:ALA-48>show>router>dhcp# summary
=====
Interface Name                Arp      Used/    Info    Admin
                              Populate Provided Option  State
-----
ccaiesif                      No       0/0     Keep    Down
ccanet6                       No       0/0     Keep    Down
iesBundle                     No       0/0     Keep    Up
spokeSDP-test                 No       0/0     Keep    Down
test                           No       0/0     Keep    Up
test1                          No       0/0     Keep    Up
test2                          No       0/0     Keep    Up
testA                          No       0/0     Keep    Up
testB                          No       0/0     Keep    Up
testIES                        No       0/0     Keep    Up
to-web                         No       0/0     Keep    Up
-----
Interfaces: 11
=====
A:ALA-48>show>router>dhcp#
    
```



```
*A:vsim-2# show router 500 dhcp summary
=====
DHCP Summary (Service: 500)
=====
Interface Name      Arp      Leases Per Interface/  Info  Admin
  SapId/Sdp         Populate Per Sap Limit         Option State
-----
g1                  No       1/1                    Keep  Up
  sap:1/1/7         1/1
l1                  No       0/0                    Keep  Down
-----
Interfaces: 2
=====
*A:vsim-2#
```

Table 575: DHCP Summary Field Descriptions describes DHCP summary output field descriptions.

Table 575: DHCP Summary Field Descriptions

Label	Description
Interface Name	The name of the router interface
ARP Populate	ARP populate is enabled or disabled
Used/Provided	The number of used and provided DHCP leases
Info Option	Option 82 processing is enabled or disabled on the interface
Admin State	The administrative state

### Output Example

```
*A:vsim-2# show router 500 dhcp6 summary
=====
DHCP6 Summary (Service: 500)
=====
Service Interfaces
-----
Interface Name      Nbr      Used/Max Relay  Admin  Oper Relay
  SapId             Resol.   Used/Max Server Admin  Oper Server
-----
l1                  No       0/0             Down  Down
                   0/8000    Down           Down
-----
Interfaces: 1
-----
Routed C0 Interfaces
-----
Interface Name      Used      Admin (proxy/relay)
  SapId
-----
g1                  1         Down/Up
  sap:1/1/7         1
-----
Interfaces: 1
                   1
=====
```

```

*A:vsim-2#
*A:vsim-2# show router 500 dhcp6 local-dhcp-server "d6" summary
=====
DHCP server d6  router 500
=====
Admin State           : inService
Operational State    : inService
Persistency State    : shutdown
Use Link Address     : enabled (scope subnet)
Use pool from client : disabled
Creation Origin      : manual
Lease Hold Time      : 0h0m0s
Lease Hold Time For  : N/A
User-ident           : duid
Interface-id-mapping : disabled
Ignore-rapid-commit  : disabled
Allow-lease-query    : disabled
Failover Admin State : outOfService
Failover Oper State  : shutdown
Failover Persist Key : N/A
Administrative MCLT  : 0h10m0s
Operational MCLT     : 0h10m0s
Startup wait time    : 0h2m0s
Partner down delay   : 23h59m59s
    Ignore MCLT      : disabled
-----
Pool name : v6-1
-----
Failover Admin State : inService
Failover Oper State  : preNormal
Failover Persist Key : N/A
Time Left            : 0h4m16s before state transition
Administrative MCLT  : 0h10m0s
Operational MCLT     : 0h10m0s
Startup wait time    : 0h2m0s
Partner down delay   : 23h59m59s
    Ignore MCLT      : disabled
-----
Prefix
-----
                                Stable  Declined Advert  Rem-pend Drain
-----
2001:dead:1::/56
                                (L)  1      0      0      0      N
2001:dead:2::/56
                                (R)  0      0      0      0      N
Totals for pool
                                1      0      0      0
-----
Totals for server
                                1      0      0      0
-----
Interface associations
Interface                    Admin
-----
l1                            Up
-----
Local Address Assignment associations
Group interface              Admin
-----
=====
*A:vsim-2#
    
```

Table 576: DHCP6 Summary Field Descriptions describes DHCP6 summary output fields.

Table 576: DHCP6 Summary Field Descriptions

Label	Description
Interface Name	The name of the router interface
ARP Populate	ARP populate is enabled or disabled
Used/Provided	The number of used and provided DHCP leases
Info Option	Option 82 processing enabled or disabled on the interface
Admin State	The administrative state

## summary

### Syntax

**summary** [**interface** *interface-name* | **saps**]

### Context

[\[Tree\]](#) (show>service>id>dhcp summary)

### Full Context

show service id dhcp summary

### Description

This command displays DHCP configuration summary information.

### Parameters

#### *interface-name*

Displays information for the specified IP interface.

**Values** 32 characters maximum.

#### **saps**

Displays SAPs per interface.

### Platforms

All

### Output

The following output is an example of DHCP summary information, and [Table 577: Show Service-ID DHCP Summary Field Descriptions](#) describes the output fields.

### Output Example

```
A:ALA-49# show service id 1 dhcp summary
=====
DHCP Summary, service 1
=====
Interface Name      Arp      Used/      Info      Admin
  SapId/Sdp         Populate Provided   Option   State
-----
SpokeSDP           No        0/0        Keep     Up
  sdp:spoke-3:4      0/0
test               No        0/0        Keep     Up
  sap:1/1/4:50/5    0/0
to-cel            No        0/0        Keep     Up
  sap:1/1/10:1     0/0
-----
Interfaces: 3
=====
A:ALA-49#
```

Table 577: Show Service-ID DHCP Summary Field Descriptions

Label	Description
Sap/Sdp	The configuration identification, expressed by a string containing "card/mda/port:/logical-id".
Snoop	Yes — The packets received from the DHCP clients were snooped. No — The packets received from the DHCP clients were not snooped.
Used/Provided	Used — The number of lease-states that are currently in use on a specific interface, that is, the number of clients on that interface got an IP address by DHCP. This value is always less than or equal to the 'Provided' field. Provided — The lease-populate value that is configured for a specific interface.
Arp Reply Agent	Displays whether or not there is proper handling of received ARP requests from subscribers.
Info Option	Keep — The existing information is kept on the packet and the router does not add any additional information. Replace — On ingress, the existing information-option is replaced with the information-option from the router. Drop —The packet is dropped and an error is logged.
Admin State	Indicates the administrative state.

## summary

### Syntax

**summary**

## Context

[\[Tree\]](#) (show>service>id>ppp summary)

## Full Context

show service id ppp summary

## Description

This command displays PPP summary information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## summary

## Syntax

summary

## Context

[\[Tree\]](#) (show>subscr-mgmt>gtp summary)

## Full Context

show subscriber-mgmt gtp summary

## Description

This command displays a GTP system summary of information.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of GTP summary information.

### Output Example

```
Node# show subscriber-mgmt gtp summary
=====
GTP system summary
=====
Actual number of MME                               : 1
Actual number of ENODE-B                           : 1
Actual number of S11 Sessions                       : 1
Actual number of Mobile Gateways                   : 0
Actual number of Uplinks                            : 0
Actual number of Uplinks in Hold                    : 0
=====
```

## summary

### Syntax

summary

### Context

[\[Tree\]](#) (show>service>id>pppoe summary)

### Full Context

show service id pppoe summary

### Description

This command displays PPPoE summary information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## summary

### Syntax

summary

### Context

[\[Tree\]](#) (show>service>id>ipoe summary)

### Full Context

show service id ipoe summary

### Description

This command displays a summary of IPoE information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## summary

### Syntax

summary

## Context

[\[Tree\]](#) (show>service>dynsvc summary)

## Full Context

show service dynamic-services summary

## Description

This command displays the global configuration summary for dynamic services:

- Service range
- Timers



### Note:

This command is not available in the MD-CLI.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of dynamic service summary information.

### Output Example

```
# show service dynamic-services summary
=====
Dynamic Services Summary
=====
range start           : 100000
range end             : 200001
setup timeout Access Accept : 30
=====
```

[Table 578: Dynamic Services Summary Field Descriptions](#) describes Dynamic Services summary fields.

*Table 578: Dynamic Services Summary Field Descriptions*

Output field	Description
range start	The start service ID to define the service range for dynamic services.
range end	The start and end service ID to define the service range for dynamic services.
setup timeout Access Accept	The timeout, in seconds, after which a script is canceled for setup actions received via RADIUS Access-Accept messages.

## summary

### Syntax

**summary**

### Context

**[Tree]** (show>service>id>slaac summary)

### Full Context

show service id slaac summary

### Description

This command displays a summary of all SLAAC hosts.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## summary

### Syntax

**summary** [**sap** *sap-id*]

### Context

**[Tree]** (show>service>id>host-connectivity-verify summary)

### Full Context

show service id host-connectivity-verify summary

### Description

This command displays a host connectivity verification summary.

### Parameters

***sap-id***

Specifies the SAP ID to show statistics for.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR



## summary

### Syntax

```
summary [all] [dns]  
summary [family family] [ group name] [dns]  
summary [family family] [ neighbor ip-address] [dns]
```

### Context

[\[Tree\]](#) (show>router>bgp summary)

### Full Context

```
show router bgp summary
```

### Description

This command displays a summary of BGP neighbor information.

If confederations are not configured, that information is not displayed in the command output.

The "State" field displays the global BGP operational state. The valid values are:

- Up — BGP global process is configured and running.
- Down — BGP global process is administratively shutdown and not running.
- Disabled — BGP global process is operationally disabled. The process must be restarted by the operator. For example, if a BGP peer is operationally disabled, the state in the summary table shows the state 'Disabled'.

### Parameters

#### **all**

Displays BGP peers in all instances.

#### **family**

Specifies the type of routing information to be distributed by the BGP instance.

**Values** ipv4, vpn-ipv4, ipv6, mcast-ipv4, vpn-ipv6, l2-vpn, mdt-safi, ms-pw, mvpn-ipv4, flow-ipv4, route-target, mcast-vpn-ipv4, mvpn-ipv6, flow-ipv6, evpn, mcast-ipv6, label-ipv4, label-ipv6, bgp-ls, mcast-vpn-ipv6, sr-policy-ipv4, sr-policy-ipv6, flow-vpn-ipv4, flow-vpn-ipv6

#### **name**

Specifies the group name up to 32 characters.

#### **ip-address**

Specifies the IPv4 or IPv6 address

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x[-interface]  
x:x:x:x:x:d.d.d.d[-interface]

x — 0 to FFFF (hexadecimal)

d — 0 to 255 (decimal)

interface — mandatory for link local address, up to 32 characters

**dns**

Displays the reverse DNS resolution of BGP neighbor.

**Platforms**

All

**Output**

The following output is an example of BGP summary information, and [Table 579: Show BGP Summary Field Descriptions](#) describes the output fields.

**Output Example**

```
A:Dut-B>config>router>bgp# show router bgp summary
=====
BGP Router ID:1.0.0.2          AS:1          Local AS:1
=====
BGP Admin State      : Up          BGP Oper State      : Up
Total Peer Groups    : 1          Total Peers         : 1
Total VPN Peer Groups : 0          Total VPN Peers     : 0
Current Internal Groups : 1        Max Internal Groups : 1
Total BGP Paths       : 19         Total Path Memory   : 6840

*A:ALA-12# show router 3 bgp summary
=====
BGP Router ID : 10.0.0.14      AS : 65206   Local AS : 65206
=====
BGP Admin State      : Up          BGP Oper State      : Up
Confederation AS     : 40000
Member Confederations : 65205 65206 65207 65208

Number of Peer Groups : 2          Number of Peers     : 7
Total BGP Active Routes : 86689    Total BGP Routes    : 116999
Total BGP Paths       : 35860    Total Path Memory   : 2749476
Total Supressed Routes : 0          Total History Routes : 0
Total Decayed Routes  : 0

BGP Summary
=====
Neighbor      AS PktRcvd PktSent InQ OutQ  Up/Down State|Recv/Actv/Sent
-----
10.0.0.1      65206    5  21849  0   0  00h01m29s 32/0/86683
10.0.0.12     65206    0    0    0   0  00h01m29s Active
10.0.0.13     65206    5  10545  0   50 00h01m29s 6/0/86683
10.0.0.15     65205    0    0    0   0  00h01m29s Active
10.0.0.16     65206    5   9636  0   50 00h01m29s 6/0/86683
10.0.27.1     2        0    0    0   0  00h01m29s Active
10.0.28.1     60203  22512  15   0   0  00h01m29s 116955/86689/9
=====
*A:ALA-12#

*A:ALA-12# show router 3 bgp summary dns
=====
BGP Router ID : 10.0.0.14 AS : 65206 Local AS : 65206
```

```

=====
BGP Admin State : Up BGP Oper State : Up
Confederation AS : 40000
Member Confederations : 65205 65206 65207 65208
Number of Peer Groups : 2 Number of Peers : 7
Total BGP Active Routes : 86689 Total BGP Routes : 116999
Total BGP Paths : 35860 Total Path Memory : 2749476
Total Supressed Routes : 0 Total History Routes : 0
Total Decayed Routes : 0
=====
BGP Summary
=====
Neighbor
  Name
  Description
    AS PktRcvd PktSent InQ OutQ Up/Down State|Recv/Actv/Sent
-----
10.0.0.1
  dut1.nokia.com
    65206 5 21849 0 0 00h01m29s 32/0/86683
10.0.0.12
  dut2.nokia.com
    65206 0 0 0 0 00h01m29s Active
10.0.0.13
  dut3.nokia.com
    65206 5 10545 0 50 00h01m29s 6/0/86683
10.0.0.15
  dut4.nokia.com
    65205 0 0 0 0 00h01m29s Active
10.0.0.16
  10.0.0.16
    65206 5 9636 0 50 00h01m29s 6/0/86683
10.0.27.1
  dut6.nokia.com
    2 0 0 0 0 00h01m29s Active
10.0.28.1
  10.0.28.1
    60203 22512 15 0 0 00h01m29s 116955/86689/9
=====
    
```

Table 579: Show BGP Summary Field Descriptions

Label	Description
BGP Router ID	The local BGP router ID
AS	The configured autonomous system number
Local AS	The configured local AS setting, if not configured it is the same as the system AS
BGP Admin State	Down — BGP is administratively disabled Up — BGP is administratively enabled
BGP Oper State	Down — BGP is operationally disabled Up — BGP is operationally enabled
Confederation AS	The configured confederation AS

Label	Description
Current Internal Groups	The current number of internal BGP peer groups. BGP peers are grouped within the BGP software to optimize the building of UPDATE messages towards peers with a similar configuration. An internal group is not the same as a configured BGP peer group.
Max Internal Groups	The maximum number of internal BGP peer groups that existed at any point since the last restart of BGP. BGP peers are grouped within the BGP software to optimize the building of UPDATE messages towards peers with a similar configuration. An internal group is not the same as a configured BGP peer group.
Member Confederations	The configured members of the BGP confederation
Number of Peer Groups	The total number of configured BGP peer groups
Number of Peers	The total number of configured BGP peers
Total BGP Active Routes	The total number of BGP routes used in the forwarding table
Total BGP Routes	The total number of BGP routes learned from BGP peers
Total BGP Paths	The total number of unique sets of BGP path attributes learned from BGP peers
Total Path Memory	Total amount of memory used to store the path attributes
Total Suppressed Routes	Total number of suppressed routes due to route damping
Total History Routes	Total number of routes with history due to route damping
Total Decayed Routes	Total number of decayed routes due to route damping
Neighbor	BGP neighbor address
Name	DNS name of the BGP neighbor
AS (Neighbor)	BGP neighbor autonomous system number
PktRcvd	Total number of packets received from the BGP neighbor
PktSent	Total number of packets sent to the BGP neighbor
InQ	The number of BGP messages to be processed
OutQ	The number of BGP messages to be transmitted

Label	Description
Up/Down	The amount of time that the BGP neighbor has either been established or not established depending on its current state
State Recv/Actv/Sent	The BGP neighbor's current state (if not established) or the number of received routes, active routes and sent routes (if established)

## summary

### Syntax

**summary** [session *ip-addr*[*label-space*]] [ **ipv4** | **ipv6**]

### Context

[\[Tree\]](#) (show>router>ldp>bindings summary)

### Full Context

show router ldp bindings summary

### Description

This command displays a summary of LDP bindings.

### Parameters

**session** *ip-addr*[*label-space*]

Specifies the IP address and label space identifier.

**Values** <*ip-addr*[*label-spa*\*> : *ipv4-address*:*label-space* *ipv6-address*[*label-space*] *label-space* - [0 to 65535]

**ipv4**

Displays IPv4 summary bindings information.

**ipv6**

Displays IPv6 summary bindings information.

### Platforms

All

## summary

### Syntax

**summary**

## Context

[\[Tree\]](#) (show>router>mpls-labels summary)

## Full Context

show router mpls-labels summary

## Description

This command displays the MPLS label summary.

## Platforms

All

## Output

The following output is an example of MPLS label summary information.

[Table 580: MPLS Label Summary Output Fields](#) describes MPLS label summary output fields.

## Output Example

```
*A:cses-V23>show>router>mpls-labels># show router mpls-labels summary
=====
Mpls-Labels Summary
=====
Static Label Range           : 18400
Bgp Labels Hold Timer       : 30
Segment Routing Start Label  : 0
Segment Routing End Label    : 0
Reserved Label Block Name    :
                             test reserved-label
=====
```

*Table 580: MPLS Label Summary Output Fields*

Label	Description
Static Label Range	Displays the static label range.
Bgp Labels Hold Timer	Displays the BGP labels hold timer.
Segment Routing Start Label	Displays the segment routing start label.
Segment Routing End Label	Displays the segment routing end label.
Reserved Label Block Name	Displays the reserved label block name.

## summary

### Syntax

summary

### Context

[\[Tree\]](#) (show>app-assure>group>http-enrich summary)

### Full Context

show application-assurance group http-enrich summary

### Description

This command displays summarized HTTP enrichment information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## summary

### Syntax

summary

### Context

[\[Tree\]](#) (show>app-assure>group>policy summary)

### Full Context

show application-assurance group policy summary

### Description

This command displays application-assurance policy summary information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## summary

### Syntax

summary

## Context

[Tree] (show>app-assure>group>aa-sub summary)

## Full Context

show application-assurance group aa-sub summary

## Description

This command displays a summary of statistics for a specific aa-sub.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the summary information.

### Output Example

```
A:ALU>show>app-assure>group>aa-sub# summary
=====
Application-Assurance Subscriber Summary
=====
AA-Subscriber      : TestSubscriberName
ISA assigned       : 3/2
App-Profile        : Power_Profile
App-Profile divert : Yes
Sub-quarantined    : No
Capacity cost      : 1
-----
Traffic            Octets           Packets           Flows
-----
Admitted from subscriber: 7092548           52935           2843
Denied from subscriber:  51160             617             374
Active flows from subscriber:
Admitted to subscriber:  73705675         73538           1453
Denied to subscriber:    0                 0                0
Active flows to subscriber:
Total flow duration:    12750 seconds
Terminated flows:
Short Duration flows:
Medium Duration flows:
Long Duration flows:
-----
Top App-Groups      Octets           Packets           Flows
-----
MultiMedia          29060053         29961            138
Tunneling            19659289         33535            164
Web                  14856331         19829            932
=====
A:ALU>show>app-assure>group>aa-sub#
```



## summary

### Syntax

summary

### Context

[\[Tree\]](#) (tools>dump>app-assure>group summary)

### Full Context

tools dump application-assurance group summary

### Description

This command displays subscriber summary information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## summary

### Syntax

summary

### Context

[\[Tree\]](#) (show>router>firewall summary)

### Full Context

show router firewall summary

### Description

This command displays a simple overview of all firewall configurations specific to the routing instance.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of summary firewall information.

### Output Example

```
Node# show router 4 firewall summary
=====
Firewall policies
=====
Policy                               : firewall_dhcp6_4
```

```

-----
Domain                : domain_dhcp6_4
ISA group             : 1
Administrative state  : in-service
Policy                : firewall_slaac_4
-----
Domain                : domain_slaac_4
ISA group             : 1
Administrative state  : in-service
-----
No. of policies: 2
=====
    
```

## summary

### Syntax

**summary**

### Context

[\[Tree\]](#) (show>router>nat summary)

### Full Context

show router nat summary

### Description

This command displays the NAT information summary.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of this command.

#### Output Example

```

*A:SR12_PPP0E>show>router>nat# show router Base nat summary
=====
NAT pools
=====
Pool                NAT-group  Type         Admin-state
-----
privpool            3          largeScale  inService
pubpool             1          largeScale  inService
-----
No. of pools: 2
=====
A:SR12_PPP0E#
    
```

The following is an output example showing NAT import policy information.

```

*A:Dut-C>config>service>vprn>nat>inside# /show router 101 nat summary
=====
    
```

```
ISA NAT group redundancy          : active-standby
=====
Subscriber identification
=====
Admin state                       : outOfService
Attribute vendor                  : nokia
Attribute type                   : alc-sub-string
Description                       : (Not Specified)
Drop unidentified traffic         : false
Radius proxy server router       : (Not Specified)
Radius proxy server name         : (Not Specified)
Last management change           : 05/11/2021 11:09:25
=====
NAT Redundancy
=====
Peer                             : (Not Specified)
IPv6 peer                        : (Not Specified)
Steering route                   : (Not Specified)
=====
NAT policies
=====
Policy                           : n44Pool1-1
-----
Inside router                    : vprn101
Outside router                   : vprn601
Pool                             : n44Pool1
Type                             : default
Active                           : true
-----
No. of policies: 1
=====
NAT-Import policies
=====
Policy 1 : policystatment1
Policy 2 : bgpNat3
Policy 3 : (Not Specified)
Policy 4 : (Not Specified)
Policy 5 : (Not Specified)
=====
Destination NAT
=====
Inside source prefix list       : (Not Specified)
Outside route limit             : 32768
Outside routes                   : 0
=====
Large Scale NAT destination prefixes
=====
Destination prefix              Nat policy
-----
200.0.0.0/16                   n44Pool1-1
=====
*A:Dut-C>config>service>vprn>nat>inside#
```

## summary

### Syntax

**summary**

### Context

[\[Tree\]](#) (show>grp-encryp summary)

### Full Context

show group-encryption summary

### Description

This command shows NGE summary information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of NGE summary information, and [Table 581: Show Group Encryption Summary Output Fields](#) describes the fields.

### Output Example

```
domain1>show>grp-encryp# summary
=====
Group Encryption
=====
Encryption Label : 34
=====
Encryption Keygroup
=====
Id Name          Auth Algo   Encr Algo   Active OutSA
-----
2  KG1_secure    sha256     aes128      6
4                   sha256     aes128      0
-----
No. of Encryption Keygroup: 2
=====
domain1>show>grp-encryp#
```

*Table 581: Show Group Encryption Summary Output Fields*

Label	Description
<b>Group Encryption</b>	
Encryption Label	The unique network-wide group encryption label
<b>Encryption Keygroup</b>	

Label	Description
Id	The key group identifier value
Name	The key group name
Auth Algo	The authentication algorithm used by the key group
Encr Algo	The encryption algorithm used by the key group
Active OutSA	The active outbound SA for the key group
No. of Encryption Keygroup	The number of encryption key groups currently configured on the node

## summary

### Syntax

**summary**

### Context

[\[Tree\]](#) (show>router>seg-rt>sr-policies summary)

### Full Context

show router segment-routing sr-policies summary

### Description

This command displays summary information about all policies: BGP, static local, and static non-local.

### Platforms

All

### Output

The following output is an example of policies summary information.

### Output Example

```
*A:Dut-A>config>router# show router segment-routing sr-policies summary
```

```
=====
SR-Policies Summary
=====
```

```
Admin Status       : Up
Ingress Stats      : N/A           Egress Stats       : N/A
Resv Label Blk Name:
TTM Preference     : 14           BSID Allocated     : 0
Static Local Policies : 2         Active Static Lcl Pol : 2
Static Non Local Pol : 0
BGP Policies       : 0           Active BGP Policies : 0
=====
```

## summary

### Syntax

**summary**

### Context

[\[Tree\]](#) (show>subscr-mgmt>pfcp summary)

### Full Context

show subscriber-mgmt pfcp summary

### Description

This command displays PFCP session and association counters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of PFCP summary information.

### Output Example

```
A:BNG-UPF# show subscriber-mgmt pfcp summary
=====
PFCP system summary
=====
Actual number of associations           : 1
Actual number of PFCP sessions         : 2
  Actual number of PFCP sessions in setup : 0
  Actual number of default tunnels       : 1
  Actual number of PPP sessions         : 1
  Actual number of IPOE sessions        : 0
=====
```

## summary

### Syntax

**summary**

### Context

[\[Tree\]](#) (show>router>srv6 summary)

### Full Context

show router segment-routing-v6 summary

## Description

This command displays the summary SRv6 status.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR

```
summary
```

## Syntax

```
summary
```

## Context

[\[Tree\]](#) (show>li>x-interfaces summary)

## Full Context

```
show li x-interfaces summary
```

## Description

This command displays a summary of the status of the X1, X2, and X3 interfaces.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

```
summary
```

## Syntax

```
summary
```

## Context

[\[Tree\]](#) (tools>dump>system>cpm-http-redirect summary)

## Full Context

```
tools dump system cpm-http-redirect summary
```

## Description

This command displays the summary of the **cpm-http-redirect optimized-mode** information for the total number of hosts and connections currently in use. This output can also be used to compare the current system utilization with the maximum system scale.

## Platforms

All

## Output

The following output is an example of the **summary** information.

### Output Example

```
A# tools dump system cpm-http-redirect summary
=====
CPM HTTP Redirect summary
=====
Actual number of hosts                : 0
Actual number of connections          : 0
Number of hosts created in the last second : 0
Number of connections created in the last second : 0
=====
```

## summary

### Syntax

```
summary [family] [egress-if port-id]
summary [family] [egress-lsp tunnel-id]
summary [egress-nh ip-address] [family]
```

### Context

[\[Tree\]](#) (show>router>ldp>bindings>active summary)

### Full Context

```
show router ldp bindings active summary
```

### Description

This command displays a summary of the LDP active bindings.

### Parameters

#### ***ip-address***

Specifies the IPv4 or IPv6 address.

#### **Values**

ipv4-address:	a.b.c.d
ipv6-address:	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x: [0 to FFFF]H
	d: [0 to 255]D

#### ***family***

Specifies the address family.



**Values** ipv4, ipv6

***port-id***

Specifies the port ID.

**Values**

*slot[/mda[/port]]* or *slot/mda/port [.channel]*

aps-id **aps-group-id**[.channel]

**aps** keyword

*group-id* 1 to 128

eth-sat-id **esat-id**[/slot/[u]port]

**esat** keyword

*id* 1 to 20

*u* keyword for up-link port

tdm-sat-id **tsat-id**[/slot/[u]port.channel]

**tsat** keyword

*id* 1 to 20

**u** keyword for up-link port

pxc-id **pxc-id.sub-port**

**pxc** keyword

*id* 1 to 64

*sub-port* a to b

***tunnel-id***

Specifies the tunnel ID.

**Values** 0 to 4294967295

**Platforms**

All

## 22.59 summary-address

### summary-address

#### Syntax

**summary-address** [*ip-address* [/i>prefix-length]] [**detail**]

#### Context

[\[Tree\]](#) (show>router>isis summary-address)

#### Full Context

show router isis summary-address

#### Description

This command displays IS-IS summary addresses information.

#### Parameters

**ip-prefix**[/*prefix-length*]

Displays the summary address information for a certain IPv4 or IPv6 address.

**detail**

Keyword to display detailed information.

#### Platforms

All

#### Output

The following output is an example of summary address information and [Table 582: Output fields: IS-IS summary address](#) describes the IS-IS summary address output fields.

#### Output example

```
A:node-2# show router isis summary-address
=====
Rtr Base ISIS Instance 0 Summary Address
=====
Address                               Level   Tag      Algo  UPA
-----
1.1.1.2/32                             L1L2   None     0     Yes
1.1.2.0/24                              L1     None     N.A.  No
1.2.3.4/32                             L1L2   4294967295 128  No
-----
Summary Addresses : 3
=====
```

The following output is an example of detailed summary address information and [Table 582: Output fields: IS-IS summary address](#) describes the IS-IS summary address output fields.

**Output example**

```
A:node-2# show router isis summary-address detail

=====
Rtr Base ISIS Instance 0 Summary Address (detail)
=====
-----
Summary Address : 1.1.1.2/32
-----
Level           : L1L2
Tag             : None
Algorithm       : 0
Advertise Unreachable : Enabled
Match Route Tag : 1234
Advertise Route Tag : None
-----
Summary Address : 1.1.2.0/24
-----
Level           : L1
Tag             : None
Algorithm       : N.A.
Advertise Unreachable : Disabled
Match Route Tag : N.A.
Advertise Route Tag : N.A.
-----
Summary Address : 1.2.3.4/32
-----
Level           : L1L2
Tag             : 4294967295
Algorithm       : 128
Advertise Unreachable : Disabled
Match Route Tag : N.A.
Advertise Route Tag : N.A.
=====
```

*Table 582: Output fields: IS-IS summary address*

Label	Description
Address or Summary Address	Displays the IP address
Level	Displays the IS-IS level from which the prefix is summarized
Tag	Displays the tag number or displays as None if no tag number exists
Algo or Algorithm	Displays the flexible algorithm number if it exists
UPA	Displays if the summary is configured for the originating UPA when suddenly a summary member route disappears

Label	Description
Advertise Unreachable	Displays if advertise unreachable is enabled
Match Route Tag	When configured, displays the match route tag if it is applicable. When advertise unreachable is enabled, but no route tag is configured, this field displays as None. When advertise unreachable is disabled, this field displays as N.A.
Advertise Route Tag	When configured, displays the advertise route tag. When advertise unreachable is enabled, but no route tag is configured this field displays as None. When advertise unreachable is disabled, this field displays as N.A.

## 22.60 svlan-statistics

### svlan-statistics

#### Syntax

**svlan-statistics port *port-id* all-svlans**

**svlan-statistics port *port-id* svlan *tag***

#### Context

[\[Tree\]](#) (show>subscr-mgmt svlan-statistics)

#### Full Context

show subscriber-mgmt svlan-statistics

#### Description

This command displays S-VLAN statistics.

#### Parameters

***port-id***

Specifies the physical port ID in the *slot/mda/port* format of the S-VLAN.

#### Values

*slot/mda/port*

lag-id                      lag-id

lag                              keyword

	id	1 to 800
pw-id	<i>pw-id</i>	
	id	1 to 32767

**all-svlans**

Displays statistics for all S-VLANs on the port.

**svlan**

Displays information about the S-VLAN.

**tag**

Specifies a valid S-VLAN identifier.

**Values** 0 to 4095

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of S-VLAN statistics information.

The collected statistics per outer VLAN tag, including the number of subscriber hosts is captured in the output.

**Output Example**

```
*A:Dut-C# show subscriber-mgmt svlan-statistics port 1/1/2 all-svlans
=====
Subscriber VLAN statistics for port 1/1/2 vlan 51
=====
-----
Ingress          Egress
-----
IP packets       5             5
Bytes in IP packets 670          670
Last cleared     12/18/2020 10:03:48
-----
Number of active subscriber hosts : 1
=====
Subscriber VLAN statistics for port 1/1/2 vlan 113
=====
-----
Ingress          Egress
-----
IP packets       10            10
Bytes in IP packets 1320         1320
Last cleared     12/18/2020 10:03:48
-----
Number of active subscriber hosts : 2
=====
*A:Dut-C#
```

This counter counts subscriber hosts (represented as individual IP addresses) and not sessions. This is shown in the output of the following commands where there is only one session but two subscriber hosts counted in the VLAN statistics.

```
*A:Dut-C# show service active-subscribers
=====
Active Subscribers
=====
Subscriber test-1
      (sub_profile)
-----
(1) SLA Profile Instance sap:1/1/5:4 - sla:sla_profile
-----
IP Address      MAC Address      Session      Origin      Svc      Fwd
-----
10.2.3.41      00:00:00:00:00:04  IPoE        DHCP        10       Y
90:64:1:2::/64 00:00:00:00:00:04  IPoE        SLAAC       10       Y
-----
Number of active subscribers : 1
=====
*A:Dut-C#

*A:Dut-C# show subscriber-mgmt svlan-statistics port 1/1/5 all-svlans
=====
Subscriber VLAN statistics for port 1/1/5 vlan 4
=====
              Ingress      Egress
-----
IP packets          0          0
Bytes in IP packets 0          0
-----
Number of active subscriber hosts : 2
=====
*A:Dut-C#
```

## svlan-statistics

### Syntax

**svlan-statistics port *port-id* all-svlans**

**svlan-statistics port *port-id* svlan *tag***

### Context

**[Tree]** (clear>subscr-mgmt svlan-statistics)

### Full Context

clear subscriber-mgmt svlan-statistics

## Description

This command clears Subscriber-VLAN statistics.

## Parameters

### *port-id*

Specifies the physical port ID in the *slot/mda/port* format of the S-VLAN.

### *all-svlans*

Clears statistics for all S-VLANs on the port.

### *svlan*

Clears information associated with the S-VLAN.

### *tag*

Specifies a valid S-VLAN identifier.

**Values** 0 to 4095

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 22.61 switch-fabric

### switch-fabric

## Syntax

**switch-fabric** [**exclude-sfm** *sfm-list*]

**switch-fabric high-bandwidth-multicast**

**switch-fabric failure-recovery**

## Context

[\[Tree\]](#) (show>system switch-fabric)

## Full Context

show system switch-fabric

## Description

This command displays switch fabric information. When an MDA is not provisioned in an XCM, no information is displayed relating to that MDA. To display the forwarding capacity and multicast planes corresponding to that MDA, regardless of whether an XMA is equipped, an **mda-type** must be provisioned for that MDA.

## Parameters

### *sfm-list*

Specifies the SFMs to exclude from the displayed switch fabric information, in the format of a comma separated list of SFM numbers from 1 to 16, depending on the platform.

**Values** *sfm-name* [,*sfm-name*...]  
 where *sfm-name* can be 1 to 16

### *high-bandwidth-multicast*

Specifies that MDA information about the switch-fabric plane's high bandwidth multicast traffic tap allocation is displayed.

### *failure-recovery*

Specifies to display information about the automatic switch fabric recovery process. The SFMs are listed in numerical order and are only shown when the recovery process is in progress or it has completed.

## Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-e, 7750 SR-1s, 7750 SR-2s, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## Output

The following outputs are examples of switch fabric information, and the tables describe the output fields.

- [Output Example show system switch-fabric](#); [Table 583: Switch Fabric Output Field Descriptions](#)
- [Output Example show system switch-fabric exclude-sfm](#); [Table 583: Switch Fabric Output Field Descriptions](#)
- [Output Example show system switch-fabric high-bandwidth-multicast](#); [Table 584: Switch Fabric High Bandwidth Multicast Output Field Descriptions](#)
- [Output Example show system switch-fabric failure-recovery \(7750 SR\)](#); [Table 585: Show Automatic Switch Fabric Recovery Information Fields](#)

### Output Example show system switch-fabric

```
*A:DUT-A# show system switch-fabric
=====
Switch Fabric
=====
Slot/FP           Min. Forwarding Capacity   Max. Forwarding Capacity
-----
1/1                100%                       100%
1/2                100%                       100%
1/5                100%                       100%
1/6                100%                       100%
3/1                100%                       100%
3/5                100%                       100%
3/6                100%                       100%
5/1                100%                       100%
5/2                100%                       100%
5/3                100%                       100%
5/5                100%                       100%
5/6                100%                       100%
5/7                100%                       100%
5/8                100%                       100%
```



```

A          100%          100%
B          100%          100%
-----
sfm-loss-threshold: 2
=====
    
```

**Table 583: Switch Fabric Output Field Descriptions** describes the switch fabric output fields.

*Table 583: Switch Fabric Output Field Descriptions*

Label	Description
Slot/FP	Displays either the FP (uniquely identified by an IOM number and FP number) or a CPM letter.
Min. Forwarding Capacity	Displays the minimum forwarding capacity of the slot and XMA/MDA as a percentage.
Max. Forwarding Capacity	Displays the maximum forwarding capacity of the slot and XMA/MDA as a percentage.
Sfm-loss-threshold	Displays the number of SFMs that are permitted to fail prior to SFM overload. Supported on SR-7s and SR-14s platforms only.

**Output Example show system switch-fabric exclude-sfm**

```

*B:DUT-A# show system switch-fabric exclude-sfm 1,2,3
=====
Switch Fabric
=====
Slot/FP          Min. Forwarding Capacity    Max. Forwarding Capacity
-----
1/1              69%                        71%
1/2              69%                        71%
1/5              100%                       100%
1/6              100%                       100%
3/1              100%                       100%
3/5              69%                        69%
3/6              69%                        69%
5/1              69%                        71%
5/2              69%                        71%
5/3              69%                        71%
5/5              69%                        71%
5/6              69%                        71%
5/7              69%                        71%
5/8              69%                        71%
A                100%                       100%
B                100%                       100%
-----
sfm-loss-threshold: 2
=====
    
```

**Output Example show system switch-fabric high-bandwidth-multicast**

```

*A:PE-1# show system switch-fabric high-bandwidth-multicast
=====
Switch Fabric
=====
Cap:              Planes:
    
```

```

Slot/FP  Min  Max  Hbm Grp  Hi | Lo
-----
2/1      100% 100% No  0    1  0  2  3  4  5  6  7  8  9 10 11 12 13 14 | 15
5/1      100% 100% No  0    17 16 18 19 20 21 22 23 24 25 26 27 28 29 30 | 31
A         100% 100% No  0    40 | 40
B         100% 100% No  0    24 | 24
=====
*A:PE-1#
    
```

Table 584: [Switch Fabric High Bandwidth Multicast Output Field Descriptions](#) describes the switch fabric high-bandwidth multicast output fields.

Table 584: Switch Fabric High Bandwidth Multicast Output Field Descriptions

Label	Description
Slot/FP	Displays either the FP (uniquely identified by an IOM number and FP number) or a CPM letter.
Cap Min	Displays the minimum forwarding capacity of the slot and XMA/MDA as a percentage.
Cap Max	Displays the maximum forwarding capacity of the slot and XMA/MDA as a percentage.
Hbm	Displays high-bandwidth multicast traffic information, which can be used to avoid overlapping planes on FPs that have a lot of multicast ingress traffic.
Grp	Displays high-bandwidth multicast groups for each FP.
Planes Hi   Lo	Displays plane information. When 2 FPs are in a different group, no plane overlap occurs.

**Output Example show system switch-fabric failure-recovery (7750 SR)**

```

A:Dut-B# show system switch-fabric failure-recovery
=====
Automatic Switch Fabric Failure Recovery
=====
Admin state : enabled
Oper state  : recoveryInProgress
-----
SFM Slot      State          Time
-----
1              pending        02/11/2021 21:05:45
2              inProgress     02/11/2021 21:05:45
=====
A:Dut-B#
    
```

Table 585: [Show Automatic Switch Fabric Recovery Information Fields](#) describes the automatic switch fabric recovery process output fields.

Table 585: Show Automatic Switch Fabric Recovery Information Fields

Label	Description
Admin State	Displays the administrative state, enabled or disabled.
Oper State	Displays the current operational state: <ul style="list-style-type: none"><li>• disabled</li><li>• holdDown</li><li>• ready</li><li>• recoveryInProgress</li><li>• detectedDisabled</li><li>• detectedHoldDown</li><li>• detectedXRS40Migration</li><li>• detectedSFMUpgradePending</li></ul>
SFM Slot	Displays the fabric slot within a chassis in the system.
State	Displays the stage of the automatic switch fabric recovery process.
Time	Displays the date and time of the stage.

## switch-fabric

### Syntax

**switch-fabric**

### Context

[\[Tree\]](#) (tools>perform>system switch-fabric)

### Full Context

tools perform system switch-fabric

### Description

This command performs switch fabric operations.

### Platforms

7450 ESS, 7750 SR-7, 7750 SR-12e, 7950 XRS

## 22.62 switch-path

### switch-path

#### Syntax

**switch-path** [**lsp** *lsp-name*] [**path** *path-name*]

#### Context

[\[Tree\]](#) (tools>perform>router>mpls switch-path)

#### Full Context

tools perform router mpls switch-path

#### Description

Use this command to move from a standby (or an active secondary) to another standby of the same priority. If a new standby path with a higher priority or a primary path comes up after the **tools perform** command is executed, the path re-evaluation command runs and the path is moved to the path specified by the outcome of the re-evaluation.

#### Parameters

##### *lsp-name*

Specifies an existing LSP name, up to 64 characters in length.

##### *path-name*

Specifies the path name to which to move the specified LSP.

#### Platforms

All

## 22.63 sync

### sync

#### Syntax

**sync** [**peer** *ip-address*]

**sync peer** *ip-address* **detail**

**sync** [**peer** *ip-address*] **statistics**

## Context

[\[Tree\]](#) (show>redundancy>multi-chassis sync)

## Full Context

show redundancy multi-chassis sync

## Description

This command displays synchronization information.

## Parameters

### *ip-address*

Shows peer information about the specified IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x – [0 to FFFF] H
    - d – [0 to 255] D

### **detail**

Displays detailed peer information.

### **statistics**

Displays peer statistics.

## Platforms

All

## Output

See the following sections for output example:

- [Multi-Chassis Sync Output Example](#)
- [Redundancy Multi-Chassis Sync Peer Output Example](#)
- [Output Example: Redundancy Multi-Chassis Sync Peer Detail](#)

The following output is an example of multi-chassis sync information, and [Table 586: Redundancy Multi-chassis Sync Field Descriptions](#) describes the output fields.

### Multi-Chassis Sync Output Example

```
*A:subscr_mgt_2# show redundancy multi-chassis sync
=====
Multi-chassis Peer Table
=====
Peer
-----
Peer IP Address      : 10.10.10.20
Description          : Mc-Lag peer 10.10.10.20
```

```

Authentication      : Disabled
Source IP Address  : 0.0.0.0
Admin State        : Enabled
-----
Sync-status
-----
Client Applications : SUBMGMT
Sync Admin State    : Up
Sync Oper State     : Up
DB Sync State       : inSync
Num Entries         : 1
Lcl Deleted Entries : 0
Alarm Entries       : 0
Rem Num Entries     : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries   : 0
=====
A:subscr_mgt_2#
    
```

Table 586: Redundancy Multi-chassis Sync Field Descriptions

Label	Description
Peer IP Address	Displays the multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the multi-chassis peer.
Source IP Address	Displays the source address used to communicate with the multi-chassis peer.
Admin State	Displays the administrative state of the peer.
Client Applications	Displays the list of client applications synchronized between SRs.
Sync Admin State	Displays the administrative state of the synchronization.
Sync Oper State	Displays the operation state of the synchronization.
DB Sync State	Displays the database state of the synchronization.
Num Entries	Displays the number of entries on local router.
Lcl Deleted Entries	Displays the number of deleted entries made at the local router.
Alarm Entries	Displays the alarm entries on the local router.
Rem Num Entries	Displays the number of entries on the remote router.
Rem Lcl Deleted Entries	Displays the number of locally deleting entries made by the remote router.
Rem Alarm Entries	Displays alarm entries on the remote router.

The following output is an example of multi-chassis sync peer information, and [Table 587: Redundancy Multi-chassis Sync Peer Field Descriptions](#) describes the output fields.

### Redundancy Multi-Chassis Sync Peer Output Example

```
*A:subscr_mgt_2# show redundancy multi-chassis sync peer 10.10.10.20
=====
Multi-chassis Peer Table
=====
Peer
-----
Peer IP Address      : 10.10.10.20
Description          : Mc-Lag peer 10.10.10.20
Authentication       : Disabled
Source IP Address    : 0.0.0.0
Admin State          : Enabled
-----
Sync-status
-----
Client Applications  : SUBMGMT
Sync Admin State     : Up
Sync Oper State      : Up
DB Sync State        : inSync
Num Entries          : 1
Lcl Deleted Entries  : 0
Alarm Entries        : 0
Rem Num Entries      : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
=====
MCS Application Stats
=====
Application          : igmp
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
Application          : igmpSnooping
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
Application          : subMgmt
Num Entries          : 1
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
Rem Num Entries      : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
-----
Application          : srrp
Num Entries          : 0
Lcl Deleted Entries  : 0
Alarm Entries        : 0
-----
```

```

Rem Num Entries      : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries    : 0
=====
*A:subscr_mgt_2#
    
```

Table 587: Redundancy Multi-chassis Sync Peer Field Descriptions

Label	Description
Peer IP Address	Displays the multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the multi-chassis peer.
Source IP Address	Displays the source address used to communicate with the multi-chassis peer.
Admin State	Displays the administrative state of the peer.
Client Applications	Displays the list of client applications synchronized between SRs.
Sync Admin State	Displays the administrative state of the synchronization.
Sync Oper State	Displays the operation state of the synchronization.
DB Sync State	Displays the database state of the synchronization.
Num Entries	Displays the number of entries on local router.
Lcl Deleted Entries	Displays the number of deleted entries made at the local router.
Alarm Entries	Displays the alarm entries on the local router.
Rem Num Entries	Displays the number of entries on the remote router.
Rem Lcl Deleted Entries	Displays the number of locally deleting entries made by the remote router.
Rem Alarm Entries	Displays alarm entries on the remote router.

The following output is an example of multi-chassis sync detail information, and [Table 588: Redundancy Multi-chassis Sync Peer Detail Field Descriptions](#) describes the output fields.

**Output Example: Redundancy Multi-Chassis Sync Peer Detail**

```

*A:subscr_mgt_2# show redundancy multi-chassis sync peer 10.10.10.20 detail
=====
Multi-chassis Peer Table
=====
Peer
-----
Peer IP Address      : 10.10.10.20
Description          : Mc-Lag peer 10.10.10.20
Authentication       : Disabled
    
```



```
Source IP Address      : 0.0.0.0
Admin State           : Enabled
-----
Sync-status
-----
Client Applications    : SUBMGMT
Sync Admin State      : Up
Sync Oper State       : Up
DB Sync State         : inSync
Num Entries           : 1
Lcl Deleted Entries   : 0
Alarm Entries         : 0
Rem Num Entries       : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries     : 0
=====
MCS Application Stats
=====
Application           : igmp
Num Entries           : 0
Lcl Deleted Entries   : 0
Alarm Entries         : 0
-----
Rem Num Entries       : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries     : 0
-----
Application           : igmpSnooping
Num Entries           : 0
Lcl Deleted Entries   : 0
Alarm Entries         : 0
-----
Rem Num Entries       : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries     : 0
-----
Application           : subMgmt
Num Entries           : 1
Lcl Deleted Entries   : 0
Alarm Entries         : 0
-----
Rem Num Entries       : 1
Rem Lcl Deleted Entries : 0
Rem Alarm Entries     : 0
-----
Application           : srrp
Num Entries           : 0
Lcl Deleted Entries   : 0
Alarm Entries         : 0
-----
Rem Num Entries       : 0
Rem Lcl Deleted Entries : 0
Rem Alarm Entries     : 0
=====
Ports synced on peer 10.10.10.20
=====
Port/Encap            Tag
-----
lag-1                 test123
=====
*A:subscr_mgt_2#
```

Table 588: Redundancy Multi-chassis Sync Peer Detail Field Descriptions

Label	Description
Peer IP Address	Displays the multi-chassis redundancy peer.
Description	The text string describing the peer.
Authentication	If configured, displays the authentication key used between this node and the multi-chassis peer.
Source IP Address	Displays the source address used to communicate with the multi-chassis peer.
Admin State	Displays the administrative state of the peer.
Client Applications	Displays the list of client applications synchronized between routers.
Sync Admin State	Displays the administrative state of the synchronization.
Sync Oper State	Displays the operation state of the synchronization.
DB Sync State	Displays the database state of the synchronization.
Num Entries	Displays the number of entries on local router.
Lcl Deleted Entries	Displays the number of deleted entries made at the local router.
Alarm Entries	Displays the alarm entries on the local router.
Rem Num Entries	Displays the number of entries on the remote router.
Rem Lcl Deleted Entries	Displays the number of locally deleting entries made by the remote router.
Rem Alarm Entries	Displays alarm entries on the remote router.

## 22.64 sync-database

### sync-database

#### Syntax

**sync-database** [**peer** *ip-address*] [**port** *port-id* | *lag-id*] [**sync-tag** *sync-tag*] [**application** *application*]  
 [**detail**] [**type** *type*]

#### Context

**[Tree]** (tools>dump>redundancy>multi-chassis sync-database)

## Full Context

tools dump redundancy multi-chassis sync-database

## Description

This command dumps MCS database information.

## Parameters

### *ip-address*

Specifies the peer's IP address.

### *port-id | lag-id*

Indicates the port or LAG ID to be synchronized with the multi-chassis peer.

**Values** *slot/mda/port* or *lag-lag-id*

### *sync-tag*

Specifies a synchronization tag to be used while synchronizing this port with the multi-chassis peer.

### *application*

Specifies a particular multi-chassis peer synchronization protocol application.

#### **Values**

dhcp-server:	local dhcp server (7450 ESS and 7750 SR only)
igmp:	Internet group management protocol
igmp-snooping:	igmp-snooping
mc-ring:	multi-chassis ring
mld-snooping:	multicast listener discovery-snooping
srrp:	simple router redundancy protocol (7450 ESS and 7750 SR only)
sub-host-trk:	subscriber host tracking (7450 ESS and 7750 SR only)
sub-mgmt:	subscriber management (7450 ESS and 7750 SR only)

### *type*

Indicates the locally deleted or alarmed deleted entries in the MCS database per multi-chassis peer.

**Values** *alarm-deleted, local-deleted*

### *detail*

Displays detailed information.

## Platforms

All

## sync-database

### Syntax

**sync-database** [**peer** *ip-address*] [**port** *port-id* | *lag-id*] [**sync-tag** *sync-tag*] [**application** *application*]  
[**detail**] [**type** *type*]

**sync-database** [**peer** *ip-address*] [**sdp** *sdp-id*] [**sync-tag** *sync-tag*] [**application** *application*] [**detail**] [**type** *type*]

### Context

[\[Tree\]](#) (tools>dump>redundancy>multi-chassis sync-database)

### Full Context

tools dump redundancy multi-chassis sync-database

### Description

This command dumps multi-chassis sync database information.

### Parameters

#### *ip-address*

Dumps the specified address of the multi-chassis peer.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF]H
    - d: [0 to 255]D

#### *port-id*

Dumps the specified port ID of the multi-chassis peer.

<b>Values</b>	<i>port-id, lag-id</i>	slot/mda/port	
	lag-id	lag-id	
		lag	keyword
		id	1 to 800
	pw-id	pw-id	
		pw	keyword
		id	1 to 32767

**lag-id**

Dumps the specified Link Aggregation Group (LAG) on this system.

**Values**

<i>port-id, lag-id</i>	slot/mda/port		
	lag-id	lag-id	
	lag	keyword	
	id	1 to 800	
	pw-id	pw-id	
	pw	keyword	
	id	1 to 32767	

**sync-tag**

Dumps the synchronization tag used while synchronizing this port with the multi-chassis peer up to 32 characters in length.

**application**

Dumps the specified application information that was synchronized with the multi-chassis peer.

**Values**

dhcp-server	local DHCP server
igmp	internet group management protocol
igmp-snooping	IGMP snooping
mc-ring	multi-chassis ring
l2tp	L2TP
mld	multicast listener discovery
mld-snooping	multicast listener discovery snooping
srrp	simple router redundancy protocol
sub-host-trk	subscriber host tracking
sub-mgmt-ipoe	subscriber management for IPoE
sub-mgmt-pppoe	subscriber management for PPPoE
mc-ipsec	multi-chassis IPsec
python	Python cache
diameter-proxy	diameter proxy
pim-snpg-sap	protocol independent multicast snooping for SAP
pim-snpg-sdp	protocol independent multicast snooping for SDP

### **detail**

Displays detailed information.

### **type**

Displays information for the specified type.

**Values** alarm-deleted, local-deleted, global-deleted, omcr-standby, omcr-alarmed

### **sdp-id**

Displays information for the specified SDP ID.

**Values** 1 to 32767

## **Platforms**

All

## **Output**

The following output is an example of sync database information.

### **Output Example**

```
A:Dut-C# tools dump redundancy multi-chassis sync-database application

<ip-address>      : a.b.c.d
<port-id|lag-id>  : slot/mda/port or lag-<lag-id>
<sync-tag>        : [32 chars max]
<application>    : dhcp-server    - local dhcp server
                  igmp          - internet group management protocol
                  igmp-snooping - igmp-snooping
                  mc-ring       - multi-chassis ring
                  mld           - multicast listener discovery
                  mld-snooping  - multicast listener discovery-snooping
                  srrp          - simple router redundancy protocol
                  sub-host-trk  - subscriber host tracking
                  sub-mgmt-ipoe - subscriber management for IPoE
                  sub-mgmt-ppoe - subscriber management for PPPoE
                  mc-ipsec     - multi-chassis IPsec
<detail>         : - displays detailed information
<type>           : alarm-deleted|local-deleted|global-deleted|
                  omcr-standby|omcr-alarmed
```

## **sync-database**

### **Syntax**

**sync-database peer** *ip-address* **all** **application** *application*

**sync-database peer** *ip-address* **port** { *port-id* | *lag-id* } [**sync-tag** *sync-tag*] **application** *application*

**sync-database peer** *ip-address* **sdp** *sdp-id* [**sync-tag** *sync-tag*] **application** *application*

**sync-database peer** *ip-address* **sync-tag** *sync-tag* **application** *application*

## Context

[\[Tree\]](#) (clear>redundancy>multi-chassis sync-database)

## Full Context

clear redundancy multi-chassis sync-database

## Description

This command clears multi-chassis sync database information.

## Parameters

### *ip-address*

Clears the specified address of the multi-chassis peer.

- Values** ipv4-address: a.b.c.d  
ipv6-address:
- x:x:x:x:x:x:x (eight 16-bit pieces)
  - x:x:x:x:x:d.d.d.d
  - x – [0 to FFFF] H
  - d – [0 to 255] D

### *port-id*

Clears the specified port ID of the multi-chassis peer.

**Values** *slot/mda/port*

### *lag-id*

Clears the specified Link Aggregation Group (LAG) on this system.

**Values** *lag-lag-id*

### *all*

Clears all ports and synchronization tags.

### *sync-tag*

Clears the synchronization tag used while synchronizing this port with the multi-chassis peer. The synchronization tag can be up to 32 characters.

### *sdp-id*

Specifies the SDP identifier.

**Values** 1 to 32767

### *application*

Clears the specified application information that was synchronized with the multi-chassis peer.

**Values** The following are values for the 7750 SR and 7950 XRS:

all:	All supported applications
------	----------------------------

dhcp-server:	local dhcp server
igmp:	internet group management protocol
igmp-snooping:	igmp-snooping
mc-ring:	multi-chassis ring
mld-snooping:	multicast listener discovery-snooping
srrp:	simple router redundancy protocol
sub-host-trk	subscriber host tracking
sub-mgmt:	subscriber management

**Values** The following are values for the 7450 ESS:

all	All supported applications
igmp-snooping	igmp-snooping
mc-ring	multi-chassis ring
mld-snooping	multicast listener discovery-snooping
sub-host-trk	subscriber host tracking
sub-mgmt	subscriber management

## Platforms

All

## 22.65 sync-database-reconcile

### sync-database-reconcile

#### Syntax

**sync-database-reconcile** [**peer** *ip-address*] [**port** *port-id* | *lag-id* [**sync-tag** *sync-tag*]] [**application** *application*]

**sync-database-reconcile** [**peer** *ip-address*] [**sdp** *sdp-id* [**sync-tag** *sync-tag*]] [**application** *application*]

#### Context

[\[Tree\]](#) (tools>perform>redundancy>multi-chassis sync-database-reconcile)



## Full Context

tools perform redundancy multi-chassis sync-database-reconcile

## Description

This command provides the parameters to reconcile MCS database entries.

## Parameters

### *ip-address*

Specifies the IP address (in the form of a.b.c.d).

### *port-id*

Specifies the port ID in the slot/MDA/port format.

### *lag-id*

Specifies the LAG ID.

**Values** lag-id: *lag-id*  
lag: keyword  
id: 1 to 200

### *syn-tag*

Specifies the syn tag up to 32 characters.

### *application*

Specifies the application.

**Values** dhcp-server — Specifies the local DHCP server  
igmp — Specifies the Internet group management protocol  
igmp-snooping — Specifies igmp-snooping  
mc-ring — Specifies multi-chassis ring  
l2tp — Specifies L2TP  
mld — Specifies multicast listener discovery  
mld-snooping — Specifies multicast listener discovery-snooping  
srrp — Specifies simple router redundancy protocol  
sub-host-trk — Specifies subscriber host tracking  
sub-mgmt-ipoe — Specifies subscriber management for IPoE  
sub-mgmt-pppoe — Specifies subscriber management for PPPoE  
mc-ipsec — Specifies multi-chassis IPsec  
python — Specifies Python cache  
diameter-proxy — Specifies diameter proxy  
pim-snpg-sap — Specifies protocol independent multicast snooping for SAPs  
pim-snpg-sdp — Specifies protocol independent multicast snooping for SDPs

***sdp-id***

Specifies the SDP ID.

**Values** 1 to 17407

**Platforms**

All

## 22.66 sync-if-timing

### sync-if-timing

**Syntax**

**sync-if-timing**

**Context**

[\[Tree\]](#) (show>system>satellite>eth-sat sync-if-timing)

[\[Tree\]](#) (show>system>satellite>tdm-sat sync-if-timing)

**Full Context**

show system satellite eth-sat sync-if-timing

show system satellite tdm-sat sync-if-timing

**Description**

This command displays synchronous interface timing operational information.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

- show system satellite eth-sat sync-if-timing

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

- show system satellite tdm-sat sync-if-timing

**Output**

The following output is an example of TDM satellite synchronous interface timing information and [Table 589: System Satellite Timing Output Fields](#) describes the fields.

**Output Example**

```
show system satellite tdm-sat 1 sync-if-timing
=====
Satellite tsat-1 Synchronous Interface Timing Operational Information
=====
System Status                : Master Locked
```

```

System Quality Level      : eec2
Current Frequency Offset (ppm) : +0
Reference Input 1
  Admin Status           : up
  Rx Quality Level       : eec2
  Qualified For Use      : yes
  Selected For Use       : yes
  Source Port            : tsat-1/1/u1
Reference Input 2
  Admin Status           : down
  Rx Quality Level       : unknown
  Qualified For Use      : no
  Not Qualified Due To   : disabled
  Selected For Use       : no
  Not Selected Due To    : disabled
  Source Port            : none
=====
    
```

The following output is an example of Ethernet satellite synchronous interface timing information where it is the default case of using the first two uplink ports as sources into the satellite. [Table 589: System Satellite Timing Output Fields](#) describes the fields.

```

show system satellite eth-sat 1 sync-if-timing

=====
Satellite esat-1 Synchronous Interface Timing Operational Information
=====
System Status              : Master Locked
System Quality Level       : eec1
Quality Level Selection    : Enabled
Current Frequency Offset (ppm) : +0
Reference Input 1
  Admin Status             : up
  Rx Quality Level         : eec1
  Qualified For Use        : yes
  Selected For Use         : yes
  Source Port              : esat-1/1/c33/u1
Reference Input 2
  Admin Status             : up
  Rx Quality Level         : eec1
  Qualified For Use        : yes
  Selected For Use         : no
  Not Selected Due To      : on standby
  Source Port              : esat-1/1/c35/u1
=====
    
```

The following output is an example of Ethernet satellite synchronous interface timing information for the case where one of the client ports has been configured as an input reference. [Table 589: System Satellite Timing Output Fields](#) describes the fields.

```

show system satellite eth-sat 1 sync-if-timing

=====
Satellite esat-1 Synchronous Interface Timing Operational Information
=====
System Status              : Master Locked
System Quality Level       : eec1
Quality Level Selection    : Enabled
Current Frequency Offset (ppm) : +0

Reference Input 1
  Admin Status             : up
    
```

```

Rx Quality Level           : eec1
Qualified For Use         : yes
Selected For Use          : no
    Not Selected Due To    : on standby
Source Port               : esat-1/1/c1/1

Reference Input 2
Admin Status              : up
Rx Quality Level          : eec1
Qualified For Use         : yes
Selected For Use          : yes
Source Port               : esat-1/1/c35/u1
=====
    
```

Table 589: System Satellite Timing Output Fields

Label	Description
System Status	Indicates the system status
System Quality Level	Indicates the quality level being generated by the system clock
Quality Level Selection	Indicates the quality level selection status
Current Frequency Offset (ppm)	<p>Indicates the offset that is applied within the central clock to align the local oscillator to the frequency of the selected input reference. The units for this value are parts per million (ppm).</p> <p>This value should not be misinterpreted as an indicator of the frequency accuracy of the output of the central clock.</p> <p>If the central clock is locked to a true Primary Reference Clock or Stratum 1 frequency reference, this value should report a number within the range [-5, +5] ppm.</p>
Reference Input 1/2	
Admin Status	<p>down — Indicates <b>ref1</b> or <b>ref2</b> configuration is administratively shutdown</p> <p>up — Indicates <b>ref1</b> or <b>ref2</b> configuration is administratively enabled</p> <p>diag — Indicates the reference has been forced using the <b>force-reference</b> command</p>
Rx Quality Level	<p>Indicates the QL value received on the interface</p> <ul style="list-style-type: none"> <li>inv — SSM received on the interface indicates an invalid code for the interface type</li> <li>unknown — No QL value was received on the interface</li> </ul>
Quality Level Override	Indicates whether the QL value used to determine the reference was configured directly by the user

Label	Description
Qualified for Use	Indicates whether the reference has been qualified to be used as a source of timing for the node
Not Qualified Due To	Indicates the reason why the reference has not been qualified
Selected for Use	Indicates whether the method is presently selected
Not Selected Due To	Indicates the reason why the method is not selected: <ul style="list-style-type: none"> <li>• disabled</li> <li>• not qualified</li> <li>• previous failure</li> <li>• LOF</li> <li>• AIS-L</li> <li>• validating</li> <li>• on standby</li> <li>• ssm quality</li> </ul>
Source Port	Identifies the source port for the reference

## sync-if-timing

### Syntax

**sync-if-timing** [*cpm-slot*]

### Context

[\[Tree\]](#) (show>system sync-if-timing)

### Full Context

show system sync-if-timing

### Description

This command displays synchronous interface timing operational information.

### Parameters

***cpm-slot***

Specifies the system CPM slot.

**Values** standby, A, B

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of sync-if-timing information, and [Table 590: System Timing Output](#) describes the output fields.

### Output Example

The following system example shows:

- **sync-if timing**, or
- **sync-if-timing "A"** when the SETS reference on the active CPM-A locks to BITS A, or
- **sync-if-timing "B"** when the SETS reference on the active CPM-B locks to BITS A



#### Note:

The following output applies only to the 7750 SR-1e/2e/3e and 7950 XRS-16/20/40 platforms.

```
*A:Dut-B# show system sync-if-timing or show system sync-if-timing "A"
=====
System Interface Timing Operational Info
=====
System Status CPM A           : Master Locked
  Reference Input Mode        : Revertive
  Quality Level Selection     : Disabled
  Reference Selected          : BITS A
  System Quality Level       : prc
  Current Frequency Offset (ppm) : +0
  Input Minimum Quality Level : st3
  Wait to Restore Timer      : Disabled

Reference Order               : bits ref1 ref2

Reference Input 1
  Admin Status                : up
  Rx Quality Level            : prc
  Quality Level Override     : none
  Qualified For Use           : Yes
  Selected For Use            : No
  Not Selected Due To        :      on standby
  Source Port                 : 1/1/5

Reference Input 2
  Admin Status                : up
  Rx Quality Level            : prc
  Quality Level Override     : none
  Qualified For Use           : Yes
  Selected For Use            : No
  Not Selected Due To        :      on standby
  Source Port                 : 3/1/5

Reference BITS A
  Input Admin Status         : up
  Rx Quality Level           : prc
  Quality Level Override     : none
  Qualified For Use           : Yes
  Selected For Use           : Yes
  Interface Type             : E1
  Framing                    : PCM31 CRC
  Line Coding                 : HDB3
  SSM Bit                    : 8
  Output Admin Status        : up
  Output Minimum Quality Level : st2
```

```

Output Source           : line reference
Output Reference Selected : ref1
Output Squelch         : Disabled
Tx Quality Level       : prc

Reference BITS B
Input Admin Status     : up
Rx Quality Level       : prc
Quality Level Override : none
Qualified For Use      : Yes
Selected For Use       : No
  Not Selected Due To  :      on standby
Interface Type         : E1
Framing                : PCM31 CRC
Line Coding            : HDB3
SSM Bit               : 8
Output Admin Status    : up
Output Minimum Quality Level : st2
Output Source          : line reference
Output Reference Selected : ref1
Output Squelch         : Disabled
Tx Quality Level       : prc
=====
    
```

The following system example shows:

- **sync-if timing** standby, or
- **sync-if-timing "B"** when the SETS reference on the standby CPM-B locks to Mate CPM (BITS A), or
- **sync-if-timing "A"** when the SETS reference on the standby CPM-A locks to Mate CPM (BITS A)



**Note:**

The following output applies only to the 7750 SR-1e/2e/3e and 7950 XRS-16/20/40 platforms.

```

-----
*A:Dut-B# show system sync-if-timing standby or show system sync-if-timing "B"
=====
System Interface Timing Operational Info
=====
System Status CPM B           : Master Locked
Reference Input Mode          : Revertive
Quality Level Selection       : Disabled
Reference Selected            : Mate CPM (BITS A)
System Quality Level          : prc
Current Frequency Offset (ppm) : +0sync-if-timing "A"
Input Minimum Quality Level   : st3
Wait to Restore Timer         : Disabled

Reference Order                : bits ref1 ref2

Reference Mate CPM
Qualified For Use              : Yes
Selected For Use               : Yes

Reference Input 1
Admin Status                   : up
Rx Quality Level               : prc
Quality Level Override         : none
Qualified For Use              : Yes
Selected For Use               : No
  Not Selected Due To         :      on standby
    
```

```

Source Port                : 1/1/5

Reference Input 2
  Admin Status              : up
  Rx Quality Level          : prc
  Quality Level Override    : none
  Qualified For Use         : Yes
  Selected For Use          : No
  Not Selected Due To      :      on standby
  Source Port               : 3/1/5

Reference BITS A
  Input Admin Status        : up
  Rx Quality Level          : prc
  Quality Level Override    : none
  Qualified For Use         : Yes
  Selected For Use          : No
  Not Selected Due To      :      on standby
  Interface Type            : E1
  Framing                   : PCM31 CRC
  Line Coding                : HDB3
  SSM Bit                   : 8
  Output Admin Status       : up
  Output Minimum Quality Level : st2
  Output Source              : line reference
  Output Reference Selected : refl
  Output Squelch            : Disabled
  Tx Quality Level          : prc

Reference BITS B
  Input Admin Status        : up
  Rx Quality Level          : prc
  Quality Level Override    : none
  Qualified For Use         : Yes
  Selected For Use          : No
  Not Selected Due To      :      on standby
  Interface Type            : E1
  Framing                   : PCM31 CRC
  Line Coding                : HDB3
  SSM Bit                   : 8
  Output Admin Status       : up
  Output Minimum Quality Level : st2
  Output Source              : line reference
  Output Reference Selected : refl
  Output Squelch            : Disabled
  Tx Quality Level          : prc

=====
    
```

The following system example shows:

- **sync-if timing**, or
- **sync-if-timing "A"** when the SETS reference on the active CPM-A locks to BITS B, or
- **sync-if-timing "B"** when the SETS reference on the active CPM-B locks to BITS B



**Note:**

The following output applies only to the 7750 SR-1e/2e/3e and 7950 XRS-16/20/40 platforms.

```

-----
*A:Dut-B# show system sync-if-timing or show system sync-if-timing "A"
    
```



```
=====
System Interface Timing Operational Info
=====
System Status CPM A           : Master Locked
  Reference Input Mode        : Non-revertive
  Quality Level Selection     : Disabled
  Reference Selected          : BITS B
  System Quality Level        : prc
  Current Frequency Offset (ppm) : +0
  Input Minimum Quality Level : st3
  Wait to Restore Timer       : Disabled

Reference Order                : bits ref1 ref2

Reference Input 1
  Admin Status                 : up
  Rx Quality Level             : prc
  Quality Level Override       : none
  Qualified For Use            : Yes
  Selected For Use             : No
  Not Selected Due To         : on standby
  Source Port                  : 1/1/5

Reference Input 2
  Admin Status                 : up
  Rx Quality Level             : prc
  Quality Level Override       : none
  Qualified For Use            : Yes
  Selected For Use             : No
  Not Selected Due To         : on standby
  Source Port                  : 3/1/5

Reference BITS A
  Input Admin Status           : up
  Rx Quality Level             : prc
  Quality Level Override       : none
  Qualified For Use            : Yes
  Selected For Use             : No
  Not Selected Due To         : previous failure
  Interface Type               : E1
  Framing                      : PCM31 CRC
  Line Coding                   : HDB3
  SSM Bit                       : 8
  Output Admin Status          : up
  Output Minimum Quality Level : st2
  Output Source                 : line reference
  Output Reference Selected     : ref1
  Output Squelch                : Disabled
  Tx Quality Level              : prc

Reference BITS B
  Input Admin Status           : up
  Rx Quality Level             : prc
  Quality Level Override       : none
  Qualified For Use            : Yes
  Selected For Use             : Yes
  Interface Type               : E1
  Framing                      : PCM31 CRC
  Line Coding                   : HDB3
  SSM Bit                       : 8
  Output Admin Status          : up
  Output Minimum Quality Level : st2
  Output Source                 : line reference
  Output Reference Selected     : ref1
=====
```

```

Output Squelch           : Disabled
Tx Quality Level         : prc
=====
    
```

The following system example shows:

- **sync-if timing** standby, or
- **sync-if-timing "B"** when the SETS reference on the standby CPM-B locks to Mate CPM (BITS B), or
- **sync-if-timing "A"** when the SETS reference on the standby CPM-A locks to Mate CPM (BITS B)



**Note:**

The following output applies only to the 7750 SR-1e/2e/3e and 7950 XRS-16/20/40 platforms.

```

-----
*A:Dut-B# show system sync-if-timing standby or show system sync-if-timing "B"
=====
System Interface Timing Operational Info
=====
System Status CPM B           : Master Locked
  Reference Input Mode         : Non-revertive
  Quality Level Selection      : Disabled
  Reference Selected           : Mate CPM (BITS B)
  System Quality Level         : prc
  Current Frequency Offset (ppm) : +0
  Input Minimum Quality Level  : st3
  Wait to Restore Timer        : Disabled

Reference Order                : bits ref1 ref2

Reference Mate CPM
  Qualified For Use             : Yes
  Selected For Use              : Yes

Reference Input 1
  Admin Status                  : up
  Rx Quality Level              : prc
  Quality Level Override        : none
  Qualified For Use              : Yes
  Selected For Use              : No
  Not Selected Due To           : on standby
  Source Port                   : 1/1/5

Reference Input 2
  Admin Status                  : up
  Rx Quality Level              : prc
  Quality Level Override        : none
  Qualified For Use              : Yes
  Selected For Use              : No
  Not Selected Due To           : on standby
  Source Port                   : 3/1/5

Reference BITS A
  Input Admin Status            : up
  Rx Quality Level              : prc
  Quality Level Override        : none
  Qualified For Use              : Yes
  Selected For Use              : No
  Not Selected Due To           : previous failure
  Interface Type                : E1
  Framing                       : PCM31 CRC
    
```

```

Line Coding           : HDB3
SSM Bit              : 8
Output Admin Status  : up
Output Minimum Quality Level : st2
Output Source        : line reference
Output Reference Selected : refl
Output Squelch       : Disabled
Tx Quality Level     : prc

Reference BITS B
Input Admin Status   : up
Rx Quality Level     : prc
Quality Level Override : none
Qualified For Use    : Yes
Selected For Use     : No
  Not Selected Due To : on standby
Interface Type       : E1
Framing              : PCM31 CRC
Line Coding          : HDB3
SSM Bit              : 8
Output Admin Status  : up
Output Minimum Quality Level : st2
Output Source        : line reference
Output Reference Selected : refl
Output Squelch       : Disabled
Tx Quality Level     : prc
=====
    
```

Table 590: System Timing Output

Label	Description
System Status CPM A/B	<p>Indicates the present status of the synchronous timing equipment subsystem (SETS).</p> <p>Not Present — Only shown on systems without central clocks</p> <p>Master Freerun — The clock is in free-run because it hasn't had a qualified input reference to lock to</p> <p>Master Holdover — The clock was locked to an input reference but has lost all qualified input references and is in holdover.</p> <p>Master Locked — The clock is locked to an input reference</p> <p>Acquiring — The clock is training to a qualified input reference.</p>
Reference Input Mode	<p>Revertive — Indicates that for a re-validated or a newly validated reference source which has a higher priority than the currently selected reference has reverted to the new reference source.</p> <p>Non-revertive — The clock cannot revert to a higher priority clock if the current clock goes offline.</p>
Quality Level Selection	<p>Indicates whether the ql-selection command has been enabled or disabled. If this command is enabled, then the reference is selected first using the QL value, then by the priority reference order. If this command is not enabled, then the reference is selected by the priority reference order.</p>

Label	Description
Reference Selected	Indicates which reference has been selected: <ul style="list-style-type: none"> <li>• ref1, ref2 — (for all chassis)</li> <li>• BITS A, BITS B:                             <ul style="list-style-type: none"> <li>– 7450 ESS-7/12</li> <li>– 7750 SR-7/12</li> <li>– 7750 SR-12e</li> <li>– 7750 SR-1e/2e/3e</li> <li>– 7750 SR-a4/8</li> <li>– 7950 XRS-16/20</li> <li>– 7950 XRS-40</li> </ul> </li> <li>• BITS C, BITS D - (7950 XRS-40)</li> </ul>
	<ul style="list-style-type: none"> <li>• Mate CPM (BITS A), Mate CPM (BITS B) — <b>show&gt;system&gt;sync-if-timing&gt; standby:</b> <ul style="list-style-type: none"> <li>– 7450 ESS-7/12</li> <li>– 7750 SR-7/12</li> <li>– 7750 SR-12e</li> <li>– 7750 SR-1e/2e/3e</li> <li>– 7750 SR-a4/8</li> <li>– 7950 XRS-16/20</li> <li>– 7950 XRS-40</li> </ul> </li> <li>• Mate CPM (BITS A), Mate CPM (BITS B) — <b>show&gt;system&gt;sync-if-timing:</b> <ul style="list-style-type: none"> <li>– 7450 ESS-7/12</li> <li>– 7750 SR-7/12</li> <li>– 7750 SR-12e</li> <li>– 7750 SR-a4/8</li> </ul> </li> <li>• Mate CPM (none) - <b>show&gt;system&gt;sync-if-timing&gt;standby</b> when standby locked to active which is freerun or holdover - (for all chassis)</li> <li>• Mate CPM (ref1), Mate CPM (ref2) - <b>show&gt;system&gt;sync-if-timing&gt;standby</b> when standby locked to active which is locked to ref1 or ref2:                             <ul style="list-style-type: none"> <li>– 7750 SR-7/12</li> <li>– 7450 ESS-7/12</li> <li>– 7750 SR-12e</li> <li>– 7750 SR-1e/2e/3e</li> </ul> </li> </ul>

Label	Description
	<ul style="list-style-type: none"> <li>– 7750 SR-a4/8</li> <li>– 7950 XRS-16/20/40</li> </ul>
System Quality Level	Indicates the quality level being generated by the system clock.
Current Frequency Offset	<p>This value indicates the offset that is applied within the central clock to align the local oscillator to the frequency of the selected input reference. The units for this value are parts per million (ppm).</p> <p>This value should not be misinterpreted as an indicator of the frequency accuracy of the output of the central clock.</p> <p>If the central clock is locked to a true Primary Reference Clock or Stratum 1 frequency reference, this value should report a number within the range [-5, +5] ppm.</p>
Input Minimum Quality Level	The configured minimum acceptable QL to consider for use by the central clock.
Wait to Restore Timer	The configured timeout to use for the Wait to Restore timer.
Reference Order	ref1, ref2, bits — Indicates that the priority order of the timing references.
Reference Mate CPM	Data within this block represents the status of the timing reference provided by the Mate CPM. This will be the BITS input from the standby CPM.
Admin Status	<p>down — The <b>ref1</b> or <b>ref2</b> configuration is administratively shutdown.</p> <p>up — The <b>ref1</b> or <b>ref2</b> configuration is administratively enabled.</p> <p>diag — Indicates the reference has been forced using the force-reference command.</p>
Quality Level Override	Indicates whether the QL value used to determine the reference was configured directly by the user.
Rx Quality Level	<p>Indicates the QL value received on the interface.</p> <ul style="list-style-type: none"> <li>• inv — SSM received on the interface indicates an invalid code for the interface type.</li> <li>• unknown — No QL value was received on the interface.</li> </ul>
Qualified for Use	Indicates whether the reference has been qualified to be used as a source of timing for the node.
Not Qualified Due To	<p>Indicates the reason why the reference has not been qualified:</p> <ul style="list-style-type: none"> <li>• disabled</li> <li>• LOS</li> </ul>

Label	Description
	<ul style="list-style-type: none"> <li>• OOPIR</li> <li>• OOF</li> </ul>
Selected for Use	Indicates whether the method is presently selected.
Not Selected Due To	Indicates the reason why the method is not selected: <ul style="list-style-type: none"> <li>• disabled</li> <li>• not qualified</li> <li>• previous failure</li> <li>• LOF</li> <li>• AIS-L</li> <li>• validating</li> <li>• on standby</li> <li>• ssm quality</li> </ul>
Source Port	Identifies the Source port for the reference.
Interface Type	The interface type configured for the BITS port.
Framing	The framing configured for the BITS port.
Line Coding	The line coding configured for the BITS port.
Line Length	The line length value of the BITS output.
Output Admin Status	down — The BITS output is administratively shutdown. up — The BITS output is administratively enabled.
Output Minimum Quality Level	The configured minimum acceptable QL to use for the BITSout signal.
Output Source	The source to be used to provide the signal on the BITS output port. line reference — unfiltered recovered line reference. internal clock — filtered node clock output.
Output Reference Selected	The reference selected as the source for the BITS output signal (ref1, ref2, or PTP).
Output Squelch	Indicates whether the squelch function for BITSout is enabled or disabled.
TX Quality Level	QL value for BITS output signal.

## sync-if-timing

### Syntax

```
sync-if-timing {ref1 | ref2 | bits | bitsa | bitsb | gnss | gnssa | gnssb | synce | syncea | synceb }
```

### Context

[\[Tree\]](#) (clear>system sync-if-timing)

### Full Context

```
clear system sync-if-timing
```

### Description

This command individually clears (re-enables) a previously failed reference. As long as the reference is one of the valid options, this command is always executed. An inherent behavior enables the revertive mode which causes a reevaluation of all available references.

The timing options may vary depending on the platform because not all options are supported on all platforms.

This command also clears the Wait-to-Restore state of the reference so that it can be selected.

### Parameters

#### ref1

Clears the first timing reference.

#### ref2

Clears the second timing reference.

#### bits

Clears the bits timing reference on the CPM.

#### bitsa

Clears the BITS port timing reference of CPM A for redundant systems with a BITS port on each CPM.

#### bitsb

Clears the BITS port timing reference of CPM B for redundant systems with a BITS port on each CPM.

#### gnss

Clears the GNSS port timing reference. This keyword is only supported on 7750 SR single-slot FP5 platforms.

#### gnssa

Clears the GNSS port timing reference for the CPM in slot A. This keyword is only supported on 7750 SR-2se platforms.

#### gnssb

Clears the GNSS port timing reference for the CPM in slot B. This keyword is only supported on 7750 SR-2se platforms.

### **synce**

Clears the SyncE/1588 port timing reference. This keyword is only supported on single slot systems.

### **syncea**

Clears the SyncE/1588 port of the CPM A timing reference. This keyword is only supported on platforms supporting redundant CPM.

### **synceb**

Clears the SyncE/1588 port of the CPM B timing reference. This keyword is only supported on platforms supporting redundant CPM.

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## **sync-if-timing**

### **Syntax**

**sync-if-timing** *reference*

### **Context**

[\[Tree\]](#) (clear>system>satellite>eth-sat sync-if-timing)

### **Full Context**

clear system satellite eth-sat sync-if-timing

### **Description**

This command clears (re-enables) a previously failed reference on the Ethernet satellite.

### **Parameters**

#### ***reference***

Specifies to clear the first or second timing reference.

**Values** ref1, ref2

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## **sync-if-timing**

### **Syntax**

**sync-if-timing** *reference*



### Context

[\[Tree\]](#) (clear>system>satellite>tdm-sat sync-if-timing)

### Full Context

clear system satellite tdm-sat sync-if-timing

### Description

This command clears (re-enables) a previously failed reference on the TDM satellite.

### Parameters

#### *reference*

Specifies to clear the first or second timing reference.

**Values** ref1, ref2

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## 22.67 synchronization

### synchronization

### Syntax

synchronization

### Context

[\[Tree\]](#) (show>redundancy synchronization)

### Full Context

show redundancy synchronization

### Description

This command displays redundancy synchronization times.

### Platforms

All

### Output

The following output is an example of redundancy synchronization information, and [Table 591: Synchronization Output](#) describes the output fields.

### Output Example

```
A:ALA-1>show>redundancy# synchronization
=====
Synchronization Information
=====
Standby Status           : disabled
Last Standby Failure    : N/A
Standby Up Time         : N/A
Failover Time           : N/A
Failover Reason         : N/A
Boot/Config Sync Mode   : None
Boot/Config Sync Status : No synchronization
Last Config File Sync Time : Never
Last Boot Env Sync Time : Never
=====
A:ALA-1>show>redundancy#
```

Table 591: Synchronization Output

Label	Description
Standby Status	Displays the status of the standby CPM.
Last Standby Failure	Displays the timestamp of the last standby failure.
Standby Up Time	Displays the length of time the standby CPM has been up.
Failover Time	Displays the timestamp when the last redundancy failover occurred causing a switchover from active to standby CPM. If there is no redundant CPM card in this system or no failover has occurred since the system last booted, the value will be 0.
Failover Reason	Displays a text string giving an explanation of the cause of the last redundancy failover. If no failover has occurred, an empty string displays.
Boot/Config Sync Mode	Displays the type of synchronization operation to perform between the primary and secondary CPMs after a change has been made to the configuration files or the boot environment information contained in the boot options file (BOF).
Boot/Config Sync Status	Displays the results of the last synchronization operation between the primary and secondary CPMs.
Last Config File Sync Time	Displays the timestamp of the last successful synchronization of the configuration files.
Last Boot Env Sync Time	Displays the timestamp of the last successful synchronization of the boot environment files.

## 22.68 syslog

### syslog

#### Syntax

**syslog** [*syslog-id*]

#### Context

[\[Tree\]](#) (show>log syslog)

#### Full Context

show log syslog

#### Description

This command displays syslog event log destination summary information or detailed information on a specific syslog destination.

#### Parameters

***syslog-id***

Displays detailed information on the specified syslog event log destination.

**Values** 1 to 10

#### Platforms

All

#### Output

The following output is an example of syslog information, and [Table 592: Show log syslog output fields](#) describes the output fields.

#### Output example: syslog summary

```
A:node-2# show log syslog
```

```
=====
```

```
Syslog Target Hosts
```

```
=====
```

```
Syslog Name
```

Id	Ip Address	Port	Sev Level
	Below Level Drop	Facility	Prefix
	TLS Profile		

```
-----
```

```
Sunnyvale Server
```

1	10.1.1.2	514	emergency
	0	local7	yes

```
Naperville Server
```

2	192.168.0.10	514	info
---	--------------	-----	------

```

0                                local7    yes
=====
    
```

Table 592: Show log syslog output fields

Label	Description
Syslog Name	The syslog name for the syslog destination
Id	The syslog ID for the syslog destination
Ip Address	The IP address of the syslog target host
Port	The configured port number used when sending Syslog messages
Sev Level	The Syslog message severity level threshold
Below Level Drop	A count of messages not sent to the syslog collector target because the severity level of the message was above the configured severity. The higher the level, the lower the severity.
Facility	The facility code for messages sent to the syslog target host
Prefix	Yes — A log prefix was prepended to the Syslog message sent to the syslog host No — A log prefix was not prepended to the Syslog message sent to the syslog host
TLS Profile	The TLS profile name

The following output is an example of syslog information, and [Table 593: Show log syslog output fields for a specific syslog](#) describes the output fields.

**Output example: syslog ID 1 summary**

```

A:node-2# show log syslog 1

=====
Syslog target 1 name Sunnyvale Server
=====
IP Address      : 10.1.1.2
Port           : 514
Log-ids        : none
Prefix         : TMNX
Facility       : local7
Severity Level : info
Prefix         : yes
Below Level Drop : 0
Description    : N/A
TLS Profile Name : N/A
HOSTNAME       : node-2
TIMESTAMP Format : millisecond
=====
    
```

Table 593: Show log syslog output fields for a specific syslog

Label	Description
IP Address	The IP address of the syslog target host
Port	The configured port number used when sending Syslog messages
Log-ids	Events are directed to this destination
Prefix	The prefix string prepended to the Syslog message
Facility	The facility code for messages sent to the syslog target host
Severity Level	The Syslog message severity level threshold
Prefix	Yes — A log prefix was prepended to the Syslog message sent to the syslog host No — A log prefix was not prepended to the Syslog message sent to the syslog host
Below Level Drop	A count of the messages not sent to the syslog collector target because the severity level of the message was above the configured severity. The higher the level, the lower the severity.
Description	The syslog server description
TLS Profile Name	The TLS profile name
HOSTNAME	A string-based name used for the syslog HOSTNAME field instead of an IP address
TIMESTAMP Format	The timestamp format used for the syslog TIMESTAMP field: <ul style="list-style-type: none"> <li>standard – the standard HH:MM:SS format is being used</li> <li>millisecond – a format of HH:MM:SS.sss is being used. The 3 additional fractional second digits provide millisecond granularity.</li> </ul>

## syslog

### Syntax

**syslog**

### Context

[\[Tree\]](#) (show>service>nat syslog)

### Full Context

```
show service nat syslog
```

### Description

This command enters the connect to display NAT syslog information

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 22.69 syslog-export-policy

### syslog-export-policy

#### Syntax

```
syslog-export-policy name associations
```

```
syslog-export-policy name
```

```
syslog-export-policy
```

#### Context

[\[Tree\]](#) (show>service>nat>syslog syslog-export-policy)

#### Full Context

```
show service nat syslog syslog-export-policy
```

#### Description

This command displays information about syslog export policies.

#### Parameters

***name***

Displays information about the specified NAT syslog export policy.

**associations**

Displays where the **syslog-export-policy** is configured.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of syslog export policy information.

#### Output Example

```
*SR-05-NODE-1# show service nat syslog syslog-export-policy <name>
```

```

=====
NAT syslog policy
=====
Description
Facility
Log prefix
Max tx delay (deciseconds)
MTU
Rate limit (pps)
Severity level
Includes
Last management change
-----
Collectors
-----
Router
Source IP address
Administrative state
Destination port
IP address
Last management change
-----
    
```

The following output is an example of syslog export policy associations.

### Output Example

```

*A:Dut-C# show service nat syslog syslog-export-policy <name> associations
=====
policies with syslog-export-policy <name>
=====
Policy
-----
-----
No. of policies
=====
    
```

The following output is an example of syslog-export-policy <name> information.

```

*A:Dut-C# show service nat nat-policy <name>
=====
NAT Policy policy_lsn_1_3
=====
Description          :
Pool                 :
Router               :
Filtering            :
Block limit          :
Reserved ports       :
Port usage High Watermark (%) :
Port usage Low Watermark (%) :
Port forwarding limit :
Port forwarding range end :
Session limit        :
Reserved sessions    :
Session usage High Watermark (%) :
Session usage Low Watermark (%) :
ALG enabled          :
Prioritized forwarding classes :
Timeout TCP established (s) :
Timeout TCP transitory (s) :
    
```

```

Timeout TCP SYN (s) :
Timeout TCP TIME-WAIT (s) :
Timeout TCP RST (s) :
Timeout UDP mapping (s) :
Timeout UDP initial (s) :
Timeout UDP DNS (s) :
Timeout ICMP Query (s) :
Timeout SIP Inactive Media (s) :
Subscriber retention (s) :
UDP inbound refresh :
TCP MSS Adjust :
Destination NAT classifier :
Destination-NAT-only router :
Destination-NAT-only ISA NAT group :
IPFIX export policy :
Syslog export policy # syslog-export-policy associated with this nat-policy
Reset unknown TCP :
L2 outside :
Last Mgmt Change :
```

The following output is an example of syslog-export-policy information.

```

*A:Dut-C>show>service>nat>syslog# syslog-export-policy
=====
Syslog export policies
=====
Syslog export policy
Description# description of each syslog-export-policy
-----
No. of syslog export policies:
```

**Table 594: syslog-export-policy Fields** displays syslog export policy field descriptions.

*Table 594: syslog-export-policy Fields*

Field	Description
Description	Displays the description for the syslog export policy.
Facility	Displays information about the facility. Valid values: kernel, user, mail, systemd, auth, syslogd, printer, netnews, uucp, cron, authpriv, ftp, ntp, logaudit, logalert, cron2, local0, local1, local2, local3, local4, local5, local6, local7
Log prefix	Displays information about the log prefix.
Max tx delay (deciseconds)	Displays the time waited to aggregate multiple events into a single log message (event aggregation).
MTU	Displays information about the IP MTU of the syslog frame.
Rate limit (pps)	Displays the rate limit imposed on syslog frames sent toward the collector.
Severity level	Displays the syslog severity level.



Field	Description
	Valid values: emergency, alert, critical, error, warning, notice, info, debug
Includes	Displays the optional fields related to the flow that can be included in the flow log message.
Last management change	Displays the time and date of the last configuration change.
Router	Displays the routing instance from which the collector is reachable.
Source IP address	Displays the source IP address of the syslog frame.
Administrative state	Displays the administrative state of the collector.
Destination port	Displays the destination port of the collector.
IP address	Displays the IP address of the collector.
Syslog export policy	Displays the syslog export policy associated with this NAT policy.
No. of syslog export policies	Displays the number of syslog export policies configured in the system.

## 22.70 system

### system

#### Syntax

**system**

#### Context

[\[Tree\]](#) (show system)

#### Full Context

show system

#### Description

Commands in this context display system information.

#### Platforms

All

## system

### Syntax

**system**

### Context

[\[Tree\]](#) (tools>perform system)

### Full Context

tools perform system

### Description

This command is a tool for controlling the system.

### Platforms

All

## system

### Syntax

**system**

### Context

[\[Tree\]](#) (show>service system)

### Full Context

show service system

### Description

Commands in this context display service system information.

### Platforms

All

## system

### Syntax

**system [all]**

## Context

[\[Tree\]](#) (tools>dump>resource-usage system)

## Full Context

tools dump resource-usage system

## Description

This command displays resource information for resources that are managed at the system level.

## Parameters

**all**

Displays all system resource usage information, as well as resource usage information for all cards, FPs, and MDAs in the system.

## Platforms

All

## Output

The following output is an example of system information.

### Output Example

```
*A:PE# tools dump resource-usage system
=====
Resource Usage Information for System
=====
-----
Total   Allocated   Free
-----
SAP Ingress QoS Policies |      3071         1     3070
SAP Egress QoS Policies  |      3071         2     3069
Ingress Queue-Group Templates |      2047         4     2043
Egress Queue-Group Templates |      2047         5     2042
Egress Port Queue-Group Instances | 163839         4    163835
Ingress FP Queue-Group Instances |     16383         0     16383
Fast Depth Monitored Queues |     50000        25     49975
Egress Port VPort        |     40959         1     40958
```

## system

## Syntax

**system**

## Context

[\[Tree\]](#) (clear system)

## Full Context

clear system

## Description

This command allows an operator to clear system information.

## Platforms

All

system

## Syntax

system

## Context

[\[Tree\]](#) (tools>dump system)

## Full Context

tools dump system

## Description

Commands in this context dump tools for system.

## Platforms

All

system

## Syntax

system

## Context

[\[Tree\]](#) (tools>dump>service system)

## Full Context

tools dump service system

## Description

Commands in this context dump service system information.

## Platforms

All

## system

### Syntax

**system status**

### Context

**[Tree]** (show>subscr-mgmt>status system)

### Full Context

show subscriber-mgmt status system

### Description

This command displays subscriber management status information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of subscriber management system status information.

### Output Example

```
*B:Dut-C# show subscriber-mgmt status system
=====
Subscriber Management System Status
=====
Chassis 1
-----
Memory usage high                               : No
DHCP message processing overload                 : No
Statistics usage high                           : No
Number of subscribers using statistics           : 0
Data-trigger statistics
-----
Packets received                               : 0
Packets dropped                                : 0
Packets in queue (actual)                      : 0
Packets in queue (peak)                       : 1
Bridged Residential Gateway statistics
-----
BRG initialized                               : 0
BRG operational                               : 0
BRG in connectivity verification               : 0
BRG on hold                                   : 0
BRG authenticated by proxy                   : 0
Subscriber VLAN statistics resources
-----
Administrative state                           : in-service
Number of entries                             : 2
Interface statistics resources
-----
Administrative state sub-if                   : in-service
Number of sub-if stats entries                : 1
```

```
Administrative state grp-if : in-service
Number of grp-if stats entries : 2
=====
*B:Dut-C#
```

## 22.71 system-config

### system-config

#### Syntax

**system-config**

#### Context

[\[Tree\]](#) (show>eth-cfm system-config)

#### Full Context

show eth-cfm system-config

#### Description

This command shows various ETH-CFM system-level configuration parameters under the **config> eth-cfm** [\[{redundancy | slm | system}\]](#) hierarchies and various system capabilities.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of ETH-CFM system-level configuration information.

#### Output Example

```
show eth-cfm system-config
=====
CFM System Configuration
=====
Redundancy
  MC-LAG Standby MEP Shutdown: false
  MC-LAG Hold-Timer           : 1 second(s)

Synthetic Loss Measurement
  Inactivity Timer           : 100 second(s)

ETH-CCM Grace-Period
  Transmit Enabled           : true

Sender ID Information
  ChassisID Subtype          : chassisComponent

MD Auto-Id Range Information
  md-index start             : 3294967295
```

```

md-index end      : 4294967295
ma-index start   : 3294967295
ma-index end     : 4294967295

Display
  Name-based display : false

-----
ETH-CFM System Configuration Limits
-----
Component                               Current Usage      System Limit
-----
Maintenance Domain (MD)                  2                   25000
Maintenance Association (MA)              2                   25000
  Extended MA (up to 400 MEPs)           0                    10
Maintenance Endpoint (MEP)                2                   25000
  One-second MEP                          1                   10000
  Sub-second MEP                           0                    7000
Alarm Indication Signal (AIS)             0                   25000
Client Signal Fail (CSF)                  0                   25000
Primary Vlan Ingress MP                   0                   19999
Primary Vlan Egress MP                    0                   19999
LMM Stats Enabled                         0                    8000
LBM Concurrent Tests                      0                    1000
  Multicast LB Tests                      0                     10
LTM Concurrent Tests                      0                     100
=====
    
```

```

MD Auto-Id Range Information
  md-index start   : 3000000000
  md-index end     : 4000000000
  ma-index start   : 3000000000
  ma-index end     : 4000000000

-----
ETH-CFM System Configuration Limits
-----
Component                               Current Usage      System Limit
-----
Maintenance Domain (MD)                  9                   25000
Maintenance Association (MA)              26                  25000
  Extended MA (up to 400 MEPs)           0                    10
Maintenance Endpoint (MEP)                18                  25000
  One-second MEP                          16                   5000
  Sub-second MEP                           0                    5000
Alarm Indication Signal (AIS)             2                   25000
Client Signal Fail (CSF)                  0                   25000
Primary Vlan Ingress MP                   3                   19999
Primary Vlan Egress MP                    3                   19999
LMM Stats Enabled                         1                    8000
LBM Concurrent Tests                      0                    100
  Multicast LB Tests                      0                     10
LTM Concurrent Tests                      0                     100
    
```

## 22.72 system-filter

### system-filter

#### Syntax

**system-filter** [chained-to]

#### Context

[\[Tree\]](#) (show>filter system-filter)

#### Full Context

show filter system-filter

#### Description

This command shows system filter information.

#### Parameters

##### chained-to

Displays filters that chain to a given system filter.

#### Platforms

All

#### Output

**No Parameters Specified** — When no parameters are specified, the output is grouped for IPv4 and IPv6, and displays information about the active system filter and all filters with scope **system**.

The following output is an example of system filter information when no parameters are specified.

#### Output Example

```
*A:Dut-C>show>filter# system-filter

=====
IP system filters
=====
Filter-Id                Active
-----
100                      Yes
65535                    No
-----
No. of IP system filters (total / active): 2 / 1
=====

=====
IPv6 system filters
=====
Filter-Id                Active
-----
```



```
No Matching Entries
-----
No. of IPv6 system filters (total / active): 0 / 0
=====
```

**With chained-to Option Specified** — The following output is an example of system filter information when the **chained-to** option is specified.

```
*A:Dut-C>show>filter# system-filter chained-to
=====
IP filters that chain to the active IP system filter
=====
3           4           5           6
5:23       6:24
-----
No. of IP filters that chain to the active IP system filter: 6
=====

IPv6 filters that chain to the active IPv6 system filter
=====
No Matching Entries
-----
No. of IPv6 filters that chain to the active IPv6 system filter: 0
=====
```

## 22.73 system-info

### system-info

#### Syntax

**system-info**

#### Context

[\[Tree\]](#) (show>eth-cfm system-info)

#### Full Context

show eth-cfm system-info

#### Description

This command displays system-level ETH-CFM information states.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of system-level ETH-CFM information.

### Output Example

```
show eth-cfm system-info
=====
CFM System State Information
=====
ETH-CCM Grace-Period      : Inactive
=====
```

## 22.74 system-statistics

### system-statistics

#### Syntax

```
system-statistics data-trigger
```

#### Context

[\[Tree\]](#) (clear>subscr-mgmt system-statistics)

#### Full Context

```
clear subscriber-mgmt system-statistics
```

#### Description

This command clears subscriber statistics at the system level.

#### Parameters

**data-trigger**

Clears data trigger statistics for all data trigger enabled SAPs in the system.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### system-statistics

#### Syntax

```
system-statistics
```

#### Context

[\[Tree\]](#) (clear>nat system-statistics)

#### Full Context

```
clear nat system-statistics
```

### **Description**

This command clears NAT statistics at the system level.

### **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23 t Commands

### 23.1 tacplus

#### tacplus

##### Syntax

**tacplus** *server-index*

##### Context

**[Tree]** (clear tacplus)

##### Full Context

clear tacplus

##### Description

This command clears the TACACS+ server state.

##### Parameters

***server-index***

Specifies the index for the TACACS+ server.

**Values** 1 to 5

##### Platforms

All

### 23.2 taii-type2-using

#### taii-type2-using

##### Syntax

**taii-type2-using** *global-id[:prefix[:ac-id]]*

##### Context

**[Tree]** (show>service taii-type2-using)

## Full Context

```
show service taii-type2-using
```

## Description

This command displays switch-point information using TAI.

## Parameters

***global-id[:prefix[:ac-id]]***

Specifies the switch-point information using SAll-Type2.

### Values

<global-id[:prefix*>	: <global-id>[:<prefix>[:<ac-id>]]
global-id	1 to 4294967295
prefix	a.b.c.d   1 to 4294967295
ac-id	1 to 4294967295

## Platforms

All

## Output

The following output is an example of service switch-point information using TAI information.

### Output Example

```
*A:Dut-E# show service taii-type2-using 6:10.20.1.6:1
=====
Service Switch-Point Information
=====
SvcId      Oper-SdpBind      TAII-Type2
-----
2147483598 17407:4294967195 6:10.20.1.6:1
-----
Entries found: 1
=====
```

## 23.3 tail

### tail

#### Syntax

**tail** [*lsp-id lsp-id*] [*tunnel-id tunnel-id*] [**source-address** *ip-address*]

**tail ldp prefix** *ip-prefix/prefix-length* [**source-address** *ip-address*]

**tail statistics**

## Context

**[Tree]** (tools>dump>test-oam>lsp-bfd tail)

## Full Context

tools dump test-oam lsp-bfd tail

## Description

This command dumps information for BFD sessions on LSPs.

## Parameters

### *lsp-id*

Specifies an LSP for which to dump information.

**Values** 1 to 65535

### *tunnel-id*

Specifies a tunnel for which to dump information.

**Values** 1 to 65535

### *ip-address*

Specifies an IP address for which to dump information.

**Values** *ipv4-address* — a.b.c.d  
*ipv6-address* — x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)

### *ldp*

Dumps LDP information.

### *ip-prefix/prefix-length*

Specifies a source IP prefix for which to dump information, and the prefix length.

**Values** <*ipv4-prefix*>/32 | <*ipv6-prefix*>/128  
*ipv4-prefix* — a.b.c.d  
*ipv4-prefix-length* — 0 to 32  
*ipv6-prefix* — x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x — 0 to FFFF (hexadecimal)  
d — 0 to 255 (decimal)  
*ipv6-prefix-length* — 0 to 128

### *statistics*

Displays global statistics for BFD-on-LSP sessions terminated by LSP tail-ends.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of tail information.

### Output Example

```
A:bkvm33>tools>dump>test-oam>lsp-bfd# tail
-----
Number of Matched Tail Cache Sessions : 3
-----

VrId          : 1
Fec Type      : ldp_ipv4(1)
Prefix        : 1.1.1.1/32
SenderIp      : 9.9.9.9
Discriminator : remoteBfdDisc 21 localBfdDisc 2
Bootstrap-echo-rx: rcvd 2017/01/27 18:57:00.00 UTC
                handle 37 seqNum 2 rc 3 rsc 1
Last echo-req-rx : rcvd 2017/01/27 18:58:05.00 UTC
                handle 37 seqNum 3 rc 3 rsc 1

VrId          : 1
Fec Type      : ldp_ipv6(2)
Prefix        : 3ffe::a14:1111/128
SenderIp      : 3ffe::a14:9999
Discriminator : remoteBfdDisc 21 localBfdDisc 2
Bootstrap-echo-rx: rcvd 2017/01/27 18:56:55.00 UTC
                handle 36 seqNum 2 rc 3 rsc 1
Last echo-req-rx : rcvd 2017/01/27 18:58:00.00 UTC
                handle 36 seqNum 3 rc 3 rsc 1

VrId          : 1
Fec Type      : rsvp_ipv4(3)
LspId         : 59396
TunnelId      : 2
SenderIp      : 9.9.9.9
TunnEndIp     : 1.1.1.1
ExtTunnId     : 9.9.9.9
Discriminator : remoteBfdDisc: 22 localBfdDisc: 3
Bootstrap-echo-rx: rcvd 2017/01/27 18:57:23.00 UTC
                handle 38 seqNum 2 rc 3 rsc 1
Last echo-req-rx : rcvd 2017/01/27 19:20:28.00 UTC
                handle 38 seqNum 25 rc 3 rsc 1
```

## 23.4 targ-peer

### targ-peer

#### Syntax

**targ-peer** [*ip-address*] [*detail*]

**targ-peer** [*detail*] *family*

## targ-peer resource-failures [*family*]

### Context

[\[Tree\]](#) (show>router>ldp targ-peer)

### Full Context

show router ldp targ-peer

### Description

This command displays configuration information for the targeted LDP peers.

### Parameters

#### *ip-address*

Specifies the IP address of a targeted LDP peer for which to display information.

Values	
ipv4-address	-a.b.c.d
ipv6-address:	x:x:x:x:x:x:x x:x:x:x:x:d.d.d.d x: [0 to FFFF]H d: [0 to 255]D

#### *detail*

Displays detailed configuration information.

#### *family*

Specifies a peer family for which to display information.

Values	
ipv4 or ipv6	

#### *resource-failures*

Displays resource failure information for targeted LDP peers.

### Platforms

All

### Output

The following outputs are examples of LDP targeted peer information, and [Table 595: LDP Targeted Peer Output Fields](#) describes the output fields.

#### Output Example

```
*A:Dut-A# show router ldp targ-peer
=====
LDP IPv4 Targeted Peers
=====
Peer                               Adm/  Hello Hold  KA  KA  Auto
                                Opr   Fctr  Time  Fctr Time Created
```



```

-----
No Matching Entries Found
=====
LDP IPv6 Targeted Peers
=====
Peer                               Adm/  Hello Hold  KA  KA  Auto
                                Opr   Fctr  Time  Fctr Time Created
-----
3ffe::a0a:203                       Up/Up  3    15   3   30   no
-----
No. of IPv6 Targeted Peers: 1
=====
    
```

### Output Example

```

show router ldp targ-peer 10.20.1.2 detail
=====
LDP IPv4 Targeted Peers
=====
10.20.1.2
-----
Admin State       : Up           Oper State       : Up
Last Oper Chg    : 0d 00:08:11
Hold Time        : 15           Hello Factor     : 3
Oper Hold Time   : 15           Hello Reduction  : Disabled
Hello Reduction  : Disabled      Hello Reduction Fctr : 3
Keepalive Timeout : 30          Keepalive Factor : 3
Active Adjacencies : 1         Last Modified    : Never
Auto Created     : Yes
Creator          : autotx       Template Name    : N/A
Tunneling        : Enabled
Lsp Name         : None
Mcast-Tunneling  : Disabled
Lsp Name         : None
Local LSR        : None         32-BitLocalLsr  : Disabled
BFDD Status      : Disabled
=====
No. of IPv4 Targeted Peers: 1
=====
    
```

The following table describes the LDP targeted peer output fields.

*Table 595: LDP Targeted Peer Output Fields*

Label	Description
Peer	The IP address of the peer.
Adm	Up — The LDP is administratively enabled. Down — The LDP is administratively disabled.
Opr	Up — The LDP is operationally enabled. Down — The LDP is operationally disabled.
Hello Fctr	The value by which the hello timeout should be divided to give the hello time, for example, the time interval (in s), between LDP hello messages. LDP uses

Label	Description
	hello messages to discover neighbors and to detect loss of connectivity with its neighbors.
Hold Time	The hello time or hold time. The time interval (in seconds) that LDP waits before declaring a neighbor to be down. Hello timeout is local to the system and is sent in the hello messages to a neighbor.
KA Fctr	The value by which the keepalive timeout is divided to calculate the keepalive time, for example, the time interval (in seconds) between LDP keepalive messages. LDP keepalive messages are sent to keep the LDP session from timing out when no other LDP traffic is being sent between the neighbors.
KA Time	The time interval (in seconds) that LDP waits before tearing down a session. If no LDP messages are exchanged during this time interval, the LDP session is torn down. Generally, the value is configured to be 3 times the keepalive time (the time interval between successive LDP keepalive messages).
Active Adjacencies	The number of active adjacencies (established sessions) associated with the LDP instance.
Auth	Enabled — Authentication using MD5 message-based digest protocol is enabled. Disabled — No authentication is used.
Passive Mode	The mode used to set up LDP sessions. This value is only applicable to targeted sessions and not to LDP interfaces. True — LDP responds only when it gets a connect request from a peer and will not attempt to actively connect to its neighbors. False — LDP actively tries to connect to its peers.
Auto Created	Specifies that a targeted peer was automatically created through service manager. For an LDP interface, this value is always false.
Creator	autorx — The autorx is the creator. autotx — The autotx is the creator.
No. of Peers	The total number of LDP peers.
Tunneling	Enabled — Tunneling is enabled. Disabled — No tunneling is used.
LSP	The LSP name.

## 23.5 targ-peer-template

### targ-peer-template

#### Syntax

**targ-peer-template** [*peer-template*] [**community** *community*]

#### Context

[\[Tree\]](#) (show>router>ldp targ-peer-template)

#### Full Context

show router ldp targ-peer-template

#### Description

This command displays the configured parameters of a targeted peer-template.

#### Parameters

##### *peer-template*

Specifies a targeted peer template on this virtual router that participates in the LDP protocol up to 32 characters.

##### *community*

The string defining the LDP community assigned to the session. Allowed values are any string up to 32 characters long composed of printable, 7-bit ASCII characters excluding double quotes. If the string contains spaces, use double quotes to delimit the start and end of the string.

#### Platforms

All

#### Output

##### Output Example

```
*A:SRU4>config>router>ldp>egr-stats>fec-pfx# show router ldp targ-peer-template
=====
LDP Peer Template
=====
-----
Peer Template "toSR4"
-----
Created at       : 01/26/18 22:25:19  Last Modified    : 01/26/18 22:25:19
Admin State     : Up                  Index            : 5
Hold Time       : 15                  Hello Factor     : 3
Hello Reduction : Enabled              Hello Reduction Fa*: 3
Keepalive Timeout : 15                 Keepalive Factor : 3
Tunneling       : Enabled
Local LSR       : None
```

```
Local-LSR ID adver*: Enabled  
Community          : RED  
BFD Status         : Enabled  
-----
```

## 23.6 targ-peer-template-map

### targ-peer-template-map

#### Syntax

```
targ-peer-template-map [template-name]  
targ-peer-template-map [template-name] peers
```

#### Context

[\[Tree\]](#) (show>router>ldp targ-peer-template-map)

#### Full Context

```
show router ldp targ-peer-template-map
```

#### Description

This command displays targeted peer template mappings to prefix policy.

#### Parameters

**template-name**  
Specifies the template name, up to 32 characters.

#### Platforms

All

#### Output

##### Output Example

```
*A:SR1-A# /show router ldp targ-peer-template-map  
=====
```

LDP Peer Template Map	
-----	
Peer Template templ1	
-----	
Peer Policy 1	: policy1
-----	
Peer Template templ2	
-----	
Peer Policy 1	: policy1
Peer Policy 2	: policy2
Peer Policy 3	: policy3

```
-----  
Peer Template templ3  
-----  
Peer Policy 1          : policy2  
=====
```

\*A:SR1-A# /show router ldp targ-peer-template-map tldp-peers  
=====

LDP Peer Template Map TLDP Peers  
=====

```
-----  
Peer Template templ1  
-----  
10.0.10.1              10.0.10.2  
10.0.10.3              10.0.10.4  
10.0.10.5              10.0.10.6  
10.0.10.7              10.0.10.8  
10.0.10.9              10.0.10.10  
10.0.10.11             10.0.10.12  
10.0.10.13             10.0.10.14  
10.0.10.15             10.0.10.16  
10.0.10.17             10.0.10.18  
10.0.10.19             10.0.10.20  
10.0.10.21             10.0.10.22  
10.0.10.23             10.0.10.24  
10.0.10.25             10.0.10.26  
10.0.10.27             10.0.10.28  
10.0.10.29             10.0.10.30  
10.0.10.31             10.0.10.32  
10.0.10.33             10.0.10.34  
10.0.10.35             10.0.10.36  
10.0.10.37             10.0.10.38  
10.0.10.39             10.0.10.40  
10.0.10.41             10.0.10.42  
10.0.10.43             10.0.10.44  
10.0.10.45             10.0.10.46  
10.0.10.47             10.0.10.48  
10.0.10.49             10.0.10.50  
-----
```

```
Peer Template templ3  
-----  
10.1.3.5               10.1.3.6  
10.1.3.7               10.1.3.8  
10.1.3.9               10.1.3.10  
10.1.3.11              10.1.3.12  
10.1.3.13              10.1.3.14  
=====
```

## 23.7 targeted-auto-rx

### targeted-auto-rx

#### Syntax

**targeted-auto-rx hold-time** *seconds*

## Context

[\[Tree\]](#) (clear>router>ldp targeted-auto-rx)

## Full Context

```
clear router ldp targeted-auto-rx
```

## Description

This command clears unneeded automatic T-LDP sessions on all applicable nodes. The operator must run this command during a specific time window on all nodes on which **auto-rx** is configured. The operator must also ensure that the configured **hold-time** value should be longer than the hello-timer value plus the time required to run the **clear** command on all applicable nodes. The configured **hold-time** value must be a non-zero value.

When the hold timer for this command is in progress, the operator can display the remaining timeout value by using the **tools dump router ldp timers** command.

This **clear** command is not synchronized to the standby CPM. Consequently, if the operator configures this command with a large **hold-time** value and a CPM switchover occurs during this time, the operator must reconfigure this **clear** command on the newly active CPM.

## Parameters

### **hold-time**

Specifies the time window during which this command must be run on all applicable nodes.

### **seconds**

Specifies the hold timer value in seconds.

## Platforms

All

## 23.8 tcp

tcp

## Syntax

**tcp sessions**

**tcp settings**

**tcp statistics**

## Context

[\[Tree\]](#) (tools>dump>system>cpm-http-redirect tcp)

## Full Context

```
tools dump system cpm-http-redirect tcp
```

## Description

This command displays the system level TCP session state information of the **cpm-http-redirect optimized-mode** for currently opened sessions. Specifically, the following are displayed:

- New: Syn received and Syn-Ack not sent
- SYN: Syn-Ack sent and waiting for Ack
- ESTABLISHED: Ack received and waiting for data
- FIN: FIN sent and waiting for Fin-Ack
- Delete: Sum of all currently open connections at this time, representing the connections to be deleted
- HTTP Response dropped: communication error; the redirect failed to be sent to the TCP layer

All current sessions are counted both in the state where they belong, such as 'New', 'Syn', 'Established', 'Fin', and in the sum 'Delete' count.

## Parameters

### sessions

Specifies system level TCP session state information of the **cpm-http-redirect in optimized-mode**.

### settings

Specifies system level TCP session settings of the **cpm-http-redirect in optimized-mode**. These settings can be further controlled using **tools perform** commands.

### statistics

Specifies system level TCP statistics of the **cpm-http-redirect optimized-mode** for all sessions.

## Platforms

All

## Output

The following output is an example of the sessions information.

### Output Example

```
A# tools dump system cpm-http-redirect tcp sessions
=====
CPM HTTP Redirect TCP session information
=====
TCP sessions in new state           : 0
TCP sessions in state SYN           : 0
TCP sessions in state ESTABLISHED   : 0
TCP sessions in state FIN           : 0
TCP sessions in delete state        : 0
=====
```

The following output is an example of the settings information.

### Output Example

```
Dut-A# tools dump system cpm-http-redirect tcp settings
data-retransmissions 1
```

```
data-timeout 20
established-timeout 100
fin-ack-retransmissions 1
fin-ack-timeout 15
max-connections 500
max-connections-per-host 20
max-hosts 500
syn-ack-retransmissions 1
syn-ack-timeout 20
```

The following output is an example of the statistics information.

### Output Example

```
A# tools dump system cpm-http-redirect tcp statistics
=====
CPM HTTP Redirect TCP statistics (only nonzero values shown)
=====
Packets forwarded                : 25
TCP segments received            : 8
Not a TCP segment                : 17
Packets offered to redirect      : 2
SYN received                     : 2
FIN,ACK received                 : 2
ACK received                     : 4
Valid TCP packets received       : 8
Received packets                 : 25
Received packets with a connection : 8
Connection creations             : 2
Connection deletions             : 2
SYN processed                    : 2
SYN,ACK processed                : 2
SYN,ACK with data processed      : 2
FIN,ACK processed                : 2
FIN,ACK with wrong sequence number : 2
=====
```

## 23.9 tcp-optimizer

### tcp-optimizer

#### Syntax

```
tcp-optimizer tcp-optimizer-name [isa mda-id]
```

#### Context

[\[Tree\]](#) (show>app-assure>group tcp-optimizer)

#### Full Context

```
show application-assurance group tcp-optimizer
```

#### Description

This command displays the TCP optimizer information.



## Parameters

### *tcp-optimizer-name*

Specifies the name of the TCP validation policy, up to 32 characters.

### *mda-id*

Specifies the slot number of an adapter card, in the format *slot/mda*.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of an AA group TCP optimizer policy, and [Table 596: AA Group TCP Optimizer Policy and ISA MDA Output Fields](#) describes the output fields.

### Output Example

```
A:node-2# show application-assurance group 1 tcp-optimizer "T01"
=====
Application Assurance Group 1 tcp-optimizer "T01"
=====
Description           : tcp-optimizer T01
TCP Stack              : tcp-westwood
Initial CWND Size     : 9 MSS
Initial SS Thresh     : 48751 KB
DACK Timeout          : 200 ms
Session Filter Ref    : Yes
Network RTT Threshold : None
High CPU backoff      : Yes

Cumulative Session Statistics
Active Sessions       : 0
Optimized Sessions   : 0
Unoptimized Sessions : 0
Abandoned Sessions   : 0

-----
Session Statistics           Abandoned           Unoptimized
-----
Unsupported Packet          0                   0
Packet Error                0                   0
Inactivity                  0                   0
No Buffers                  N/A                 0
Existing Session            N/A                 0
Low Network RTT             N/A                 0
Policy                      0                   N/A
Resource Exhaustion         0                   0
Other                       0                   0

-----
Traffic Statistics           Sub-to-net           Net-to-sub
-----
Octets Received             0                   0
Packets Received           0                   0

Octets Transmitted         0                   0
Retransmitted              0                   0
Packets Transmitted        0                   0
Retransmitted              0                   0
=====
```

The following output is an example of an AA group TCP optimizer ISA MDA, and [Table 596: AA Group TCP Optimizer Policy and ISA MDA Output Fields](#) describes the output fields.

**Output Example**

```
A:node-2# show application-assurance group 1 tcp-optimizer "T01" isa 1/1
=====
Application Assurance Group 1 tcp-optimizer "T01" ISA 1/1
=====
Description          : (Not Specified)
TCP Stack            : tcp-westwood
Initial CWND Size    : 8 MSS
Initial SS Thresh    : 1000000 KB
DACK Timeout         : None
Session Filter Ref   : No
Network RTT Threshold : None
Buffer Utilization   : 0 of 6786 buffers
Cumulative Session Statistics
Active Sessions      : 0
Optimized Sessions   : 0
Unoptimized Sessions : 0
Abandoned Sessions  : 0
-----
Session Statistics           Abandoned           Unoptimized
-----
Unsupported Packet          0                   0
Packet Error                0                   0
Inactivity                  0                   0
No Buffers                  N/A                 0
Existing Session            N/A                 0
Low Network RTT             N/A                 0
Resource Exhaustion         0                   0
Other                       0                   0
-----
Traffic Statistics           Sub-to-net           Net-to-sub
-----
Octets Received             0                   0
Packets Received           0                   0
Octets Transmitted          0                   0
Retransmitted               0                   0
Packets Transmitted         0                   0
Retransmitted               0                   0
=====
```

*Table 596: AA Group TCP Optimizer Policy and ISA MDA Output Fields*

Label	Description
Description	The description of the TCPO
TCP Stack	The stack of the TCP
Initial CWND Size	The initial congestion window size
Initial SS Thresh	The initial Slow Start threshold
DACK Timeout	The delayed acknowledgment timeout
Session Filter Ref	The session filter reference

Label	Description
Network RTT Threshold	The network Round Trip Time threshold
High CPU backoff	The configuration of the <b>configure application-assurance group tcp-optimizer high-cpu-backoff</b> command.
Buffer Utilization	The number of the buffers used
Session Filter Ref	The name of session filter that contains a reference to this TCPO policy
Cumulative Session Statistics	The summary of total stats related to TCPO
Active Sessions	The number of TCP sessions currently being optimized
Optimized Sessions	The number of TCP sessions that were optimized
Unoptimized Sessions	The number of TCP sessions that were not optimized due to various reasons (for example, unsupported options)
Abandoned Sessions	The number of TCP sessions that TCPO was started and later stopped before the session was terminated
Unsupported Packet	The number of TCP sessions that contained unsupported packets such as Fragmented SYN, a SYN that contains data, IPv6 extension headers, unsupported TCP options (fast-open and MP-TCP)
Packet Error	The number of TCP sessions that had packet errors
Inactivity	The number of TCP sessions that timed out due to inactivity
Existing Sessions	The number of TCP sessions that were not optimized since AA did not see the initial TCP handshake
No Buffers	The number of TCP packets that were not optimized due to lack of buffers
Low Network RTT	The number of TCP packets that were not optimized due to low network RTT
Resource Exhaustion	The number of TCP sessions that were either abandoned or not optimized because of resource exhaustion
Other	The number of TCP packets that were not optimized due other reasons such as Simultaneous open (both sides send a SYN), Ack-number mismatch in the SYN/ACK, additional traffic following the SYN, before the SYN/ACK, configuration change between SYN and SYN/ACK, received a RST after sending the SYN
Octets Received	The number of TCP octets /bytes received by TCPO policy

Label	Description
Packets Received	The number of TCP packets received by TCPO policy
Octets Transmitted	The number of TCP octets /bytes received by TCPO policy
Retransmitted	The number of TCP octets /bytes transmitted by TCPO policy
Packets Transmitted	The number of TCP packets transmitted by TCPO policy
Retransmitted	The number of TCP packets retransmitted by TCPO policy

## 23.10 tcp-performance

### tcp-performance

#### Syntax

**tcp-performance fields**

#### Context

[\[Tree\]](#) (show>app-assure>cflowd tcp-performance)

#### Full Context

show application-assurance cflowd tcp-performance

#### Description

This command displays the fields in the AA cflowd TCP performance template.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of AA cflowd TCP performance template fields, and [Table 597: Show TCP Performance Template Output Fields](#) describes the output fields.

#### Output Example

```
show application-assurance cflowd tcp-performance fields

=====
Fields for Application Assurance cflowd tcp-performance template
=====
Name                ID      Len Mode  Dy Description
-----
aaApp                32770  32  MRVL  *  AA Application
aaAppGrp             32771  32  MRVL  *  AA Application Group
aaChargingGrp       32888  32  MRVL  *  AA Charging Group
aaProt               32769  32  MRVL  *  AA Protocol
```

aaSubTetheringState	32896	1	MRVL	*	AA subscriber tethering state
aaSubType	32780	1	MRVL	.	AA Subscriber Type
anlCongestionState	32874	1	MRVL	*	access network location congestion state
anlTopology	32873	16	MRVL	*	access network location topology
anlType	32872	1	MRVL	*	access network location type
apn	32876	33	MRV-	*	access point name
apnExtended	32928	64	MRV-	*	extended access point name
bsid	32883	12	MRV-	*	base station id
cellId	32886	4	MRV-	*	cell id
chargeId	32877	4	MRV-	*	charging group id
chargingChar	32901	2	MRV-	*	3GPP charging characteristic
customerId	32902	4	M---	*	Customer identifier
destinationIPv4Address	12	4	MRVL	.	Destination IPv4 address
destinationIPv6Address	28	16	MRVL	.	Destination IPv6 address
destinationTransportPort	11	2	MRVL	.	Destination transport port
deviceId	32865	2	MRVL	*	device ID
deviceMfgId	32866	2	MRVL	*	device manufacturer ID
deviceOsId	32867	2	MRVL	*	device operating system ID
deviceOsVer1	32869	1	MRVL	*	device operating system version number 1
deviceOsVer2	32870	1	MRVL	*	device operating system version number 2
deviceOsVer3	32871	1	MRVL	*	device operating system version number 3
droppedOctetTotalCount	134	8	MRVL	.	Dropped octet total count
droppedPacketTotalCount	135	8	MRVL	.	Dropped packet total count
flowAttr_abr_service	32890	1	MRVL	*	flow attribute: abr service
flowAttr_audio	32891	1	MRVL	*	flow attribute: audio
flowAttr_download	32893	1	MRVL	*	flow attribute: download
flowAttr_encrypted	32892	1	MRVL	*	flow attribute: encrypted
flowAttr_esni	32907	1	MRVL	*	flow attribute: encrypted SNI
flowAttr_realtime_communication	32895	1	MRVL	*	flow attribute: real time communication
flowAttr_upload	32894	1	MRVL	*	flow attribute: upload
flowAttr_video	32889	1	MRVL	*	flow attribute: video
flowDirection	61	1	MRVL	.	Flow direction
flowDurationMilliseconds	161	4	MRVL	*	Flow duration milliseconds
flowStartSeconds	150	4	MRVL	*	Flow start seconds
hostName	32864	64	MRVL	*	host name
hostNameExtended	32920	101	MRVL	*	host name extended
imei	32897	8	MRV-	*	International Mobile Equipment Identity
imei-aes-128	32916	32	MRV-	*	imei AES-128 encrypted
imei-aes-256	32919	32	MRV-	*	imei AES-256 encrypted
imei-sha-1	32910	20	MRV-	*	imei SHA-1 hashed
imei-sha-256	32913	32	MRV-	*	imei SHA-256 hashed
imsi	32879	8	MRV-	*	international mobile subscriber identity
imsi-aes-128	32915	16	MRV-	*	imsi AES-128 encrypted
imsi-aes-256	32918	16	MRV-	*	imsi AES-256 encrypted
imsi-sha-1	32909	20	MRV-	*	imsi SHA-1 hashed
imsi-sha-256	32912	32	MRV-	*	imsi SHA-256 hashed
interfaceName	82	32	MRVL	.	Interface name
ipFamily	32868	1	MRVL	*	IP Family
ipTTL	192	1	MRVL	*	IP packet time to live
mcc	32899	2	MRV-	*	Mobile country code
mnc	32878	2	MRV-	*	mobile network code

```

msisdn                32880  8  MRV-  *  mobile station
                      international subscriber
                      directory number
msisdn-aes-128        32914  16 MRV-  *  msisdn AES-128 encrypted
msisdn-aes-256        32917  16 MRV-  *  msisdn AES-256 encrypted
msisdn-sha-1          32908  20 MRV-  *  msisdn SHA-1 hashed
msisdn-sha-256        32911  32 MRV-  *  msisdn SHA-256 hashed
observationPointId    138   4  MRVL  .  Observation point Id
octetTotalCount       85    8  MRVL  .  Octet total count
packetTotalCount      86    8  MRVL  .  Packet total count
pgw-ggsnAddr          32882  16 MRV-  *  public data network
                      gateway
plmnid                32903  4  MRV-  *  Public land mobile
                      network identifier
postIpPrecedence      257   1  MRVL  *  Post IP precedence
pra-id                32940  4  M---  *  presence reporting area ID
protocolIdentifier     4     1  MRVL  .  Protocol Identifier
ratType               32884  2  MRV-  *  radio access technology
                      type
regionId              32885  2  MRV-  *  region id
roamingStatus         32898  1  M---  *  Roaming status
sessionDirection      32781  1  MRVL  .  Session Direction
sgw-sgsnAddr          32881  16  M---  *  serving gateway
sourceIPv4Address     8     4  MRVL  .  Source IPv4 address
sourceIPv6Address     27    16 MRVL  .  Source IPv6 address
sourceTransportPort   7     2  MRVL  .  Source transport port
tcpDelayAvg           32775  4  MRVL  .  TCP Delay - average
tcpDelayMax           32774  4  MRVL  .  TCP Delay - max
tcpDelayMin           32773  4  MRVL  .  TCP Delay - min
tcpDelaySampleCnt     32777  4  MRVL  .  TCP Delay Samples Count
tcpDelayVariance      32776  8  MRVL  .  TCP Delay - variance
tcpRetransmittedBytes 32778  8  MRVL  .  TCP Retransmitted Bytes
tcpRetransmittedPackets 32779  8  MRVL  .  TCP Retransmitted Packets
tcpSessionEstDelay    32772  4  MRVL  .  TCP Session Establishment
                      Delay
timeZone              32887  2  M---  *  time zone
uli                   32900  18 MRV-  *  User location information
wireless-device-os-id 32941  1  MRV-  *  wireless device operating
                      system ID
wireless-device-type-id 32942  1  MRV-  *  wireless device type ID
-----
Legend :
  Mode (aa-sub-scale mode)  M mobile-gateway
                           R residential
                           V vpn
                           L lightweight-internet
  Dy (dynamic field)       . always included in this record type
                           * can be dynamically included in this record type
=====
    
```

Table 597: Show TCP Performance Template Output Fields

Label	Description
Name	Displays the name of the template field.
ID	Displays the ID of the template field.
Len	Displays the string length of the template field.
Mode	Displays the mode:

Label	Description
	<ul style="list-style-type: none"><li>• M — mobile gateway</li><li>• R — residential</li><li>• V — VPN</li><li>• L — lightweight Internet</li></ul>
Dy	Displays whether the field is dynamic: <ul style="list-style-type: none"><li>• . — always included in this record type</li><li>• * — can be dynamically included in this record type</li></ul>
Description	Displays the description of the template field.

## 23.11 tcp-session-parameters

### tcp-session-parameters

#### Syntax

**tcp-session-parameters**

**tcp-session-parameters** [*family*]

**tcp-session-parameters** [**keychain** *keychain*]

**tcp-session-parameters** [*transport-peer-ip-address*]

#### Context

[\[Tree\]](#) (show>router>ldp tcp-session-parameters)

#### Full Context

show router ldp tcp-session-parameters

#### Description

This command displays information about the TCP transport session of an LDP peer.

#### Parameters

##### *family*

Specifies the family type.

**Values** ipv4, ipv6

##### **keychain** *keychain*

Specifies the authentication keychain name up to 32 characters in length.

### ***transport-peer-ip-address***

Specifies the source of the transport address.

**Values** <transport-peer-ip\*> : ipv4-address - a.b.c.d ipv6-address -  
x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x - [0 to FFFF]H d  
- [0 to 255]D

### **Platforms**

All

### **Output**

#### **Output Example**

```
*A:Dut-A# show router ldp tcp-session-parameters
=====
LDP IPv4 TCP Session Parameters
=====
-----
Peer Transport: 10.20.1.2
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth            Min-TTL            : 0
-----
Peer Transport: 10.20.1.3
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth            Min-TTL            : 0
=====
No. of IPv4 Peers: 2
=====
LDP IPv6 TCP Session Parameters
=====
-----
Peer Transport: 3ffe::a14:102
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth            Min-TTL            : 0
-----
Peer Transport: 3ffe::a14:103
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth            Min-TTL            : 0
=====
No. of IPv6 Peers: 2
=====

*A:Dut-A# show router ldp tcp-session-parameters ipv4
=====
LDP IPv4 TCP Session Parameters
=====
-----
Peer Transport: 10.20.1.2
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth            Min-TTL            : 0
-----
Peer Transport: 10.20.1.3
-----
```



```
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth           Min-TTL            : 0
=====
No. of IPv4 Peers: 2
=====

*A:Dut-A# show router ldp tcp-session-parameters ipv6
=====
LDP IPv6 TCP Session Parameters
=====
-----
Peer Transport: 3ffe::a14:102
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth           Min-TTL            : 0
-----
Peer Transport: 3ffe::a14:103
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth           Min-TTL            : 0
=====
No. of IPv6 Peers: 2
=====

*A:Dut-A# show router ldp tcp-session-parameters keychain "LdpAuth"
=====
LDP IPv4 TCP Session Parameters
=====
-----
Peer Transport: 10.20.1.2
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth           Min-TTL            : 0
-----
Peer Transport: 10.20.1.3
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth           Min-TTL            : 0
=====
No. of IPv4 Peers: 2
=====

LDP IPv6 TCP Session Parameters
=====
-----
Peer Transport: 3ffe::a14:102
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth           Min-TTL            : 0
-----
Peer Transport: 3ffe::a14:103
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth           Min-TTL            : 0
=====
No. of IPv6 Peers: 2
=====

*A:Dut-A# show router ldp tcp-session-parameters
- tcp-session-parameters [family]
- tcp-session-parameters [keychain <keychain>]
- tcp-session-parameters [<transport-peer-ip-address>]

<transport-peer-ip*> : ipv4-address - a.b.c.d
                       ipv6-address - x:x:x:x:x:x:x (eight 16-bit
```

```

pieces)
x:x:x:x:x:d.d.d.d
x - [0..FFFF]H
d - [0..255]D

<family>          : ipv4 | ipv6
<keychain>        : auth-keychain name [32 char max]

*A:Dut-A# show router ldp tcp-session-parameters 3ffe::a14:102
=====
LDP IPv6 TCP Session Parameters
=====
-----
Peer Transport: 3ffe::a14:102
-----
Authentication Key : Disabled          Path MTU Discovery : Disabled
Auth key chain    : LdpAuth            Min-TTL             : 0
=====
No. of IPv6 Peers: 1
=====
*A:Dut-A#
    
```

## 23.12 tcp-validate

### tcp-validate

#### Syntax

**tcp-validate** *tcp-validate-name* [*isa mda-id*]

#### Context

[\[Tree\]](#) (show>app-assure>group tcp-validate)

#### Full Context

show application-assurance group tcp-validate

#### Description

This command displays TCP validation policy information.

When the *mda-id* parameter is included, only TCP validation policy information for the specified adapter card is displayed.

#### Parameters

##### *tcp-validate-name*

Specifies the name of the TCP validation policy. 32 characters maximum.

##### *mda-id*

Specifies the slot number of an adapter card, in the format *slot/mda*.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of TCP validation policy information.

### Output Example

```
A:NOK# show application-assurance group 1 tcp-validate "test" isa 1/1
=====
Application Assurance Group 1 tcp-validate "test"
=====
Description      : (Not Specified)
Event log        : (Not Specified)
Strict Validation: Yes
AQP referenced   : No
-----
Decision Statistics          sub-to-net          net-to-sub
-----
Total
-----
Allowed
  Octets                0                0
  Packets               0                0
Dropped
  Octets                0                0
  Packets               0                0
Dropped Reason
-----
Bad Flags
  Octets                0                0
  Packets               0                0
Bad Options
  Octets                0                0
  Packets               0                0
Bad Sequence Number
  Octets                0                0
  Packets               0                0
Bad Acknowledgment Number
  Octets                0                0
  Packets               0                0
No Establishment
  Octets                0                0
  Packets               0                0
SYN After Conn Establishment
  Octets                0                0
  Packets               0                0
Asymmetric Traffic
  Octets                0                0
  Packets               0                0
Traffic After Reset (RST)
  Octets                0                0
  Packets               0                0
Fragmented
  Octets                0                0
  Packets               0                0
```

## 23.13 tdm-sat

### tdm-sat

#### Syntax

**tdm-sat** [*sat-id*]

#### Context

[\[Tree\]](#) (show>system>satellite tdm-sat)

#### Full Context

show system satellite tdm-sat

#### Description

This command displays information about configured TDM satellites. If a *sat-id* is specified, this command displays information only about the specified TDM satellite.

#### Parameters

***sat-id***

Specifies the TDM satellite chassis.

#### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

#### Output

The following output is an example of TDM satellite information.

#### Output Example

```
*A:Dut-A# show system satellite tdm-sat 1
=====
Satellite Information
=====
SatID      Provisioned Type           Admin   Oper
           Equipped Type (if different) State   State
-----
tsat-1     ts4-choc3-sfp             up      up
Description : (Not Specified)
MAC Address  : 90:3a:a0:f0:71:97
Software Repository : tsat-1
SyncE       : Enabled
Hardware Data
  Platform type      : N/A
  Part number        : 3HE10328AARC0103
  CLEI code          : INMAT00FRA
  Serial number      : NS16361M001
  Manufacture date   : 09082016
  Manufacturing deviations : (Not Specified)
  Manufacturing assembly number :
```

```
Administrative state      : up
Operational state       : up
Software boot (rom) version : X-8.0.B1-105 on Tue Feb 14 22:51:10 EST
                          : 2017 by builder
Software version        : TiMOS-B-0.0.I3066 both/hops NOKIA SAR 7705
                          : Copyright (c) 2000-2017 Nokia.
                          : All rights reserved. All use subject to
                          : applicable license agreements.
                          : Built on Sat Feb 25 00:03:24 EST 2017 by
                          : builder in /rel0.0/I3066/panos/main
Time of last boot       : 2017/02/27 14:43:46
Current alarm state     : alarm cleared
Base MAC address       : 90:3a:a0:f0:71:97
=====
```

## tdm-sat

### Syntax

```
tdm-sat sat-id
```

### Context

```
[Tree] (clear>system>satellite tdm-sat)
```

### Full Context

```
clear system satellite tdm-sat
```

### Description

Commands in this context clear TDM satellite information.

### Parameters

*sat-id*

Specifies the TDM satellite ID.

**Values** 1 to 20

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-a, 7750 SR-e

## 23.14 te-database

## te-database

### Syntax

```
te-database [adv-router adv-router] [neighbor neighbor] [detail]
```

## Context

[Tree] (tools>dump>router te-database)

## Full Context

tools dump router te-database

## Description

Commands in this context dump the traffic engineering database.

## Parameters

### *adv-router*

Dumps the attributes of a specified traffic engineering database advertising router.

**Values** ip-address, isis-system-id

### *neighbor*

Dumps the neighbor of a traffic engineering database advertising router.

**Values** ip-address, isis-system-id

### *detail*

Specifies additional detailed traffic engineering database information.

## Platforms

All

## Output

The following output is an example of traffic engineering database information.

### Output Example

```
*A:Dut-F# tools dump router te-database
=====
Rtr: 0020.0200.2002 Addr: 2.2.2.2      TE ABR      ISIS/0/L1
Rtr: 0030.0300.3003 Addr: 3.3.3.3      ABR         ISIS/0/L1
AdvRtr: 0020.0200.2002 Nghb: 0030.0300.3003  ISIS/0/L1
  LocIp/Id 10.0.0.9      /0          TE R Status: OK
AdvRtr: 0030.0300.3003 Nghb: 0020.0200.2002  ISIS/0/L1
  LocIp/Id 10.0.0.10    /0          TE R Status: OK
=====
Rtr: 0020.0200.2002 Addr: 2.2.2.2      TE ABR      ISIS/0/L2
Rtr: 0030.0300.3003 Addr: 3.3.3.3      ABR         ISIS/0/L2
AdvRtr: 0020.0200.2002 Nghb: 0030.0300.3003  ISIS/0/L2
  LocIp/Id 10.0.0.9      /0          TE R Status: OK
AdvRtr: 0030.0300.3003 Nghb: 0020.0200.2002  ISIS/0/L2
  LocIp/Id 10.0.0.10    /0          TE R Status: OK
=====
```

## 23.15 te-lspinfo

### te-lspinfo

#### Syntax

**te-lspinfo** [**endpoint** *ip-address*] [**sender** *ip-address*] [**lspid** *lsp-id*] [**detail**] [ **p2p** | **p2p-tid** *tunnel-id*]

**te-lspinfo** [**endpoint** *ip-address*] [**sender** *ip-address*] [**lspid** *lsp-id*] [**detail**] [ **p2mp** | **p2mp-tid** *tunnel-id*]  
{ [**phops**] [ **nhops**] [**s2l** *ip-address*] }

#### Context

[\[Tree\]](#) (tools>dump>router>mpls te-lspinfo)

#### Full Context

tools dump router mpls te-lspinfo

#### Description

This command displays TE LSP information for MPLS.

#### Platforms

All

#### Output

The following output is an example of MPLS TE LSP information.

#### Output Example

```
B:Dut-R# tools dump router mpls te-lspinfo
Key P2P: Session(10.10.3.2, 201, 10.3.3.3) Sender(10.3.3.3, 2) PHOP(10.10.3.1),
Flags
0x0

Key P2P: Session(10.10.3.1, 1035, 10.4.4.4) Sender(10.4.4.4, 22) PHOP(10.10.11.2),
Flags
0x0

Key P2MP: Session(0.0.0.0, 1, 10.4.4.4) Sender(10.4.4.4, 52226) PHOP(0.0.0.0) Flags
0x10
  S2L [1] Key: endPoint to 10.2.2.2   subGroupId - 1 subGroupOrigId - 10.4.4.4
  S2L [2] Key: endPoint to 10.10.2.2  subGroupId - 3 subGroupOrigId - 10.4.4.4
  S2L [3] Key: endPoint to 10.10.13.2 subGroupId - 4 subGroupOrigId - 10.4.4.4

Key P2MP: Session(0.0.0.0, 2, 10.4.4.4) Sender(10.4.4.4, 51714) PHOP(0.0.0.0) Flags
0x10
  S2L [1] Key: endPoint to 10.2.2.2   subGroupId - 1 subGroupOrigId - 10.4.4.4
  S2L [2] Key: endPoint to 10.10.2.2  subGroupId - 3 subGroupOrigId - 10.4.4.4
  S2L [3] Key: endPoint to 10.10.13.2 subGroupId - 4 subGroupOrigId - 10.4.4.4

Key P2MP: Session(0.0.0.0, 3, 10.4.4.4) Sender(10.4.4.4, 53250) PHOP(0.0.0.0) Flags
0x10
```

```
*A:Dut-T# tools dump router mpls te-lspinfo p2mp-tid 102 nhops

Key P2MP: Session(0.0.0.0, 102, 10.4.4.4) Sender(10.4.4.4, 3074) PHOP(0.0.0.0)
Flags
0x10
-----
List of NEXT HOPS
-----

NextHop [1] =>
Key: Nhop - isFrr 0, outIf 0, NextHop 0.0.0.0 label - 128843 global Instance 0 is
Leaf node
-----
Primary NHLFE => outLabel - 0 and NextHop - 0.0.0.0, outIf 0 (0)
Port(NONE) NhIdx 0, ProtNhIdx 0, NumS2L 1
ProtectInstance - 0, ProtectGroup 0
POP
No Backup NHLFEs for this Ltn entry
Mid List : 3428 numS2Ls - 1 (Primary MID),

NextHop [2] =>
Key: Nhop - isFrr 0, outIf 3, NextHop 10.10.13.2 label - 128806 global Instance -
48747
-----
Primary NHLFE => outLabel - 128806 and NextHop - 10.10.13.2, outIf 3 (126)
Port(9/1/1) NhIdx 4322, ProtNhIdx 2275, NumS2L 1
ProtectInstance - 1, ProtectGroup 126
SWAP
Backup NHLFE => outLabel - 130223 and NextHop - 10.10.3.2, outIf 5 (124)
Port(9/2/3) outPushLabel 128806, NhIdx 5469, ProtNhIdx 0, NumS2L 1
Mid List : 3428 numS2Ls - 1 (Primary MID),

NextHop [3] =>
Key: Nhop - isFrr 0, outIf 4, NextHop 10.10.2.2 label - 128836 global Instance -
48974
-----
Primary NHLFE => outLabel - 128836 and NextHop - 10.10.2.2, outIf 4 (125)
Port(lag-1) NhIdx 4292, ProtNhIdx 2245, NumS2L 2
ProtectInstance - 1, ProtectGroup 125
SWAP
Backup NHLFE => outLabel - 130223 and NextHop - 10.10.3.2, outIf 5 (124)
Port(9/2/3) outPushLabel 128836, NhIdx 5659, ProtNhIdx 0, NumS2L 2
Mid List : 3428 numS2Ls - 1 (Primary MID), 3471 numS2Ls - 1 (Backup MID),

S2L [1] Key: endPoint to 10.2.2.2 subGroupId - 1 subGroupOrigId - 10.4.4.4
S2L [2] Key: endPoint to 10.3.3.3 subGroupId - 2 subGroupOrigId - 10.4.4.4
S2L [3] Key: endPoint to 10.10.2.2 subGroupId - 3 subGroupOrigId - 10.4.4.4
S2L [4] Key: endPoint to 10.10.13.2 subGroupId - 4 subGroupOrigId - 10.4.4.4

Total TelSpInfo Count : 1
```

## 23.16 telemetry

### telemetry

#### Syntax

#### telemetry



## Context

[\[Tree\]](#) (show>system telemetry)

## Full Context

show system telemetry

## Description

Commands in this context display telemetry information.

## Platforms

All

## telemetry

## Syntax

telemetry

## Context

[\[Tree\]](#) (tools>dump>system telemetry)

## Full Context

tools dump system telemetry

## Description

Commands in this context dump telemetry information.

## Platforms

All

## 23.17 template

## template

## Syntax

template

## Context

[\[Tree\]](#) (show>app-assure>http-redirect template)

## Full Context

show application-assurance http-redirect template

## Description

This command displays http-error-redirect template information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the policer information.

### Output Example

```
*A:cses-E11>show application-assurance http-error-redirect template
=====
Application-Assurance http-error-redirect templates
=====
ID      Description
-----
1       Template suited for Barefruit landing server.  Includes participant-id.
2       Template suited for Xerocole landing server.
=====
*A:cses-E11>
```

## template

## Syntax

template

## Context

[\[Tree\]](#) (show>app-assure>http-notif template)

## Full Context

show application-assurance http-notification template

## Description

This command displays http-notification template information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## template

### Syntax

**template** [*template-name*]

### Context

[\[Tree\]](#) (show>router>bier template)

### Full Context

show router bier template

### Description

This command shows the BIER template information.

### Parameters

***template-name***

Displays the template name, up to 64 characters.

### Platforms

All

### Output

The following output is an example of a BIER template. [Table 598: Bier Template Fields](#) provides BIER template field descriptions.

### Output Example

```
*A:sim-06# show router bier template "BIER-Template-1"
=====
Bier Admin State      : Up
Oper State            : Up
=====
Templates
=====
Template Name                               Admin/Op*
SD-Range
Prefix                                     Bfr* MT      #PMSI
-----
BIER-Template-1                               Up/Up
0-0
  192.0.2.6                                   6  ipv4-unicast  4
1-1
  192.0.2.6                                   6  ipv4-multicast 2
-----
Total number of templates : 1
Total number of subdomains : 2
```

Table 598: Bier Template Fields

Label	Description
Bier Admin State	The BIER administrative state
Oper State	The BIER operational state
Template Name	The BIER template name
SD-Range	The BIER SD-Range
Prefix	The prefix
Total number of templates	The total number of templates
Total number of subdomains	The total number of subdomains

## template

### Syntax

**template** [*name*]

### Context

[\[Tree\]](#) (show>router>route-next-hop-policy template)

### Full Context

show router route-next-hop-policy template

### Description

This command displays route next-hop policy templates.

### Parameters

***name***

Specifies the template name, up to 32 characters.

### Platforms

All

### Output

The following output is an example of route next-hop policy template information.

### Output Example

```
*A:Dut-C# show router route-next-hop-policy template
```

```
=====
Route next-hop templates
=====
Template                Description
-----
"myTemplate1"          "myNextHopPolicy1"
"myTemplate2"          "myNextHopPolicy2"
"myTemplate3"          "myNextHopPolicy3"
-----
Templates : 3
=====
*A:Dut-C#

*A:Dut-C# show router route-next-hop-policy template "myTemplate2"
      template "myTemplate2"
      description "myNextHopPolicy2"
      nh-type tunnel
      exit
*A:Dut-C#
```

## template

### Syntax

**template**

### Context

[\[Tree\]](#) (show>service template)

### Full Context

show service template

### Description

Commands in this context display service template information.

### Platforms

All

## template

### Syntax

**template**

### Context

[\[Tree\]](#) (show>app-assure>http-err-redirect template)

### Full Context

show application-assurance http-error-redirect template

### Description

This command displays HTTP error redirect templates.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.18 test-oam

```
test-oam
```

### Syntax

```
test-oam
```

### Context

[\[Tree\]](#) (show test-oam)

### Full Context

```
show test-oam
```

### Description

Commands in this context display test oam information.

### Platforms

All

```
test-oam
```

### Syntax

```
test-oam
```

### Context

[\[Tree\]](#) (clear test-oam)

### Full Context

```
clear test-oam
```

### Description

Commands in this context clear test oam information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## test-oam

### Syntax

test-oam

### Context

[\[Tree\]](#) (tools>dump test-oam)

### Full Context

tools dump test-oam

### Description

Commands in this context dump test oam information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## test-oam

### Syntax

test-oam

### Context

[\[Tree\]](#) (tools>perform test-oam)

### Full Context

tools perform test-oam

### Description

Commands in this context perform test OAM functions.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## test-oam

### Syntax

test-oam

## Context

[\[Tree\]](#) (monitor test-oam)

## Full Context

monitor test-oam

## Description

Commands in this context display test oam information.

## Platforms

All

## 23.19 tests

### tests

## Syntax

```
tests [session session-name] [test-id test-id] [test-type {dm | dmm | lmm | slm | twamp-light}]
```

## Context

[\[Tree\]](#) (show>oam-pm tests)

## Full Context

show oam-pm tests

## Description

This command displays a list of OAM-PM test types and associated test IDs. The output provides an ordered list by type and ID to help locate available test IDs that may be configured within a specific type. Filters are available to refine the output to the operational need. Multiple filters can be included to further refine the output. The combination of the filters is an AND function. All filters must be true to provide tests output.

## Parameters

### *session-name*

Filters output by session name, up to 32 characters.

### *test-id*

Filters output by test ID.

**Values** 0 to 2147483647

### *test-type*

Filters output by test type.



**Values** dm, dmm, lmm, slm, twamp-light

## Platforms

All

## Output

The following output is an example of OAM-PM test type and test ID information. [Table 599: OAM-PM Test Ported FID-7893.x content from IXR](#) describes test fields.

### Output Example

```

show oam-pm tests
=====
OAM Performance Monitoring Test Summary
=====
Test
Type   Test ID  Admin  Oper  TxE  Sess Type                               Session
-----
DM      5        Up     Up    no   proactive                               mpls-dm-rsvp-PE-2-PE-1
DM      6        Up     Up    no   proactive                               mpls-dm-rsvp-PE-2-PE-1-hop1
DM     100      Up     Up    no   proactive                               mpls-dm-static-PE-2-PE-1
DM     101      Up     Up    no   proactive                               mpls-dm-static-PE-2-PE-1-hop1
DM     200      Up     Up    no   proactive                               mpls-dm-rsvp-auto-PE-2-PE-1
DMM     1        Up     Up    no   proactive                               eth-port-int-PE-2-P-3
DMM     2        Up     Up    no   proactive                               eth-circuit-service-epipe1
DMM     3        Up     Up    no   proactive                               eth-circuit-service-epipe1-2
DMM     4        Up     Up    no   proactive                               eth-circuit-service-vpls3
DMM    222      Up     Up    no   proactive                               eth-circuit-service-epipe1-3
LMM     2        Up     Up    no   proactive                               eth-circuit-service-epipe1
SLM     2        Up     Up    no   proactive                               eth-circuit-service-epipe1
SLM     3        Up     Up    no   proactive                               eth-circuit-service-epipe1-2
SLM     4        Up     Up    no   proactive                               eth-circuit-service-vpls3
SLM    222      Up     Up    no   proactive                               eth-circuit-service-epipe1-3
SLM    777      Down   Down  no   proactive                               eth-test-nbn-ireland
TWL     1        Up     Up    no   proactive                               ip-rtr-int-PE-1-PE-2
TWL     2        Up     Up    yes  proactive                               ip-circuit-service-vprn2
TWL     3        Up     Up    no   proactive                               ip-lpb101-RSVP-LSP
TWL     4        Up     Up    no   proactive                               ip-lpb111-SR-TE-LSP
TWL    100      Up     Up    no   proactive                               ip-rtr-telemetry-streaming
TWL    999      Up     Up    no   proactive                               twamp-l-directed
-----
No. of OAM-PM Tests: 22
=====
TxE=yes: detected an error on the test's most recent packet transmit attempt.

show oam-pm tests session mpls-dm-rsvp-PE-2-PE-1
=====
OAM Performance Monitoring Test Summary
=====
Test
Type   Test ID  Admin  Oper  TxE  Sess Type                               Session
-----
DM      5        Up     Up    no   proactive                               mpls-dm-rsvp-PE-2-PE-1
-----
No. of OAM-PM Tests: 1
=====
TxE=yes: detected an error on the test's most recent packet transmit attempt.
    
```

```

show oam-pm tests test-id 4
=====
OAM Performance Monitoring Test Summary
=====
Test
Type   Test ID  Admin  Oper  TxE  Sess Type                               Session
-----
DMM      4      Up    Up    no  proactive   eth-circuit-service-vpls3
SLM      4      Up    Up    no  proactive   eth-circuit-service-vpls3
TWL      4      Up    Up    no  proactive   ip-lpb111-SR-TE-LSP
-----
No. of OAM-PM Tests: 3
=====
TxE=yes: detected an error on the test's most recent packet transmit attempt.

show oam-pm tests test-type twamp-light
=====
OAM Performance Monitoring Test Summary
=====
Test
Type   Test ID  Admin  Oper  TxE  Sess Type                               Session
-----
TWL      1      Up    Up    no  proactive   ip-rtr-int-PE-1-PE-2
TWL      2      Up    Up    yes proactive   ip-circuit-service-vprn2
TWL      3      Up    Up    no  proactive   ip-lpb101-RSVP-LSP
TWL      4      Up    Up    no  proactive   ip-lpb111-SR-TE-LSP
TWL     100    Up    Up    no  proactive   ip-rtr-telemetry-streaming
TWL     999    Up    Up    no  proactive   twamp-l-directed
-----
No. of OAM-PM Tests: 6
=====
TxE=yes: detected an error on the test's most recent packet transmit attempt.
    
```

Table 599: OAM-PM Test

Label	Description
Test Type	The OAM-PM protocol specific test
Test ID	The numerical value, between 0 to 2147583647, that is assigned to the protocol specific test.  The <b>(auto)</b> tag appears if the test ID was automatically assigned.
Admin	The administrative state of the test  Up – The test has been enabled by configuration  Down – The test was not enabled by configuration
Oper	The operational state of the test  Up – The test is administrative Up and currently transmitting, attempting to transmit packets, or ready to transmit packets  Down – The test is administratively down or an oam-pm session has been configured with <b>session-type on-</b>

Label	Description
	<b>demand</b> and has not been enabled using the global CLI <b>oam oam-pm session start</b> command
TxE	no – There has been no error detected yes – The has been an error detected
Sess Type	The session type, <b>proactive</b> and <b>on-demand</b>
Session	The name of the session, up to 32 characters

## 23.20 tethering

### tethering

#### Syntax

**tethering detail**

#### Context

[Tree] (tools>dump>app-assure>group tethering)

#### Full Context

tools dump application-assurance group tethering

#### Description

This command displays AA current subscribers' tethering statistics.

#### Parameters

**detail**

Specifies detailed tethering statistics.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of tethering information.

#### Output Example

```
tools dump application-assurance group 1:1 tethering detail
=====
Application-Assurance tethering detail - Group 1:1
=====
          TTL           Expected       Flow Count
```

```
-----  
62          no          215  
63          yes         1501255  
126         no          7612  
127         yes         1078002  
=====
```

## tethering

### Syntax

**tethering clear-counters**

### Context

[\[Tree\]](#) (tools>perform>app-assure>group tethering)

### Full Context

tools perform application-assurance group tethering

### Description

This command clears the counters from the tethering statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.21 threshold-crossing-alert

## threshold-crossing-alert

### Syntax

**threshold-crossing-alert [detail]**

### Context

[\[Tree\]](#) (show>app-assure threshold-crossing-alert)

### Full Context

show application-assurance threshold-crossing-alert

### Description

This command displays information about threshold crossing alerts.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of application assurance threshold crossing alert information.

### Output Example

```

show application-assurance threshold-crossing-alert
=====
Grp:Part  Type          Name          Entry         Dir
-----
1         error-drop      N/A           N/A           to-sub
1         error-drop      N/A           N/A           from-sub
1         frag-drop-ooo   N/A           N/A           to-sub
1         overload-drop   N/A           N/A           from-sub
1         overload-drop   N/A           N/A           to-sub
1         gtp-filter      gtpFilter     def-action    from-sub
1         gtp-filter      gtpfilter     max-payload   from-sub
1         gtp-filter      gtpfilter     def-action    from-sub
1         gtp-filter      red           2             to-sub
1         gtp-filter      red           def-action    from-sub
1         sctp-filter     blue          ppid-range    to-sub
1         sctp-filter     red           1             from-sub
1         sctp-filter     red           2             to-sub
1         sctp-filter     red           ppid-range    from-sub
1         sctp-filter     red           def-action    to-sub
1         sctp-filter     red           def-action    from-sub
1         session-filter  blue          def-action    from-sub
1         session-filter  red           1             from-sub
1         session-filter  red           2             to-sub
1         session-filter  red           def-action    from-sub
1         tcp-validate    green         N/A           to-sub
2:50     error-drop      N/A           N/A           to-sub
2:32656  error-drop      N/A           N/A           from-sub
2:32656  policer         12345679801234567890123456789012 N/A           from-sub
2:32656  policer         red           N/A           from-sub
-----
No. of TCAs: 24
=====

show application-assurance threshold-crossing-alert detail
=====
Application Assurance Threshold Crossing Alerts
=====
-----
tcp-validate "green" to-sub
-----
Group:Part      : 1                Trigger on       : denied-traffic
High watermark  : 30              Low watermark    : 20
Last raised     : N/A            Last cleared     : N/A
State           : cleared
  
```

## 23.22 thresholds

### thresholds

#### Syntax

**thresholds**

#### Context

[\[Tree\]](#) (show>system thresholds)

#### Full Context

show system thresholds

#### Description

This command displays system monitoring thresholds. The Threshold Events Log table will keep only the last 201 entries.

#### Platforms

All

#### Output

The following output is an example of system threshold information, and [Table 600: System Thresholds Field Descriptions](#) describes the output fields.

#### Output Example

```
A:bkvm3# show system thresholds
=====
Threshold Alarms
=====
Variable: tmnxCpmFlashUsed.1.10.1
Alarm Id      : 1          Last Value : 3192120
Rising Event Id : 1          Threshold  : 10
Falling Event Id : 0          Threshold  : 0
Sample Interval : 1          SampleType : absolute
Startup Alarm  : either    Owner       : TiMOS CLI

Variable: tmnxCpmFlashUsed.1.10.2
Alarm Id      : 2          Last Value : 0
Rising Event Id : 2          Threshold  : 20
Falling Event Id : 3          Threshold  : 30
Sample Interval : 2          SampleType : absolute
Startup Alarm  : either    Owner       : TiMOS CLI

Variable: tmnxCpmFlashPercentageUsed.1.10.1
Alarm Id      : 3          Last Value : 19
Rising Event Id : 4          Threshold  : 30
Falling Event Id : 0          Threshold  : 0
Sample Interval : 3          SampleType : absolute
Startup Alarm  : either    Owner       : TiMOS CLI
```

```
Variable: tmnxCpmFlashPercentageUsed.1.10.2
Alarm Id      : 4          Last Value : 0
Rising Event Id : 5          Threshold : 40
Falling Event Id : 6          Threshold : 50
Sample Interval : 4          SampleType : absolute
Startup Alarm   : either     Owner       : TiMOS CLI

=====
=====
Threshold Events
=====
Description: TiMOS CLI - cflash capacity alarm rising event
              using percentages
Event Id      : 1          Last Sent  : 07/23/2015 18:15:46
Action Type   : both      Owner       : TiMOS CLI

Description: TiMOS CLI - cflash capacity warning rising event
Event Id      : 2          Last Sent  : never
Action Type   : both      Owner       : TiMOS CLI

Description: TiMOS CLI - cflash capacity warning falling event
Event Id      : 3          Last Sent  : 07/23/2015 18:15:46
Action Type   : both      Owner       : TiMOS CLI

Description: TiMOS CLI - cflash capacity warning rising event
              using percentages
Event Id      : 4          Last Sent  : never
Action Type   : both      Owner       : TiMOS CLI

Description: TiMOS CLI - cflash capacity alarm rising event
              using percentages
Event Id      : 5          Last Sent  : never
Action Type   : both      Owner       : TiMOS CLI

Description: TiMOS CLI - cflash capacity alarm falling event
              using percentages
Event Id      : 6          Last Sent  : 07/23/2015 18:15:46
Action Type   : both      Owner       : TiMOS CLI

=====
=====
Threshold Events Log
=====
Description   : TiMOS CLI - cflash capacity alarm rising
                event using percentages : value=3192120,
                >=10 : alarm-index 1, event-index 1 alarm-
                variable OID tmnxCpmFlashUsed.1.10.1
Event Id      : 1          Time Sent   : 07/23/2015 18:15:46

Description   : TiMOS CLI - cflash capacity warning falling
                event : value=0, <=30 : alarm-index 2, event-
                index 3 alarm-variable OID tmnxCpmFlashUsed.
                1.10.2
Event Id      : 3          Time Sent   : 07/23/2015 18:15:46

Description   : TiMOS CLI - cflash capacity alarm falling
                event using percentages : value=0, <=50 :
                alarm-index 4, event-index 6 alarm-variable
                OID tmnxCpmFlashPercentageUsed.1.10.2
Event Id      : 6          Time Sent   : 07/23/2015 18:15:46

=====
```

Table 600: System Thresholds Field Descriptions

Label	Description
Variable	Displays the variable OID.
Alarm Id	Displays the numerical identifier for the alarm.
Last Value	Displays the last threshold value.
Rising Event Id	Displays the identifier of the RMON rising event.
Threshold	Displays the identifier of the RMON rising threshold.
Falling Event Id	Displays the identifier of the RMON falling event.
Threshold	Displays the identifier of the RMON falling threshold.
Sample Interval	Displays the polling interval, in seconds, over which the data is sampled and compared with the rising and falling thresholds.
SampleType	Displays the method of sampling the selected variable and calculating the value to be compared against the thresholds.
Startup Alarm	Displays the alarm that may be sent when this alarm is first created.
Owner	Displays the owner of this alarm.
Description	Displays the event cause.
Event Id	Displays the identifier of the threshold event.
Last Sent	Displays the date and time the alarm was sent.
Action Type	<p>log — An entry is made in the RMON-MIB log table for each event occurrence.</p> <p>trap — An SR OS logger event is generated. The SR OS logger utility then distributes the notification of this event to its configured log destinations, which may be CONSOLE, telnet session, memory log, cflash file, syslog, or SNMP trap destinations logs.</p> <p>both — Both an entry in the RMON-MIB logTable and an SR OS logger event are generated.</p> <p>none — No action is taken.</p>
Owner	Displays the owner of the event.



## 23.23 throughput

### throughput

#### Syntax

**throughput tunnel-type *tunnel-type* system [ history-stats-in-count *count*] [history-stats-in-min minutes] [current]**

**throughput tunnel-type *tunnel-type* type *type* system [history-stats-in-count *count*] [history-stats-in-min minutes] [current] [show-oid]**

**throughput tunnel-type *tunnel-type* isa *mda* [history-stats-in-count *count*] [ history-stats-in-min minutes] [current]**

**throughput tunnel-type *tunnel-type* type *type* isa *mda* [history-stats-in-count *count*] [history-stats-in-min minutes] [current] [show-oid]**

**throughput tunnel-type *tunnel-type* type *type* isa *mda* [history-stats-in-count *count*] [history-stats-in-min minutes] [current] [show-oid] esa-vm *esa-id/vm-id***

**throughput tunnel-type *tunnel-type* tunnel-group *tunnel-group-id* [history-stats-in-count *count*] [history-stats-in-min minutes] [current]**

**throughput tunnel-type *tunnel-type* [history-stats-in-count *count*] [history-stats-in-min minutes] [current] esa-vm *esa-id/vm-id***

**throughput tunnel-type *tunnel-type* type *type* tunnel-group *tunnel-group-id* [ history-stats-in-count *count*] [history-stats-in-min minutes] [current] [ show-oid]**

#### Context

[\[Tree\]](#) (show>isa>stats>ip-tunnel-stats throughput)

#### Full Context

show isa statistics ip-tunnel-stats throughput

#### Description

This command displays throughput statistics for the specified tunnel types and scope.

The following scopes are supported:

- per ISA
- per tunnel group
- per system

The statistics include the following information:

- total packet per second (encapsulated and decapsulated)
- encapsulated packets per second
- decapsulated packets per second
- total bits per second (encapsulated and decapsulated) in Mibits/s

- encapsulated bits per second in Mibits/s
- decapsulated bits per second in Mibits/s

Syntax notes:

- 1 Mibits/s, equals  $2^{20}$  bits per second
- The bits per second counter is an integer which is a rounded down value from the measured value.

The system collects stats every 10 minutes for last the 24 hour per the wall clock. A current value is also included in the output. The value is an average derived value of 10 minutes. The start time indicates the starting timestamp of measurement. The sampling duration indicates the duration of measurement.

## Parameters

### *tunnel-type*

Displays the type of tunnel.

**Values** gre, ip-in-ip, l2tpv3

### *mda*

Displays the ISA ID.

**Values** slot/mda

### *tunnel-group-id*

Displays the ID of the tunnel group.

**Values** 1 to 16

### *type*

Displays the type of breakdown counter.

**Values** bidir-pps, bidir-bps, encap-pps, encap-bps, decap-pps, decap-bps

### *count*

Displays the number historical values to be included in the output.

**Values** 1 to 24

### *minutes*

Displays the number of minutes of historical values to be included in output.

**Values** 1 to 1440

### *current*

Displays only the current values.

### *esa-vm*

Displays the ID of the configured ESA and ESA VM.

**Values**

esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16

*vm-id* 1 to 4

**show-oid**

Specifies to include the SNMP object identifier (OID) and the instance ID for the latest historical value in the output.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of the **show isa statistics throughput ip-tunnel-stats** command.

**Output Example**

```
show>isa>stats>ip-tunnel-stats# throughput tunnel-type gre tunnel-group 1
=====
STATISTICS FOR ISA TUNNEL GROUP 1
=====
INDEX          VALUE          START TIME          SAMPLING DURATION
-----
ENCAPSULATED GRE TUNNEL THROUGHPUT (PKTS/SEC)
1 (CURRENT)   62             2017/05/22 21:50:00 MIN 6 SEC 24
2             62             2017/05/22 21:40:00 MIN 10
3             62             2017/05/22 21:30:00 MIN 10
4             62             2017/05/22 21:20:00 MIN 10
5             62             2017/05/22 21:10:00 MIN 10
6             87             2017/05/22 21:00:00 MIN 10
7             18            2017/05/22 20:50:00 MIN 10
8             0             2017/05/22 20:40:00 MIN 10
9             0             2017/05/22 20:30:00 MIN 10
10            0             2017/05/22 20:20:00 MIN 10
11            0             2017/05/22 20:10:00 MIN 10
12            0             2017/05/22 20:00:00 MIN 10
13            0             2017/05/22 19:50:00 MIN 10
14            0             2017/05/22 19:40:00 MIN 10
15            0             2017/05/22 19:30:00 MIN 10
16            0             2017/05/22 19:20:00 MIN 10
17            0             2017/05/22 19:10:00 MIN 10
18            0             2017/05/22 19:00:00 MIN 10
19            0             2017/05/22 18:50:00 MIN 10
20            0             2017/05/22 18:40:00 MIN 10
21            0             2017/05/22 18:30:00 MIN 10
22            0             2017/05/22 18:20:00 MIN 10
23            0             2017/05/22 18:10:00 MIN 10
24            0             2017/05/22 18:00:00 MIN 10
25            0             2017/05/22 17:50:00 MIN 10
26            0             2017/05/22 17:45:12 MIN 4 SEC 49
DECAPSULATED GRE TUNNEL THROUGHPUT (PKTS/SEC)
1 (CURRENT)   249            2017/05/22 21:50:00 MIN 6 SEC 24
2             249            2017/05/22 21:40:00 MIN 10
3             249            2017/05/22 21:30:00 MIN 10
4             249            2017/05/22 21:20:00 MIN 10
5             249            2017/05/22 21:10:00 MIN 10
6             145            2017/05/22 21:00:00 MIN 10
7             18            2017/05/22 20:50:00 MIN 10
8             0             2017/05/22 20:40:00 MIN 10
9             0             2017/05/22 20:30:00 MIN 10
10            0             2017/05/22 20:20:00 MIN 10
11            0             2017/05/22 20:10:00 MIN 10
```

```

12      0      2017/05/22 20:00:00 MIN 10
13      0      2017/05/22 19:50:00 MIN 10
14      0      2017/05/22 19:40:00 MIN 10
15      0      2017/05/22 19:30:00 MIN 10
16      0      2017/05/22 19:20:00 MIN 10
17      0      2017/05/22 19:10:00 MIN 10
18      0      2017/05/22 19:00:00 MIN 10
19      0      2017/05/22 18:50:00 MIN 10
20      0      2017/05/22 18:40:00 MIN 10
21      0      2017/05/22 18:30:00 MIN 10
22      0      2017/05/22 18:20:00 MIN 10
23      0      2017/05/22 18:10:00 MIN 10
24      0      2017/05/22 18:00:00 MIN 10
25      0      2017/05/22 17:50:00 MIN 10
26      0      2017/05/22 17:45:12 MIN 4 SEC 49
ENCAPSULATED AND DECAPSULATED GRE TUNNEL THROUGHPUT (PKTS/SEC)
1 (CURRENT) 312      2017/05/22 21:50:00 MIN 6 SEC 24
2          311      2017/05/22 21:40:00 MIN 10
3          311      2017/05/22 21:30:00 MIN 10
4          311      2017/05/22 21:20:00 MIN 10
5          311      2017/05/22 21:10:00 MIN 10
6          233      2017/05/22 21:00:00 MIN 10
7          37       2017/05/22 20:50:00 MIN 10
8          0       2017/05/22 20:40:00 MIN 10
9          0       2017/05/22 20:30:00 MIN 10
10         0       2017/05/22 20:20:00 MIN 10
11         0       2017/05/22 20:10:00 MIN 10
12         0       2017/05/22 20:00:00 MIN 10
13         0       2017/05/22 19:50:00 MIN 10
14         0       2017/05/22 19:40:00 MIN 10
15         0       2017/05/22 19:30:00 MIN 10
16         0       2017/05/22 19:20:00 MIN 10
17         0       2017/05/22 19:10:00 MIN 10
18         0       2017/05/22 19:00:00 MIN 10
19         0       2017/05/22 18:50:00 MIN 10
4         2       2017/05/22 21:20:00 MIN 10
5         2       2017/05/22 21:10:00 MIN 10
6         0       2017/05/22 21:00:00 MIN 10
7         0       2017/05/22 20:50:00 MIN 10
8         0       2017/05/22 20:40:00 MIN 10
9         0       2017/05/22 20:30:00 MIN 10
10        0       2017/05/22 20:20:00 MIN 10
11        0       2017/05/22 20:10:00 MIN 10
12        0       2017/05/22 20:00:00 MIN 10
13        0       2017/05/22 19:50:00 MIN 10
14        0       2017/05/22 19:40:00 MIN 10
15        0       2017/05/22 19:30:00 MIN 10
16        0       2017/05/22 19:20:00 MIN 10
17        0       2017/05/22 19:10:00 MIN 10
18        0       2017/05/22 19:00:00 MIN 10
19        0       2017/05/22 18:50:00 MIN 10
20        0       2017/05/22 18:40:00 MIN 10
21        0       2017/05/22 18:30:00 MIN 10
22        0       2017/05/22 18:20:00 MIN 10
23        0       2017/05/22 18:10:00 MIN 10
24        0       2017/05/22 18:00:00 MIN 10
25        0       2017/05/22 17:50:00 MIN 10
26        0       2017/05/22 17:45:12 MIN 4 SEC 49
DECAPSULATED GRE TUNNEL THROUGHPUT (MIBIT/SEC)
1 (CURRENT) 2       2017/05/22 21:50:00 MIN 6 SEC 24
2          2       2017/05/22 21:40:00 MIN 10
3          2       2017/05/22 21:30:00 MIN 10
4          2       2017/05/22 21:20:00 MIN 10
5          2       2017/05/22 21:10:00 MIN 10
    
```

```

6          0          2017/05/22 21:00:00 MIN 10
7          0          2017/05/22 20:50:00 MIN 10
8          0          2017/05/22 20:40:00 MIN 10
9          0          2017/05/22 20:30:00 MIN 10
10         0          2017/05/22 20:20:00 MIN 10
11         0          2017/05/22 20:10:00 MIN 10
12         0          2017/05/22 20:00:00 MIN 10
13         0          2017/05/22 19:50:00 MIN 10
14         0          2017/05/22 19:40:00 MIN 10
15         0          2017/05/22 19:30:00 MIN 10
16         0          2017/05/22 19:20:00 MIN 10
17         0          2017/05/22 19:10:00 MIN 10
18         0          2017/05/22 19:00:00 MIN 10
19         0          2017/05/22 18:50:00 MIN 10
20         0          2017/05/22 18:40:00 MIN 10
21         0          2017/05/22 18:30:00 MIN 10
22         0          2017/05/22 18:20:00 MIN 10
23         0          2017/05/22 18:10:00 MIN 10
24         0          2017/05/22 18:00:00 MIN 10
25         0          2017/05/22 17:50:00 MIN 10
26         0          2017/05/22 17:45:12 MIN 4 SEC 49
ENCAPSULATED AND DECAPSULATED GRE TUNNEL THROUGHPUT (MIBIT/SEC)
1 (CURRENT) 4          2017/05/22 21:50:00 MIN 6 SEC 24
2          4          2017/05/22 21:40:00 MIN 10
3          4          2017/05/22 21:30:00 MIN 10
4          4          2017/05/22 21:20:00 MIN 10
5          4          2017/05/22 21:10:00 MIN 10

6          1          2017/05/22 21:00:00 MIN 10
7          0          2017/05/22 20:50:00 MIN 10
8          0          2017/05/22 20:40:00 MIN 10
9          0          2017/05/22 20:30:00 MIN 10
10         0          2017/05/22 20:20:00 MIN 10
11         0          2017/05/22 20:10:00 MIN 10
12         0          2017/05/22 20:00:00 MIN 10
13         0          2017/05/22 19:50:00 MIN 10
14         0          2017/05/22 19:40:00 MIN 10
15         0          2017/05/22 19:30:00 MIN 10
16         0          2017/05/22 19:20:00 MIN 10
17         0          2017/05/22 19:10:00 MIN 10
18         0          2017/05/22 19:00:00 MIN 10
19         0          2017/05/22 18:50:00 MIN 10
20         0          2017/05/22 18:40:00 MIN 10
21         0          2017/05/22 18:30:00 MIN 10
22         0          2017/05/22 18:20:00 MIN 10
23         0          2017/05/22 18:10:00 MIN 10
24         0          2017/05/22 18:00:00 MIN 10
25         0          2017/05/22 17:50:00 MIN 10
26         0          2017/05/22 17:45:12 MIN 4 SEC 49
-----
NO. OF ENTRIES: 156
=====
    
```

## throughput

### Syntax

**throughput gateway *name* [history-stats-in-count *count*] [history-stats-in-min *min*] [current]**

**throughput [history-stats-in-count *count*] [history-stats-in-min *min*] [current] esa-vm *esa-id/vm-id***

```
throughput type type gateway name [history-stats-in-count count] [ history-stats-in-min min]
[current] [show-oid]
throughput type type [history-stats-in-count count] [history-stats-in-min min] [current] [ show-oid]
esa-vm esa-id/vm-id
throughput isa mda [history-stats-in-count count] [history-stats-in-min min] [current]
throughput type type isa mda [history-stats-in-count count] [ history-stats-in-min min] [current]
[show-oid]
throughput system [history-stats-in-count count] [history-stats-in-min min] [ current]
throughput type type system [history-stats-in-count count] [history-stats-in-min min] [current] [
show-oid]
throughput tunnel-group tunnel-group-id [ history-stats-in-count count] [history-stats-in-min min]
[current]
throughput type type tunnel-group tunnel-group-id [history-stats-in-count count] [ history-stats-in-
min min] [current] [show-oid]
```

## Context

[\[Tree\]](#) (show>isa>stats>ipsec-stats throughput)

## Full Context

```
show isa statistics ipsec-stats throughput
```

## Description

This command displays IPsec throughput statistics for the specified scope.

The system collects statistics every 10 minutes for the last 24 hours per wall clock. A current value is included in the output.

This command supports following the scopes:

- per system
- per ISA
- per tunnel group
- per IPsec GW

The statistics include:

- The number of bidirectional encrypted and decrypted per second
- The number of encrypted packets per second
- The number of decrypted packets per second
- The number of bidirectional (encrypted and decrypted) bits per second (in Mibits/s)
- The number of bidirectional encrypted bits per second (in Mibits/s)
- The number of bidirectional decrypted bits per second (in Mibits/s)

Syntax notes:

- 1 Mibits/s equals 2<sup>20</sup> bits per second
- The bits per second counter is an integer, which is a value rounded down from the measured value.

## Parameters

### *mda*

Displays information about the specified ISA.

**Values** slot/mda

### *tunnel-group-id*

Displays information about the specified tunnel group ID.

**Values** 1 to 16

### *name*

Displays information about the name of the IPsec GW up to 32 characters in length.

### *count*

Displays information about the number of historical values to be included in the output.

**Values** 1 to 24

### *min*

Displays information about the number of minutes of historical values to be included in output.

**Values** 1 to 1440

### *current*

Displays information about the current value.

### *show-oid*

Displays information about include SNMP OID and instance ID for the latest historical value in the output, for a specified type of counter.

### *esa-vm*

Displays the ID of the configured ESA and ESA VM.

<b>Values</b>	esa-vm:	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show isa statistics ipsec-stats throughput** command.

### Output Example

```
show>isa>stats>ipsec-stats# throughput tunnel-group 1
=====
STATISTICS FOR ISA TUNNEL GROUP 1
```

```

=====
INDEX          VALUE          START TIME          SAMPLING DURATION
-----
ENCRYPTED IPSEC TRAFFIC THROUGHPUT (PKTS/SEC)
1 (CURRENT)  99             2017/05/23 22:00:00 MIN 7 SEC 51
2             72             2017/05/23 21:50:00 MIN 10
3             0              2017/05/23 21:40:00 MIN 10
4             0              2017/05/23 21:30:00 MIN 10
5             0              2017/05/23 21:20:00 MIN 10
6             0              2017/05/23 21:10:00 MIN 10
7             0              2017/05/23 21:00:00 MIN 10
8             0              2017/05/23 20:50:00 MIN 10
9             0              2017/05/23 20:40:00 MIN 10
10            0              2017/05/23 20:30:00 MIN 10
11            0              2017/05/23 20:20:00 MIN 10
12            0              2017/05/23 20:10:00 MIN 10
13            0              2017/05/23 20:00:00 MIN 10
14            0              2017/05/23 19:50:00 MIN 10
15            0              2017/05/23 19:40:00 MIN 10
16            0              2017/05/23 19:30:00 MIN 10
17            0              2017/05/23 19:20:00 MIN 10
18            0              2017/05/23 19:10:00 MIN 10
19            0              2017/05/23 19:00:00 MIN 10
20            0              2017/05/23 18:50:00 MIN 10
21            0              2017/05/23 18:40:00 MIN 10
22            0              2017/05/23 18:30:00 MIN 10
23            0              2017/05/23 18:20:00 MIN 10
24            0              2017/05/23 18:10:00 MIN 10
25            0              2017/05/23 18:00:00 MIN 10
26            0              2017/05/23 17:50:48 MIN 9 SEC 12
DECRYPTED IPSEC TRAFFIC THROUGHPUT (PKTS/SEC)
1 (CURRENT)  99             2017/05/23 22:00:00 MIN 7 SEC 51
2             72             2017/05/23 21:50:00 MIN 10
3             0              2017/05/23 21:40:00 MIN 10
4             0              2017/05/23 21:30:00 MIN 10
5             0              2017/05/23 21:20:00 MIN 10
6             0              2017/05/23 21:10:00 MIN 10
7             0              2017/05/23 21:00:00 MIN 10
8             0              2017/05/23 20:50:00 MIN 10
9             0              2017/05/23 20:40:00 MIN 10
10            0              2017/05/23 20:30:00 MIN 10
11            0              2017/05/23 20:20:00 MIN 10
12            0              2017/05/23 20:10:00 MIN 10
13            0              2017/05/23 20:00:00 MIN 10
14            0              2017/05/23 19:50:00 MIN 10
15            0              2017/05/23 19:40:00 MIN 10
16            0              2017/05/23 19:30:00 MIN 10
17            0              2017/05/23 19:20:00 MIN 10
18            0              2017/05/23 19:10:00 MIN 10
19            0              2017/05/23 19:00:00 MIN 10
20            0              2017/05/23 18:50:00 MIN 10
21            0              2017/05/23 18:40:00 MIN 10
22            0              2017/05/23 18:30:00 MIN 10
23            0              2017/05/23 18:20:00 MIN 10
24            0              2017/05/23 18:10:00 MIN 10
25            0              2017/05/23 18:00:00 MIN 10
26            0              2017/05/23 17:50:48 MIN 9 SEC 12
ENCRYPTED AND DECRYPTED IPSEC TRAFFIC THROUGHPUT (PKTS/SEC)
1 (CURRENT)  199            2017/05/23 22:00:00 MIN 7 SEC 51
2             145           2017/05/23 21:50:00 MIN 10
3             0              2017/05/23 21:40:00 MIN 10
4             0              2017/05/23 21:30:00 MIN 10
5             0              2017/05/23 21:20:00 MIN 10
6             0              2017/05/23 21:10:00 MIN 10
    
```



```

7      0      2017/05/23 21:00:00 MIN 10
8      0      2017/05/23 20:50:00 MIN 10
9      0      2017/05/23 20:40:00 MIN 10
10     0      2017/05/23 20:30:00 MIN 10
11     0      2017/05/23 20:20:00 MIN 10
12     0      2017/05/23 20:10:00 MIN 10
4      0      2017/05/23 21:30:00 MIN 10
5      0      2017/05/23 21:20:00 MIN 10
6      0      2017/05/23 21:10:00 MIN 10
7      0      2017/05/23 21:00:00 MIN 10
8      0      2017/05/23 20:50:00 MIN 10
9      0      2017/05/23 20:40:00 MIN 10
10     0      2017/05/23 20:30:00 MIN 10
11     0      2017/05/23 20:20:00 MIN 10
12     0      2017/05/23 20:10:00 MIN 10
13     0      2017/05/23 20:00:00 MIN 10
14     0      2017/05/23 19:50:00 MIN 10
15     0      2017/05/23 19:40:00 MIN 10
16     0      2017/05/23 19:30:00 MIN 10
17     0      2017/05/23 19:20:00 MIN 10
18     0      2017/05/23 19:10:00 MIN 10
19     0      2017/05/23 19:00:00 MIN 10
20     0      2017/05/23 18:50:00 MIN 10
21     0      2017/05/23 18:40:00 MIN 10
22     0      2017/05/23 18:30:00 MIN 10
23     0      2017/05/23 18:20:00 MIN 10
24     0      2017/05/23 18:10:00 MIN 10
25     0      2017/05/23 18:00:00 MIN 10
26     0      2017/05/23 17:50:48 MIN 9 SEC 12
DECRYPTED IPSEC TRAFFIC THROUGHPUT (MIBIT/SEC)
1 (CURRENT) 3      2017/05/23 22:00:00 MIN 7 SEC 51
2      2      2017/05/23 21:50:00 MIN 10
3      0      2017/05/23 21:40:00 MIN 10
4      0      2017/05/23 21:30:00 MIN 10
5      0      2017/05/23 21:20:00 MIN 10
6      0      2017/05/23 21:10:00 MIN 10
7      0      2017/05/23 21:00:00 MIN 10
8      0      2017/05/23 20:50:00 MIN 10
9      0      2017/05/23 20:40:00 MIN 10
10     0      2017/05/23 20:30:00 MIN 10
11     0      2017/05/23 20:20:00 MIN 10
12     0      2017/05/23 20:10:00 MIN 10
13     0      2017/05/23 20:00:00 MIN 10
14     0      2017/05/23 19:50:00 MIN 10
15     0      2017/05/23 19:40:00 MIN 10
16     0      2017/05/23 19:30:00 MIN 10
17     0      2017/05/23 19:20:00 MIN 10
18     0      2017/05/23 19:10:00 MIN 10
19     0      2017/05/23 19:00:00 MIN 10
20     0      2017/05/23 18:50:00 MIN 10
21     0      2017/05/23 18:40:00 MIN 10
22     0      2017/05/23 18:30:00 MIN 10
23     0      2017/05/23 18:20:00 MIN 10
24     0      2017/05/23 18:10:00 MIN 10
25     0      2017/05/23 18:00:00 MIN 10
26     0      2017/05/23 17:50:48 MIN 9 SEC 12
ENCRYPTED AND DECRYPTED IPSEC TRAFFIC THROUGHPUT (MIBIT/SEC)
1 (CURRENT) 7      2017/05/23 22:00:00 MIN 7 SEC 51
2      5      2017/05/23 21:50:00 MIN 10
3      0      2017/05/23 21:40:00 MIN 10
4      0      2017/05/23 21:30:00 MIN 10
5      0      2017/05/23 21:20:00 MIN 10
6      0      2017/05/23 21:10:00 MIN 10
7      0      2017/05/23 21:00:00 MIN 10
    
```

```

8      0      2017/05/23 20:50:00 MIN 10
9      0      2017/05/23 20:40:00 MIN 10
10     0      2017/05/23 20:30:00 MIN 10
11     0      2017/05/23 20:20:00 MIN 10
12     0      2017/05/23 20:10:00 MIN 10
13     0      2017/05/23 20:00:00 MIN 10
14     0      2017/05/23 19:50:00 MIN 10
15     0      2017/05/23 19:40:00 MIN 10
16     0      2017/05/23 19:30:00 MIN 10
17     0      2017/05/23 19:20:00 MIN 10
18     0      2017/05/23 19:10:00 MIN 10
19     0      2017/05/23 19:00:00 MIN 10
20     0      2017/05/23 18:50:00 MIN 10
21     0      2017/05/23 18:40:00 MIN 10
22     0      2017/05/23 18:30:00 MIN 10
23     0      2017/05/23 18:20:00 MIN 10
24     0      2017/05/23 18:10:00 MIN 10
25     0      2017/05/23 18:00:00 MIN 10
26     0      2017/05/23 17:50:48 MIN 9 SEC 12
    
```

-----  
 NO. OF ENTRIES: 156  
 =====

show>isa>stats>ipsec-stats# throughput type bidir-bps isa 1/2 show-oid

-----  
 CURRENT STATISTIC INFO  
 -----

OID: TMNXIPSECISAHISTSTATSVALUE10.1.1.2.105.2  
 -----

=====

STATISTICS FOR ISA 1/2  
 =====

INDEX	VALUE	START TIME	SAMPLING DURATION
-----			
ENCRYPTED AND DECRYPTED IPSEC TRAFFIC THROUGHPUT (MIBIT/SEC)			
1 (CURRENT)	7	2017/05/23 22:10:00	MIN 1 SEC 9
2	7	2017/05/23 22:00:00	MIN 10
3	5	2017/05/23 21:50:00	MIN 10
4	0	2017/05/23 21:40:00	MIN 10
5	0	2017/05/23 21:30:00	MIN 10
6	0	2017/05/23 21:20:00	MIN 10
7	0	2017/05/23 21:10:00	MIN 10
8	0	2017/05/23 21:00:00	MIN 10
9	0	2017/05/23 20:50:00	MIN 10
10	0	2017/05/23 20:40:00	MIN 10
11	0	2017/05/23 20:30:00	MIN 10
12	0	2017/05/23 20:20:00	MIN 10
13	0	2017/05/23 20:10:00	MIN 10
14	0	2017/05/23 20:00:00	MIN 10
15	0	2017/05/23 19:50:00	MIN 10
16	0	2017/05/23 19:40:00	MIN 10
17	0	2017/05/23 19:30:00	MIN 10
18	0	2017/05/23 19:20:00	MIN 10
19	0	2017/05/23 19:10:00	MIN 10
20	0	2017/05/23 19:00:00	MIN 10
21	0	2017/05/23 18:50:00	MIN 10
22	0	2017/05/23 18:40:00	MIN 10
23	0	2017/05/23 18:30:00	MIN 10
24	0	2017/05/23 18:20:00	MIN 10
25	0	2017/05/23 18:10:00	MIN 10
26	0	2017/05/23 18:00:00	MIN 10
27	0	2017/05/23 17:50:48	MIN 9 SEC 12

-----  
 NO. OF ENTRIES: 27  
 =====

## 23.24 time

### time

#### Syntax

time

#### Context

[\[Tree\]](#) (show>system time)

#### Full Context

show system time

#### Description

This command displays the system time and zone configuration parameters.

#### Platforms

All

#### Output

The following output is an example of system time information, and [Table 601: System Time Field Descriptions](#) describes the output fields.

#### Output Example

```
A:ALA-1# show system time
=====
Date & Time
=====
Current Date & Time : 2006/05/05 23:03:13    DST Active      : yes
Current Zone       : PDT                    Offset from UTC : -7:00
-----
Non-DST Zone      : PST                    Offset from UTC : -8:00
Zone type         : standard
-----
DST Zone          : PDT                    Offset from Non-DST : 01:00
Starts            : first sunday in april 02:00
Ends              : last sunday in october 02:00
=====
A:ALA-1#

A:ALA-1# show system time (with no DST zone configured)
=====
Date & Time
=====
Current Date & Time : 2006/05/12 11:12:05    DST Active      : no
Current Zone       : APA                    Offset from UTC : -8:00
-----
Non-DST Zone      : APA                    Offset from UTC : -8:00
Zone Type         : non-standard
```

```
-----
No DST zone configured
=====
A:ALA-1#
```

Table 601: System Time Field Descriptions

Label	Description
Date & Time	The system date and time using the current time zone.
DST Active	Yes — Daylight Savings Time is currently in effect. No — Daylight Savings Time is not currently in effect.
Zone	The zone names for the current zone, the non-DST zone, and the DST zone if configured.
Current Time Zone	Indicates the process currently controlling the system time. SNTP, NTP, PTP or NONE.
Zone type	Non-standard — The zone is user-defined. Standard — The zone is system defined.
Offset from UTC	The number of hours and minutes added to universal time for the zone, including the DST offset for a DST zone.
Offset from Non-DST	The number of hours (always 0 to 1) and minutes (0 to 59) added to the time at the beginning of Daylight Saving Time and subtracted at the end Daylight Saving Time.
Starts	The date and time Daylight Saving Time begins.
Ends	The date and time Daylight Saving Time ends.

## time

### Syntax

time

### Context

[\[Tree\]](#) (show time)

### Full Context

show time

### Description

This command displays the current day, date, time and time zone.

The time is displayed either in the local time zone or in UTC depending on the setting of the root level **time-display** command for the console session.

### Platforms

All

### Output

The following output is an example of time information.

#### Output Example

```
A:ALA-49# show time
Tue Oct 31 12:17:15 GMT 2006
```

## 23.25 timers

### timers

#### Syntax

```
timers [session ip-addr[label-space]]
```

#### Context

[\[Tree\]](#) (tools>dump>router>ldp timers)

#### Full Context

```
tools dump router ldp timers
```

#### Description

This command dumps information for LDP timers.

#### Platforms

All

## 23.26 tls

### tls

#### Syntax

```
tls
```

## Context

[\[Tree\]](#) (show>system>security tls)

## Full Context

show system security tls

## Description

Commands in this context display TLS-related information.

## Platforms

All

## 23.27 top-active-meps

### top-active-meps

## Syntax

**top-active-meps** [{**rx-sort** | **tx-sort**}] [**clear**]

## Context

[\[Tree\]](#) (tools>dump>eth-cfm top-active-meps)

## Full Context

tools dump eth-cfm top-active-meps

## Description

This command displays and optionally clears the most active MEPs on the system.

## Default

top-active-meps

## Parameters

### **rx-sort**

Sorts in the RX direction.

### **tx-sort**

Sorts in the TX direction.

### **clear**

Clears the current counters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 23.28 top-flows

### top-flows

#### Syntax

**top-flows** *protocols* [**clear**]

#### Context

[\[Tree\]](#) (tools>dump>cflowd top-flows)

#### Full Context

tools dump cflowd top-flows

#### Description

This command displays the top 20 (highest traffic volume) flows for IPv4, IPv6 or MPLS traffic types collected since the cflowd top-flow table was last cleared or initialized.

#### Platforms

All

#### Output

The following output is an example of cflowd top flow information, and [Table 602: Tools Dump cflowd Top-flows Out put Fields](#) describes the output fields.

#### Output Example

```

1          2          3          4          5          6          7          8
1234567890123456789012345678901234567890123456789012345678901234567890
Sr1# tools dump cflowd top-flows ipv4

Ingress i/f   SrcIP           Egress i/f     DstIP          Pr  TOS  Flgs  Pkts
vRtr-ID      S-Port Msk AS        D-Port Msk AS  NextHop        Avg Pkt  Size  Active
-----
1000          52.52.52.1     2001           123.123.123.122 0x01 55   0x10 3748
10201         0000 /8 50        0000 /8 40   202.120.130.2   220    3600
.....

          1          2          3          4          5          6          7          8
1234567890123456789012345678901234567890123456789012345678901234567890
Sr1# tools dump cflowd top-flows ipv6
SrcIP (up to IPv6)           Ingress i/f   Src Port   vRtr ID   ToS
DstIP (upto IPv6)           Egress i/f   Dst Port   Proto     Flags
NextHop (uptoIPv6)          Total Pkts    Avg Pkt    Active(sec)
2001:0db8:85a3:0000:0000:8a2e:0370:7334 60005         10020      0          0x12
2001:0db8:85a3:0000:0000:8a2e:0280:1234 60325         20010      17          0x23
2001:0db8:85a3:0000:0000:8a2e:1234:5678 1234567890    1500       13600
.....

          1          2          3          4          5          6          7          8

```

```

1234567890123456789012345678901234567890123456789012345678901234567890
Sr1# tools dump cflowd top-flows mpls
Label-1 Label-2 Label-3 Label-4 Total Pkts Avg Pkt Active(s)
SrcIP (up to IPv6) Ingress i/f Src Port ToS
DstIP (upto IPv6) Egress i/f Dst Port Proto Flags
-----
    
```

Table 602: Tools Dump cflowd Top-flows Out put Fields

Label	Description
Ingress	Displays the ingress interface ID
Src IP	Displays the source IP address of the flow (IPv4 or IPv6)
Egress	Displays the egress interface ID
Dest IP	Displays the destination IP address of the flow (IPv4 or IPv6)
Pr Proto	Displays the protocol type for flow
TOS	Displays the Type-of-Service/DSCP butts filed markings
Flgs	Displays the protocol flag markings
Pkts	Displays the total number of packets sampled for this flow (since stats were last cleared)
vRtr-ID	Displays the vRouter context the flow was sample in
S-Port Src Port	Displays the source protocol port number
Msk	Displays the route prefix length for route to source IP address
AS	Displays the Autonomous Systems number for the source route (the AS is either originating AS or peer AS depending on cflowd configuration)
D-Port Dst Port	Displays the destination protocol port number
Msk	Displays the route prefix length for route to destination IP address (Forwarding route)
AS	Displays the Autonomous Systems number for the destination route (the AS is either originating AS or peer AS depending on cflowd configuration)
Nexthop	Displays the next-hop address used to forward traffic associated with the flow



Label	Description
Avg pkt size	Displays the average packet size of a sampled traffic associated with this flow (total number of packets sampled/total number of packets sampled)
Active	Displays the number of seconds the flow has been active

## 23.29 top-protocols

### top-protocols

#### Syntax

**top-protocols** *protocols* [**clear**]

#### Context

[\[Tree\]](#) (tools>dump>cflowd top-protocols)

#### Full Context

tools dump cflowd top-protocols

#### Description

This command displays the summary information for the top 20 protocol traffic seen in the cflowd cache. All statistics are calculated based on the data collected since the last clearing of the cflowd stats with clear keyword for this command.

If the **clear** optional keyword is given, then the top-flows are displayed, and then this cache is cleared.

#### Platforms

All

#### Output

The following output is an example of cflowd top protocol traffic information, and [Table 603: Tools Dump cflowd top-protocols Fields](#) describes the output fields.

#### Output Example

```
SR# tools dump cflowd top-protocols

The top 20 IPv4 protocols seen by cflowd are:
  Current Time: 08/29/2011 15:36:15
Last Cleared Time: 08/29/2011 15:35:08
Protocol ID      Total   Flows   Packets   Bytes   Packets   Duration   % Total
-----      Flows   /Sec    /Flow    /Pkt    /Sec      /Flow    Bandwidth
-----
UDP              2       0       6       100     0         6         75%
pr1              1       0       6        64     0         6         24%
```

TOTALS	3	0	6	88	0	6	100%
--------	---	---	---	----	---	---	------

Table 603: Tools Dump cflowd Top-protocols Fields

Label	Description
Protocol ID	Displays the IPv4 or IPv6 protocol type; this will either print the well-known protocol name or the decimal protocol number
Total Flows	Displays the total number of flows recorded since the last clearing of cflowd statistics with this protocol type.
Flows/Sec	Displays the average number of flows detected for the associated protocol type (Total flows/number of seconds since last clear)
Packets/Flow	Displays the average number of packets per flow (Total number of packets/total flows)
Bytes/Pkts	Displays the average number of bytes per packet for the associated protocol type (Total number of bytes for the associated protocol/total number of packets seen for the associated protocol)
Packets/Sec	Displays the average number of packets seen for the associated protocol type (Number of packets/time since last clear)
Duration/Flow	Displays the average lifetime of a flow for the associated protocol type (Number of seconds since last clear/total flows)
Bandwidth Total (%)	Displays the percentage of bandwidth consumed by the associated protocol type (Total protocol bytes/total bytes of all flows)

## 23.30 topology

### topology

#### Syntax

**topology** [ipv4-unicast | ipv6-unicast | ipv4-multicast | ipv6-multicast | mt *mt-id-number*] [ lfa] [detail]  
 [flex-algo {flex-algo-id | all}]

## Context

[\[Tree\]](#) (show>router>isis topology)

## Full Context

```
show router isis topology
```

## Description

This command shows IS-IS topology information.

## Parameters

### **ipv4-unicast**

Displays IPv4 unicast parameters.

### **ipv6-unicast**

Displays IPv6 unicast parameters.

### **ipv4-multicast**

Displays IPv4 multicast parameters.

### **ipv6-multicast**

Displays IPv6 multicast parameters.

### **mt *mt-id-number***

Displays multi-topology parameters.

**Values** 0, 2, 3, 4

### **lfa**

Displays loop free alternative (LFA) information. This information corresponds to the backup next hops for IP links and nodes written in RTM by the base LFA feature.

### **detail**

Displays detailed topology information.

### **flex-algo *flex-algo-id***

Displays information about the specified algorithm only based on the *flex-algo-id* filter.

**Values** 128 to 255

### **all**

Displays topology information for all the flexible algorithms.

## Platforms

All

## Output

The following output is an example of router IS-IS topology output, and [Table 604: IS-IS Topology Output Fields](#) describes the output fields.

### Output Example

```
*A:Dut-A# show router isis topology
=====
Rtr Base ISIS Instance 0 Topology Table
=====
Node                               Interface                               Nexthop
-----
IS-IS IP paths (MT-ID 0),  Level 1
-----
Dut-B.00                           ip-3FFE::A0A:101                       Dut-B
Dut-B.01                           ip-3FFE::A0A:101                       Dut-B
Dut-CA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.02                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.05                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-E.00                           ip-3FFE::A0A:101                       Dut-B
Dut-F.00                           ies-1-3FFE::A0A:1501                   Dut-F
Dut-F.01                           ies-1-3FFE::A0A:1501                   Dut-F
Dut-F.02                           ies-1-3FFE::A0A:1501                   Dut-F
-----
IS-IS IPv6 paths (MT-ID 2),  Level 1
-----
Dut-B.00                           ip-3FFE::A0A:101                       Dut-B
Dut-B.01                           ip-3FFE::A0A:101                       Dut-B
Dut-CA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.02                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.05                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-E.00                           ip-3FFE::A0A:101                       Dut-B
Dut-F.00                           ies-1-3FFE::A0A:1501                   Dut-F
Dut-F.01                           ies-1-3FFE::A0A:1501                   Dut-F
Dut-F.02                           ies-1-3FFE::A0A:1501                   Dut-F
-----
IS-IS IP paths (MT-ID 0),  Level 2
-----
Dut-B.00                           ip-3FFE::A0A:101                       Dut-B
Dut-B.01                           ip-3FFE::A0A:101                       Dut-B
Dut-CA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.02                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.05                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-E.00                           ip-3FFE::A0A:101                       Dut-B
Dut-F.00                           ies-1-3FFE::A0A:1501                   Dut-F
Dut-F.01                           ies-1-3FFE::A0A:1501                   Dut-F
Dut-F.02                           ies-1-3FFE::A0A:1501                   Dut-F
-----
IS-IS IPv6 paths (MT-ID 2),  Level 2
-----
Dut-B.00                           ip-3FFE::A0A:101                       Dut-B
Dut-B.01                           ip-3FFE::A0A:101                       Dut-B
Dut-CA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.02                          ip-3FFE::A0A:101                       Dut-B
Dut-CA.05                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.00                          ip-3FFE::A0A:101                       Dut-B
Dut-DA.01                          ip-3FFE::A0A:101                       Dut-B
Dut-E.00                           ip-3FFE::A0A:101                       Dut-B
```

```
Dut-F.00          ies-1-3FFE::A0A:1501      Dut-F
Dut-F.01          ies-1-3FFE::A0A:1501      Dut-F
Dut-F.02          ies-1-3FFE::A0A:1501      Dut-F
=====
*A:Dut-A#
```

### Output Example

```
A:Dut-A# show router isis 0 topology
=====
Rtr Base ISIS Instance 0 Topology Table
=====
Node                Interface                Nexthop
-----
IS-IS IP paths (MT-ID 0), Level 2
-----
Dut-B.00            To_B                    Dut-B
Dut-C.00            To_C                    Dut-C
=====
A:Dut-A#
A:Dut-A#
A:Dut-A# show router isis 0 topology flex-algo 128
=====
Rtr Base ISIS Instance 0 Flex-Algo 128 Topology Table
=====
Node                Interface                Nexthop
-----
IS-IS IP paths (MT-ID 0), Level 2
-----
Dut-B.00            To_C                    Dut-C
Dut-C.00            To_C                    Dut-C
=====
```

Table 604: IS-IS Topology Output Fields

Label	Description
Node	Displays the IP address.
Interface	Displays the interface name.
Nexthop	Displays the nexthop IP address.
LFA Interface	Displays the LFA interface name.
LFA Nexthop	Displays the LFA nexthop IP address.

## 23.31 tp-interface

### tp-interface

#### Syntax

**tp-interface** *interface-num* [**clear**]

#### Context

[\[Tree\]](#) (tools>dump>router>mpls tp-interface)

#### Full Context

tools dump router mpls tp-interface

#### Description

This command displays MPLS-TP interface information.

#### Parameters

##### *interface-num*

specifies the MPLS-TP interface

**Values** 1 to 4294967295

##### *clear*

clears statistics after reading

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following output is an example of MPLS TP interface information.

#### Output Example

```
1-2 (1/1/3) : State Up, Cnt/Tm - Dn: 1/000 00:30:11.150, Up 1/000 00:30:15.160
MEP: ifNum 1 (Validate: Y), ais: Y (txCnt 0)
ais - Flags: 0x1 (R), Timers:
```

## 23.32 tp-lsp

tp-lsp

### Syntax

**tp-lsp** [*lsp-name*] [status { up | down}] [from *ip-address* | to *ip-address*] [detail]

**tp-lsp** [*lsp-name*] path [protecting | working] [detail]

**tp-lsp** [*lsp-name*] protection

### Context

[\[Tree\]](#) (show>router>mpls tp-lsp)

### Full Context

show router mpls tp-lsp

### Description

This command displays TP LSP information.

### Parameters

#### *lsp-name*

Specifies the LSP name up to 64 characters in length. '\*' is accepted as a wild card character.

#### path

Displays LSP path information.

#### protection

Displays LSP protection information.

#### up | down

Specifies the state of the LSP.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of MPLS TP LSP information.

### Output Example

```
*A:mlstp-dutA# show router mpls tp-lsp
path
protection
to <a.b.c.d>
<lsp-name>
"lsp-32" "lsp-33" "lsp-34" "lsp-35" "lsp-36" "lsp-37" "lsp-38" "lsp-39"
```

```

"lsp-40" "lsp-41"
status {up | down}
from <ip-address>
detail

*A:mlstp-dutA# show router mpls tp-lsp "lsp-
"lsp-32" "lsp-33" "lsp-34" "lsp-35" "lsp-36" "lsp-37" "lsp-38" "lsp-39"
"lsp-40" "lsp-41"
*A:mlstp-dutA# show router mpls tp-lsp "lsp-32"

=====
MPLS MPLS-TP LSPs (Originating)
=====
LSP Name                To                Tun      Protect  Adm  Opr
                        Id                Id       Path
-----
lsp-32                  0.0.3.234        32       No       Up   Up
=====
LSPs : 1
=====

*A:mlstp-dutA# show router mpls tp-lsp "lsp-32" detail

=====
MPLS MPLS-TP LSPs (Originating) (Detail)
=====
Type : Originating
-----
LSP Name      : lsp-32
LSP Type      : MplsTp
From Node Id  : 0.0.3.233+
Adm State     : Up
LSP Up Time   : 0d 04:50:47
Transitions   : 1
DestGlobalId  : 42
LSP Tunnel ID : 32
To Node Id    : 0.0.3.234
Oper State    : Up
LSP Down Time : 0d 00:00:00
Path Changes   : 2
DestTunnelNum : 32
=====

*A:mlstp-dutA# show router mpls tp-lsp path

=====
MPLS-TP LSP Path Information
=====
LSP Name      : lsp-32
Admin State   : Up
To            : 0.0.3.234
Oper State    : Up
-----
Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working       32                32       32       AtoB_1           Up     Down
Protect       2080              2080     2080     AtoC_1           Up     Up
=====
LSP Name      : lsp-33
Admin State   : Up
To            : 0.0.3.234
Oper State    : Up
-----
Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working       33                33       33       AtoB_1           Up     Down
Protect       2082              2082     2082     AtoC_1           Up     Up
=====
LSP Name      : lsp-34
Admin State   : Up
To            : 0.0.3.234
Oper State    : Up

```



```

-----
Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          34          34          AtoB_1          Up      Down
Protect         2084         2084         AtoC_1          Up      Up
=====
LSP Name       : lsp-35                To           : 0.0.3.234
Admin State   : Up                  Oper State   : Up
-----

Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          35          35          AtoB_1          Up      Down
Protect         2086         2086         AtoC_1          Up      Up
=====
LSP Name       : lsp-36                To           : 0.0.3.234
Admin State   : Up                  Oper State   : Up
-----

Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          36          36          AtoB_1          Up      Down
Protect         2088         2088         AtoC_1          Up      Up
=====
LSP Name       : lsp-37                To           : 0.0.3.234
Admin State   : Up                  Oper State   : Up
-----

Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          37          37          AtoB_1          Up      Down
Protect         2090         2090         AtoC_1          Up      Up
=====
LSP Name       : lsp-38                To           : 0.0.3.234
Admin State   : Up                  Oper State   : Up
-----

Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          38          38          AtoB_1          Up      Down
Protect         2092         2092         AtoC_1          Up      Up
=====
LSP Name       : lsp-39                To           : 0.0.3.234
Admin State   : Up                  Oper State   : Up
-----

Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          39          39          AtoB_1          Up      Down
Protect         2094         2094         AtoC_1          Up      Up
=====
LSP Name       : lsp-40                To           : 0.0.3.234
Admin State   : Up                  Oper State   : Up
-----

Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          40          40          AtoB_1          Up      Down
Protect         2096         2096         AtoC_1          Up      Up
=====
LSP Name       : lsp-41                To           : 0.0.3.234
Admin State   : Up                  Oper State   : Up
    
```

```

-----
Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working
Protect          41          41          AtoB_1          Up      Down
                  2098        2098        AtoC_1          Up      Up

*A:mlstp-dutA# show router mpls tp-lsp "lsp-32" path working

=====
MPLS-TP LSP Working Path Information
LSP: "lsp-32"
=====
LSP Name      : lsp-32                      To          : 0.0.3.234
Admin State   : Up                      Oper State  : Up

-----
Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Working          32          32          AtoB_1          Up      Down

=====
*A:mlstp-dutA# show router mpls tp-lsp "lsp-32" path protect

=====
MPLS-TP LSP Protect Path Information
LSP: "lsp-32"
=====
LSP Name      : lsp-32                      To          : 0.0.3.234
Admin State   : Up                      Oper State  : Up

-----
Path          NextHop          InLabel  OutLabel  Out I/F          Admin  Oper
-----
Protect          2080         2080        AtoC_1          Up      Up

=====
*A:mlstp-dutA# show router mpls tp-lsp "lsp-32" path protect detail

=====
MPLS-TP LSP Protect Path Information
LSP: "lsp-32" (Detail)
=====
LSP Name      : lsp-32                      To          : 0.0.3.234
Admin State   : Up                      Oper State  : Up

Protect path information
-----
Path Type     : Protect                      LSP Num     : 2
Path Admin    : Up                      Path Oper   : Up
Out Interface : AtoC_1                      Next Hop Addr : n/a
In Label     : 2080                       Out Label   : 2080
Path Up Time  : 0d 04:52:17          Path Dn Time : 0d 00:00:00
Active Path   : Yes                      Active Time  : 0d 00:52:56

MEP information
MEP State     : Up                      BFD         : cc
OAM Templ    : privatebed-oam-template  CC Status   : inService
CV Status    : unknown
Protect Templ : privatebed-protection-template  WTR Count Down: 0 seconds
RX PDU       : SF (1,1)              TX PDU      : SF (1,1)
Defects      :

=====
*A:mlstp-dutA# show router mpls tp-lsp "lsp-32" path working detail
    
```

```
=====
MPLS-TP LSP Working Path Information
LSP: "lsp-32" (Detail)
=====
```

```
LSP Name      : lsp-32                To          : 0.0.3.234
Admin State   : Up                    Oper State  : Up
```

```
Working path information
-----
```

```
Path Type     : Working                LSP Num     : 1
Path Admin    : Up                    Path Oper    : Up
Out Interface : AtoB_1                 Next Hop Addr : n/a
In Label      : 32                    Out Label    : 32
Path Up Time  : 18d 22:39:53          Path Dn Time : 0d 00:00:00
Active Path   : Yes                   Active Time  : 18d 22:34:52
```

```
MEP information
```

```
MEP State     : Up                    BFD          : cc
OAM Templ     : privatebed-oam-template BFD Status   : inService
Ingress I/F N*: 0                    Egress I/F Num: 0
AIS State     : AIS
```

```
=====
*A:mlstp-dutA#
```

```
*A:mlstp-dutA# show router mpls tp-lsp protection
```

```
=====
MPLS-TP LSP Protection Information
Legend: W-Working, P-Protect,
=====
```

LSP Name	Admin State	Oper State	Path State	Ingr/Egr Label	Act. Path	Rx Tx PDU
lsp-32	Up	Up	W Down	32/32	No	SF (1,1)
			P Up	2080/2080	Yes	SF (1,1)
lsp-33	Up	Up	W Down	33/33	No	SF (1,1)
			P Up	2082/2082	Yes	SF (1,1)
lsp-34	Up	Up	W Down	34/34	No	SF (1,1)
			P Up	2084/2084	Yes	SF (1,1)
lsp-35	Up	Up	W Down	35/35	No	SF (1,1)
			P Up	2086/2086	Yes	SF (1,1)
lsp-36	Up	Up	W Down	36/36	No	SF (1,1)
			P Up	2088/2088	Yes	SF (1,1)
lsp-37	Up	Up	W Down	37/37	No	SF (1,1)
			P Up	2090/2090	Yes	SF (1,1)
lsp-38	Up	Up	W Down	38/38	No	SF (1,1)
			P Up	2092/2092	Yes	SF (1,1)
lsp-39	Up	Up	W Down	39/39	No	SF (1,1)
			P Up	2094/2094	Yes	SF (1,1)
lsp-40	Up	Up	W Down	40/40	No	SF (1,1)
			P Up	2096/2096	Yes	SF (1,1)
lsp-41	Up	Up	W Down	41/41	No	SF (1,1)
			P Up	2098/2098	Yes	SF (1,1)

```
-----
No. of MPLS-TP LSPs: 10
=====
```

```
*A:Dut-B# show router mpls tp-lsp
```

```
=====
MPLS MPLS-TP LSPs (Originating)
=====
```

LSP Name	To	Tun Id	Protect Path	Adm	Opr
unnumberedLSP	0.0.0.43	1	No	Up	Up
numberedLSP	0.0.0.43	2	No	Up	Up
numberedLSPIoMspan	0.0.0.43	3	No	Up	Up
LSRunnumberedLSP	0.0.0.45	4	No	Up	Up
LSRnumberedLSP	0.0.0.45	5	No	Up	Up
statemachineLSP	0.0.0.45	6	No	Up	Up
unnumberedLagLSP	0.0.0.43	7	No	Up	Up
numberedLagLSP	0.0.0.43	8	No	Up	Up
-----					
LSPs : 8					
=====					
*A:Dut-B#					

### 23.33 tp-lsp-egress-stats

#### tp-lsp-egress-stats

#### Syntax

**tp-lsp-egress-stats** *lsp* *lsp-name* [*interval seconds*] [*repeat repeat*] [*absolute | rate*]

#### Context

[\[Tree\]](#) (monitor>router>mpls tp-lsp-egress-stats)

#### Full Context

monitor router mpls tp-lsp-egress-stats

#### Description

This command monitors MPLS TP LSP egress statistics.

#### Parameters

##### *lsp-name*

Specifies the LSP name, up to 64 characters.

##### *repeat*

Specifies how many times the command is repeated.

**Values** 1 to 999

**Default** 10

##### *seconds*

Specifies the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 23.34 tp-lsp-ingress-stats

### tp-lsp-ingress-stats

**Syntax**

**tp-lsp-ingress-stats** *lsp* *lsp-name* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**Context**

[\[Tree\]](#) (monitor>router>mpls tp-lsp-ingress-stats)

**Full Context**

monitor router mpls tp-lsp-ingress-stats

**Description**

This command monitors MPLS TP LSP ingress statistics.

**Parameters**

***lsp-name***

Specifies the LSP name, up to 64 characters.

***repeat***

Specifies how many times the command is repeated.

**Values** 1 to 999

**Default** 10

***seconds***

Specifies the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

## 23.35 tp-tunnel

### tp-tunnel

**Syntax**

**tp-tunnel** *lsp-name* [**clear**]

**tp-tunnel id** *tunnel-id* [**clear**]

**Context**

[\[Tree\]](#) (tools>dump>router>mpls tp-tunnel)

**Full Context**

tools dump router mpls tp-tunnel

**Description**

This command displays MPLS-TP tunnel information.

**Parameters**

***lsp-name***

specifies the LSP name, up to 64 characters

***id tunnel-id***

specifies the tunnel ID

**Values** 1 to 61440

***clear***

clears statistics after reading

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

**Output**

The following output is an example of MPLS TP interface information.

## Output Example

```
*A:Dut-B# tools dump router mpls tp-tunnel "numberedLSP"
Idx: 1-2 (Up/Up): pgId 2, paths 2, operChg 0, Active: Protect
TunnelId: 4294967295::0.0.0.42::2-4294967295::0.0.0.43::2
PgState: Dn, Cnt/Tm: Dn 1/000 00:25:12.760 Up:0/000 00:00:00.000
MplsMsg: tpDn 0/000 00:00:00.000, tunDn 0/000 00:00:00.000
         wpDn 0/000 00:00:00.000, ppDn 0/000 00:00:00.000
         wpDel 0/000 00:00:00.000, ppDel 0/000 00:00:00.000
         tunUp 0/000 00:00:00.000

Paths:
Work (Up/Up): Lsp 1, Lbl 34/34, If 4/16 (1/1/3 : 10.10.10.2)
  Tmpl: ptc: , oam: my-oam-template (bfd: my-bfd-template)
  Bfd: Mode CC_CV state Up/Up handle 5/6
  Bfd-CC (Cnt/Tm): Dn 1/000 00:25:12.770 Up:1/000 00:25:17.680
  Bfd-CV (Cnt/Tm): Dn 0/000 00:00:00.000 Up:0/000 00:00:00.000
  DsIfNum (in/out): 5/0
  Ais: State clear (tmr N), Cnt(raw/chg) 0/0, Drop (inv/ign) 0/0
  Ais: Rx - Tm 0 sec, Global/Node/ifNum: 0/0.0.0.0/0
  State: Admin Up (1::1::1) port Up , if Up , operChg 2
Protect (Up/Up): Lsp 2, Lbl 35/35, If 5/17 (1/1/4 : 11.11.11.2)
  Tmpl: ptc: my-protection-template, oam: my-oam-template (bfd: my-bfd-template)
  Bfd: Mode CC_CV state Up/Up handle 33/34
  Bfd-CC (Cnt/Tm): Dn 0/000 00:00:00.000 Up:0/000 00:00:00.000
  Bfd-CV (Cnt/Tm): Dn 0/000 00:00:00.000 Up:0/000 00:00:00.000
  DsIfNum (in/out): 6/0
  Ais: State clear (tmr N), Cnt(raw/chg) 0/0, Drop (inv/ign) 0/0
  Ais: Rx - Tm 0 sec, Global/Node/ifNum: 0/0.0.0.0/0
  State: Admin Up (1::1::1) port Up , if Up , operChg 0
Psc: Rx - 3, raw 16, nok 0(), txRaw - 15, revert N
Pdu: Rx - 0x11-20::0001 (DNR), Tx - 0x11-20::0001 (DNR)
State: DNR LastEvt pdu (L-SFc/R-DNR)
Tmrs: slow
Defects: None Now: 000 00:25:54.170
```

Seq	Event	state	TxPdu	RxPdu	Dir	Act	Time
000	wDn	PF:W:L	SF (1,1)	NR (0,0)	Tx-->	Prot	000 00:25:12.760
001	pdu	PF:W:L	SF (1,1)	NR (0,1)	Rx<--	Prot	000 00:25:12.770
002	pdu	PF:W:L	SF (1,1)	SF (1,1)	Rx<--	Prot	000 00:25:15.680
003	wUp	DNR	DNR (0,1)	SF (1,1)	Tx-->	Prot	000 00:25:19.860
004	pdu	DNR	DNR (0,1)	DNR (0,1)	Rx<--	Prot	000 00:25:20.610

```
*A:Dut-B#
```

```
*A:Dut-B# tools dump router mpls tp-tunnel id 1
Idx: 1-1 (Up/Up): pgId 1, paths 2, operChg 0, Active: Protect
TunnelId: 4294967295::0.0.0.42::1-4294967295::0.0.0.43::1
PgState: Dn, Cnt/Tm: Dn 1/000 00:25:12.760 Up:0/000 00:00:00.000
MplsMsg: tpDn 0/000 00:00:00.000, tunDn 0/000 00:00:00.000
         wpDn 0/000 00:00:00.000, ppDn 0/000 00:00:00.000
         wpDel 0/000 00:00:00.000, ppDel 0/000 00:00:00.000
         tunUp 0/000 00:00:00.000

Paths:
Work (Up/Up): Lsp 1, Lbl 32/32, If 2/14 (1/1/3 : 0.0.0.0)
  Tmpl: ptc: , oam: my-oam-template (bfd: my-bfd-template)
  Bfd: Mode CC_CV state Up/Up handle 1/2
  Bfd-CC (Cnt/Tm): Dn 1/000 00:25:12.770 Up:1/000 00:25:17.680
  Bfd-CV (Cnt/Tm): Dn 0/000 00:00:00.000 Up:0/000 00:00:00.000
  DsIfNum (in/out): 1/0
  Ais: State clear (tmr N), Cnt(raw/chg) 0/0, Drop (inv/ign) 0/0
  Ais: Rx - Tm 0 sec, Global/Node/ifNum: 0/0.0.0.0/0
  State: Admin Up (1::1::1) port Up , if Up , operChg 2
Protect (Up/Up): Lsp 2, Lbl 33/33, If 3/15 (1/1/4 : 0.0.0.0)
  Tmpl: ptc: my-protection-template, oam: my-oam-template (bfd: my-bfd-template)
```

```

Bfd: Mode CC_CV state Up/Up handle 47/48
Bfd-CC (Cnt/Tm): Dn 0/000 00:00:00.000 Up:0/000 00:00:00.000
Bfd-CV (Cnt/Tm): Dn 0/000 00:00:00.000 Up:0/000 00:00:00.000
DsIfNum (in/out): 2/0
Ais: State clear (tmr N), Cnt(raw/chg) 0/0, Drop (inv/ign) 0/0
Ais: Rx - Tm 0 sec, Global/Node/ifNum: 0/0.0.0/0
State: Admin Up (1::1::1) port Up , if Up , operChg 0
Psc: Rx - 3, raw 25, nok 0(), txRaw - 24, revert N
Pdu: Rx - 0x11-20::0001 (DNR), Tx - 0x11-20::0001 (DNR)
State: DNR LastEvt pdu (L-SFc/R-DNR)
Tmrs: slow
Defects: None Now: 000 00:26:41.160
Seq  Event  state  TxPdu  RxPdu  Dir  Act  Time
====  =====  =====  =====  =====  =====  =====  =====
000   wDn    PF:W:L  SF (1,1)  NR (0,0)  Tx-->  Prot  000 00:25:12.760
001   pdu    PF:W:L  SF (1,1)  NR (0,1)  Rx<--  Prot  000 00:25:12.770
002   pdu    PF:W:L  SF (1,1)  SF (1,1)  Rx<--  Prot  000 00:25:15.680
003   wUp    DNR    DNR (0,1)  SF (1,1)  Tx-->  Prot  000 00:25:19.860
004   pdu    DNR    DNR (0,1)  DNR (0,1)  Rx<--  Prot  000 00:25:20.710
*A:Dut-B#
*A:Dut-B# tools dump router mpls tp-interface 1
1-2 (1/1/3) : State Up, Cnt/Tm - Dn: 1/000 00:25:12.770, Up 1/000 00:25:16.790
MEP: ifNum 1 (Validate: Y), ais: Y (txCnt 0)
ais - Flags: 0x1 (R), Timers:
    
```

## tp-tunnel

### Syntax

**tp-tunnel**

### Context

[\[Tree\]](#) (tools>perform>router>mpls tp-tunnel)

### Full Context

tools perform router mpls tp-tunnel

### Description

Commands in this context perform Linear Protection operations on an MPLS-TP LSP.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS



## 23.36 trace

trace

### Syntax

**trace** [**name** *trace-name*]

### Context

**[Tree]** (show>call-trace trace)

**[Tree]** (show>call-trace>ipoe trace)

### Full Context

show call-trace trace

show call-trace ipoe trace

### Description

This command displays information about all traces and associated parameters that are currently enabled on the system. Including the *trace-name* parameter limits the output to the specified trace only.

### Parameters

***trace-name***

Specifies the name of the trace to be displayed.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### Output

The following output is an example of call trace information.

### Output Example

```
Node# show call-trace ipoe trace
=====
Call trace trace
=====
Trace name   : default                               Type       : ipoe
SAP ID      :
IEEE address: 00:02:00:00:00:19
Maximum jobs: 1
=====
```

[Table 605: Call Trace IPoE Trace Field Descriptions](#) describes call trace IPoE trace output fields.

Table 605: Call Trace IPoE Trace Field Descriptions

Field	Description
Trace name	The name of the trace profile
Type	The type of the call trace
SAP ID	The SAP ID of the session to match by this trace
IEEE address	The IEEE address of the session that matches this trace
Maximum jobs	The maximum number of call trace jobs that are started by this trace

## trace

### Syntax

**trace** *trace-name*

### Context

**[Tree]** (clear>call-trace trace)

**[Tree]** (clear>call-trace>ipoe trace)

### Full Context

clear call-trace trace

clear call-trace ipoe trace

### Description

This command clears all trace jobs started by the specified trace. This command does not affect the trace command itself, and new jobs can still be executed for new sessions.

After a session is cleared, tracing for the session will not be restarted by any configured trace. Only explicitly starting a new trace with the **trace-existing-sessions** parameter can restart tracing for the session.

### Parameters

***trace-name***

Specifies the configured name, up to 32 characters, of the trace.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 23.37 trace-profile

### trace-profile

#### Syntax

**trace-profile** [detail]

**trace-profile** *profile-name*

#### Context

[\[Tree\]](#) (show call-trace trace-profile)

#### Full Context

show call-trace trace-profile

#### Description

This command provides an overview of all configured profiles or details of a specific profile. If the detail option is specified the full information for all configured profiles are displayed.

#### Parameters

##### detail

Displays detailed trace profile information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of call-trace trace-profile information.

#### Output Example

```
Node# show call-trace trace-profile "default"
=====
Call-trace trace profile
=====
Profile name           : default
Description            : none
Live output            : none
Format                 : pcap
Size limit              : 10 MB
Time limit              : 86400 secs
-----
Number of profiles : 1
=====
```

## 23.38 traffic-capture

### traffic-capture

#### Syntax

**traffic-capture detail url** *file-url*

**traffic-capture status**

#### Context

[\[Tree\]](#) (tools>dump>app-assure>group traffic-capture)

#### Full Context

tools dump application-assurance group traffic-capture

#### Description

This command displays application-assurance traffic-capture information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.39 traffic-forward

### traffic-forward

#### Syntax

**traffic-forward tunnel-type** *tunnel-type* [ **type** *type*] **isa** *mda*

**traffic-forward tunnel-type** *tunnel-type* [ **type** *type*] **esa-vm** *esa-id/vm-id*

#### Context

[\[Tree\]](#) (show>isa>stats>ip-tunnel-stats traffic-forward)

#### Full Context

show isa statistics ip-tunnel-stats traffic-forward

#### Description

This command displays traffic forward statistics for the specified tunnel-type on the specified ISA.

The statistics includes the following information:

- The number of bidirectional (encapsulated and decapsulated) packets

- The number of encapsulated packets
- The number of decapsulated packets
- The number of bidirectional (encapsulated and decapsulated) kilobytes
- The number of kilobytes for encapsulated traffic
- The number of kilobytes for decapsulated traffic

In the output, 1 kilobyte equals 210 bytes.

## Parameters

### *tunnel-type*

Displays the type of the tunnel.

**Values** gre, ip-in-ip, l2tpv3

### *mda*

Displays the ISA ID.

**Values** slot/mda

### *type*

Displays the type of breakdown counter.

**Values** bidir-pkts, bidir-kbs, encap-pkts, encap-kbs, decap-pkts, decap-kbs

### *esa-vm*

Displays the ID of the configured ESA and ESA VM.

**Values**

esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show router statistics ip-tunnel-stats traffic-forward** command.

### Output Example

```
show>isa>stats>ip-tunnel-stats# traffic-forward tunnel-type gre isa 1/2
=====
STATISTICS FOR ISA 1/2
=====
INDEX          VALUE                START TIME          SAMPLING DURATION
-----
NUMBER OF ENCAPED GRE TUNNEL PACKETS
1 (CURRENT)  367,474              2017/05/22 17:45:12 HRS 4 MIN 45 SEC 46
```

```
NUMBER OF DECAPED GRE TUNNEL PACKETS
                                [0/1874]
1 (CURRENT) 1,310,402           2017/05/22 17:45:12 HRS 4 MIN 45 SEC 46
NUMBER OF ENCAPED AND DECAPED GRE TUNNEL PACKETS
1 (CURRENT) 1,677,876           2017/05/22 17:45:12 HRS 4 MIN 45 SEC 46
NUMBER OF KIBIBYTES IN THE ENCAPED GRE TUNNEL PACKETS
1 (CURRENT) 1,544,351           2017/05/22 17:45:12 HRS 4 MIN 45 SEC 46
NUMBER OF KIBIBYTES IN THE DECAPED GRE TUNNEL PACKETS
1 (CURRENT) 1,573,014           2017/05/22 17:45:12 HRS 4 MIN 45 SEC 46
NUMBER OF KIBIBYTES IN THE ENCAPED AND DECAPED GRE TUNNEL PACKETS
1 (CURRENT) 3,117,365           2017/05/22 17:45:12 HRS 4 MIN 45 SEC 46
-----
NO. OF ENTRIES: 6
=====
```

## traffic-forward

### Syntax

```
traffic-forward [type type] esa-vm esa-id/vm-id
traffic-forward [type type] gateway name
traffic-forward [type type] isa mda
traffic-forward [type type] gateway name dynamic-tunnel ip-address:port
traffic-forward [type type] tunnel ipsec-tunnel-name
```

### Context

[\[Tree\]](#) (show>isa>stats>ipsec-stats traffic-forward)

### Full Context

```
show isa statistics ipsec-stats traffic-forward
```

### Description

This command displays traffic forward statistics of the specified scope.

This command supports following scopes:

- per system
- per ISA
- per tunnel group
- per IPsec GW

The statistics include:

- The number of bidirectional encrypted and decrypted packets
- The number of encrypted packets
- The number of decrypted packets per second
- The number of bidirectional (encrypted and decrypted) in kilobytes
- The number of bidirectional encrypted bits in kilobytes

- The number of bidirectional decrypted bits in kilobytes

1 kilobyte equals 2<sup>10</sup> bytes

The start time indicates the starting timestamp of the measurement. The sampling duration indicates the duration of the measurement.

## Parameters

### *esa-vm*

Displays the ID of the configured ESA and ESA VM.

Values	esa-vm:	<i>esa-id/vm-id</i>	
		<i>esa-id</i>	1 to 16
		<i>vm-id</i>	1 to 4

### *name*

Displays information about the name of the IPsec GW up to 32 characters in length.

### *mda*

Displays information about the specified ISA.

Values	slot/mda
--------	----------

### *tunnel-group-id*

Displays information about the specified tunnel group ID.

Values	1 to 16
--------	---------

### *ip-address:port*

Displays information about the IP address and port of the peer for dynamic tunneling.

### *ipsec-tunnel-name*

Specifies the name of the static LAN-to-LAN tunnel up to 32 characters in length.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show isa stats ipsec-stats traffic forward isa** command.

### Output Example

```
show>isa>stats>ipsec-stats# traffic-forward isa 1/2
=====
STATISTICS FOR ISA 1/2
=====
INDEX          VALUE          START TIME          SAMPLING DURATION
-----
NUMBER OF ENCRYPTED IPSEC PACKETS
1 (CURRENT)  770,881        2017/05/23 17:50:48 HRS 6 MIN 33 SEC 57
NUMBER OF DECRYPTED IPSEC PACKETS
1 (CURRENT)  770,881        2017/05/23 17:50:48 HRS 6 MIN 33 SEC 57
```

```

NUMBER OF ENCRYPTED AND DECRYPTED IPSEC PACKETS
1 (CURRENT) 1,541,762 2017/05/23 17:50:48 HRS 6 MIN 33 SEC 57
NUMBER OF KIBIBYTES IN THE ENCRYPTED IPSEC PACKETS
1 (CURRENT) 3,785,141 2017/05/23 17:50:48 HRS 6 MIN 33 SEC 57
NUMBER OF KIBIBYTES IN THE DECRYPTED IPSEC PACKETS
1 (CURRENT) 3,785,141 2017/05/23 17:50:48 HRS 6 MIN 33 SEC 57
NUMBER OF KIBIBYTES IN THE ENCRYPTED AND DECRYPTED IPSEC PACKETS
1 (CURRENT) 7,570,282 2017/05/23 17:50:48 HRS 6 MIN 33 SEC 57
-----
NO. OF ENTRIES: 6
=====

show>isa>stats>ipsec-stats# traffic-forward gateway "rw" dynamic-tunnel 10.1.1.100:500
=====
STATISTICS FOR IPSEC REMOTE USER TUNNEL "10.1.1.100:500"
=====
INDEX          VALUE          START TIME          SAMPLING DURATION
-----
NUMBER OF ENCRYPTED IPSEC PACKETS
1 (CURRENT) 676,774 2017/05/23 22:36:15 HRS 1 MIN 52 SEC 49
NUMBER OF DECRYPTED IPSEC PACKETS
1 (CURRENT) 676,774 2017/05/23 22:36:15 HRS 1 MIN 52 SEC 49
NUMBER OF ENCRYPTED AND DECRYPTED IPSEC PACKETS
1 (CURRENT) 1,353,548 2017/05/23 22:36:15 HRS 1 MIN 52 SEC 49
NUMBER OF KIBIBYTES IN THE ENCRYPTED IPSEC PACKETS
1 (CURRENT) 3,323,066 2017/05/23 22:36:15 HRS 1 MIN 52 SEC 49
NUMBER OF KIBIBYTES IN THE DECRYPTED IPSEC PACKETS
1 (CURRENT) 3,323,066 2017/05/23 22:36:15 HRS 1 MIN 52 SEC 49
NUMBER OF KIBIBYTES IN THE ENCRYPTED AND DECRYPTED IPSEC PACKETS
1 (CURRENT) 6,646,132 2017/05/23 22:36:15 HRS 1 MIN 52 SEC 49
-----
NO. OF ENTRIES: 6
=====
  
```

## 23.40 traffic-statistics

### traffic-statistics

#### Syntax

**traffic-statistics** prefix *ip-prefix/ip-prefix-length*

**traffic-statistics** family *family*

**traffic-statistics**

#### Context

[\[Tree\]](#) (show>router>bgp traffic-statistics)

#### Full Context

show router bgp traffic-statistics

#### Description

This command displays BGP-LU traffic statistics.



## Parameters

### prefix *ip-prefix/ip-prefix-length*

Displays statistics for the specified prefix.

- Values**
- ipv4-prefix:
    - a.b.c.d
  - ipv4-prefix-length:
    - 0 to 32
  - ipv6-prefix:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x - [0 to FFFF]H
    - d - [0 to 255]D
  - ipv6-prefix-length:
    - 0 to 128

### family *family*

Displays statistics for the specified address family.

- Values** label-ipv4, label-ipv6

## Platforms

All

## Output

The following output is an example of traffic statistics information.

### Output Example

```
=====
BGP Router ID:10.20.1.2      AS:100      Local AS:100
=====
-----
Prefix : 100.1.1.1/32
NextHop : 10.10.12.1
Ingress Label : 19105
Ingress Oper State : Unknown
Ingress packets : 366992      Ingress Octets : 96885888
Egress Label : 19105
Egress Oper State : Unknown
Egress packets : 0      Egress Octets : 0
-----
-----
```

## traffic-statistics

### Syntax

```
traffic-statistics prefix ip-prefix/ip-prefix-length [ingress | egress]  
traffic-statistics family {label-ipv4 | label-ipv6} [ingress | egress]  
traffic-statistics [ingress | egress]
```

### Context

[\[Tree\]](#) (clear>router>bgp traffic-statistics)

### Full Context

```
clear router bgp traffic-statistics
```

### Description

This command clears BGP-LU traffic statistics.

### Parameters

#### prefix *ip-prefix/ip-prefix-length*

Clears statistics for the specified prefix.

<b>Values</b>	ipv4-prefix: <ul style="list-style-type: none"><li>a.b.c.d</li></ul> ipv4-prefix-length: <ul style="list-style-type: none"><li>0 to 32</li></ul> ipv6-prefix: <ul style="list-style-type: none"><li>x:x:x:x:x:x:x (eight 16-bit pieces)</li><li>x:x:x:x:x:d.d.d.d</li><li>x - [0 to FFFF]H</li><li>d - [0 to 255]D</li></ul> ipv6-prefix-length: <ul style="list-style-type: none"><li>0 to 128</li></ul>
---------------	---

#### ingress

Clears statistics on ingress data-path.

#### egress

Clears statistics on egress data-path.

#### family label-ipv4 | label-ipv6

Clears statistics for the specified address family.

## Platforms

All

## traffic-statistics

### Syntax

**traffic-statistics** **prefix** *ip-prefix/ip-prefix-length* [**interval** *seconds*] [**repeat** *repeat*] [**absolute**| **rate**]

### Context

[\[Tree\]](#) (monitor>router>bgp traffic-statistics)

### Full Context

monitor router bgp traffic-statistics

### Description

This command monitors BGP traffic statistics.

### Parameters

**prefix** *ip-prefix/ip-prefix-length*

Clears statistics for the specified prefix.

- Values**
- ipv4-prefix:
    - a.b.c.d
  - ipv4-prefix-length:
    - 0 to 32
  - ipv6-prefix:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x - [0 to FFFF]H
    - d - [0 to 255]D
  - ipv6-prefix-length:
    - 0 to 128

**seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

**Default** 10

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

## 23.41 traffic-type

### traffic-type

**Syntax**

**traffic-type detail**

**traffic-type ip-family**

**traffic-type ip-protocol**

**traffic-type tls-family**

**Context**

[\[Tree\]](#) (show>app-assure>group traffic-type)

**Full Context**

show application-assurance group traffic-type

**Description**

This command displays per traffic type statistics.

**Parameters**

**detail**

Displays detailed statistics.

**ip-family**

Displays IP family statistics.

**ip-protocol**

Displays IP protocol statistics.

**tls-family**

Displays TLS family statistics.

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of traffic type information.

**Output Example**

```
*A:Dut-C>show>app-assure>group# traffic-type ip-family
=====
Application-Assurance Traffic Type Statistics Per IP Family
=====
IP Family   Disc           Octets           Packets           Flows
-----
IPv4         0%              0                0                0
IPv6         0%              0                0                0
DS-Lite     0%              0                0                0
6RD         0%              0                0                0
Teredo      0%              0                0                0
v4inv4Gtp   0%              0                0                0
v4inv6Gtp   0%              0                0                0
v6inv4Gtp   0%              0                0                0
v6inv6Gtp   0%              0                0                0
=====
```

```
*A:Dut-C>show>app-assure>group# traffic-type ip-protocol detail
-----
IP Protocol: Other   IP Family: v4inv4Gtp
Type                Octets           Packets           Flows
-----
From subscriber:
  Admitted           0                0                0
  Denied             0                0                0
  Active flows
To subscriber:
  Admitted           0                0                0
  Denied             0                0                0
  Active flows
Flow counts:
  Terminated
  Short duration
  Med duration
  Long duration
Total flow duration : 0 seconds
-----
IP Protocol: TCP     IP Family: v4inv4Gtp
Type                Octets           Packets           Flows
-----
From subscriber:
  Admitted           0                0                0
  Denied             0                0                0
  Active flows
To subscriber:
  Admitted           0                0                0
  Denied             0                0                0
  Active flows
Flow counts:
```

```

Terminated 0
Short duration 0
Med duration 0
Long duration 0
Total flow duration : 0 seconds
-----
IP Protocol: UDP   IP Family: v4inv4Gtp
Type              Octets              Packets              Flows
-----
From subscriber:
Admitted          0                  0                  0
Denied            0                  0                  0
Active flows      0
To subscriber:
Admitted          0                  0                  0
Denied            0                  0                  0
Active flows      0
Flow counts:
Terminated        0
Short duration    0
Med duration      0
Long duration     0
Total flow duration : 0 seconds

*A:Dut-C>show>app-assure>group# traffic-type tls-family
=====
Application-Assurance Traffic Type Statistics Per tls-family
=====
tls Variant  Disc      Octets      Packets      Flows
-----
quic         0%         0           0           0
quic esni    0%         0           0           0
quic existing 0%         0           0           0
quic unknown 0%         0           0           0
tls 1.0      0%         0           0           0
tls 1.1      0%         0           0           0
tls 1.2      0%        1475583     2205        150
tls 1.3      0%         0           0           0
tls 1.3 esni 0%        432189      459         34
tls existing 0%         1234        12          2
tls unknown  0%         0           0           0
    
```

## 23.42 transform

### transform

#### Syntax

**transform** [*transform-id*]

#### Context

[\[Tree\]](#) (show>ipsec transform)

## Full Context

show ipsec transform

## Description

This command displays information of the specified IPsec transform or lists all configured IKE transform information when the IKE transform ID is not specified.

## Parameters

*transform-id*

Specifies an IPsec transform entry.

**Values** 1 to 2048

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show ipsec transform** command.

### Output Example

```
NODE# show ipsec transform
=====
IPSEC TRANSFORMS
=====
TRANSFORMID  ESPAUTH          ESPENCRYPTION    PFS              IPSEC
              ALGORITHM        ALGORITHM        DH GROUP         LIFETIME (SEC)
-----
1             SHA256           AES128           INHERIT          INHERIT
10            SHA256           AES256           14               20000
99            SHA1             AES192           15               30000
100           SHA1             AES128           INHERIT          INHERIT
-----
NO. OF IPSEC TRANSFORMS: 4
=====
```

## 23.43 transit-ip-policy

### transit-ip-policy

#### Syntax

**transit-ip-policy** *ip-policy-id*

**transit-ip-policy summary**

**transit-ip-policy** *ip-policy-id summary*

## Context

[\[Tree\]](#) (show>app-assure>group transit-ip-policy)

## Full Context

show application-assurance group transit-ip-policy

## Description

This command displays transit IP policy information.

## Parameters

### *ip-policy-id*

Displays information for the specified IP policy.

**Values** 1 to 65535

### *summary*

Displays summarized information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.44 transit-path

### transit-path

## Syntax

**transit-path** [*path-name*] [**detail**]

## Context

[\[Tree\]](#) (show>router>mpls>mpls-tp transit-path)

## Full Context

show router mpls mpls-tp transit-path

## Description

This command displays MPLS-TP tunnel information.

## Parameters

### *path-name*

Specifies the path name, up to 32 characters.



## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of MPLS OAM transit path information.

### Output Example

```
A:mplstp-dutC# show router mpls mpls-tp transit-path
<path-name>
"tp-32" "tp-33" "tp-34" "tp-35" "tp-36" "tp-37" "tp-38" "tp-39"
"tp-40" "tp-41"
detail

A:mplstp-dutC# show router mpls mpls-tp transit-path "tp-32"
=====
MPLS-TP Transit tp-32 Path Information
=====
Path Name      : tp-32
Admin State    : Up
Oper State     : Up

-----
Path           NextHop           InLabel  OutLabel  Out I/F
-----
FP             2080             2081     CtoB_1
RP             2081             2080     CtoA_1
=====

A:mplstp-dutC# show router mpls mpls-tp transit-path "tp-32" detail
=====
MPLS-TP Transit tp-32 Path Information (Detail)
=====
Path Name      : tp-32
Admin State    : Up
Oper State     : Up

-----
Path ID configuration
Src Global ID  : 42
Src Node ID    : 0.0.3.234
LSP Number    : 2
Dst Global ID  : 42
Dst Node ID    : 0.0.3.233
Dst Tunnel Num: 32

Forward Path configuration
In Label      : 2080
Out Interface  : CtoB_1
Out Label     : 2081
Next Hop Addr : n/a

Reverse Path configuration
In Label      : 2081
Out Interface  : CtoA_1
Out Label     : 2080
Next Hop Addr : n/a
=====

A:mplstp-dutC#
```

## 23.45 transit-prefix-policy

### transit-prefix-policy

#### Syntax

**transit-prefix-policy** *transit-prefix-policy-id*

**transit-prefix-policy summary**

**transit-prefix-policy** *transit-prefix-policy-id* **summary**

#### Context

[\[Tree\]](#) (show>app-assure>group transit-prefix-policy)

#### Full Context

show application-assurance group transit-prefix-policy

#### Description

This command displays transit prefix policy information.

#### Parameters

##### ***transit-prefix-policy-id***

Displays information for the specified transit prefix policy.

**Values** 1 to 65535

##### **summary**

Displays summarized information.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.46 transport-mode

### transport-mode

#### Syntax

**transport-mode tunnel-type** {gre} [**saved-key**] **esa-vm** *esa-id/vm-id*

**transport-mode tunnel-type** {gre} **isa** *mda* [**saved-key**]

**transport-mode tunnel-type** {gre} **tunnel-name** *tunnel-name* [**saved-key**]

## Context

[\[Tree\]](#) (clear>ipsec transport-mode)

## Full Context

clear ipsec transport-mode

## Description

This command clears transport-mode tunnels data.

## Parameters

### *tunnel-name*

Clears data associated with the specified tunnel, up to 32 characters.

### *mda*

Clears all static tunnels terminated on the specified ISA.

### *saved-key*

Clears the saved IKE and ESP keys for the specified tunnel.

### *esa-vm*

Displays the ID of the configured ESA and ESA VM.

### Values

esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.47 trap-suppress

```
trap-suppress
```

## Syntax

```
trap-suppress number-of-traps time-interval
```

## Context

[\[Tree\]](#) (tools>perform>router>mpls trap-suppress)

## Full Context

```
tools perform router mpls trap-suppress
```

## Description

This command modifies thresholds for trap suppression. The *time-interval* parameter is used to suppress traps after a certain number of traps have been raised within the *time-interval* period of time. By executing this command, there will be no more than *number-of-traps* within *time-interval*.

## Parameters

### *number-of-traps*

Specifies to the number of traps raised within a period of time before suppression occurs.

**Values** 100 to 1000, in multiples of 100

### *time-interval*

Specifies the period of time before trap-suppression can occur, depending upon the number of traps received in that period of time.

**Values** 1 to 300

## Platforms

All

## 23.48 trust-anchor-profile

### trust-anchor-profile

## Syntax

**trust-anchor-profile** [*trust-anchor-profile*] **association**

**trust-anchor-profile** [*trust-anchor-profile*]

## Context

[\[Tree\]](#) (show ipsec trust-anchor-profile)

## Full Context

show ipsec trust-anchor-profile

## Description

This command displays trust anchor profile information.

## Parameters

### *trust-anchor-profile*

Specifies the trust anchor profile name up to 32 characters in length.

### **association**

Displays information for which this trust anchor profile is associated.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of the **show ipsec trust-anchor-profile** command.

### Output Example

```
*A:Dut-A# show ipsec trust-anchor-profile
=====
Trust Anchor Profile Information
=====
Name                               CA Profiles Down
-----
CA0wCMPv2                           0
CA1wCMPv2                           0
CA2wCMPv2                           0
CA3wCMPv2                           0
CA4wCMPv2                           0
CA5wCMPv2                           0
CA6wCMPv2                           0
CA7wCMPv2                           0
CA8wCMPv2                           0
CA9wCMPv2                           0
CA10wCMPv2                          0
=====
*A:Dut-A#

*A:Dut-A# show ipsec trust-anchor-profile
=====
Trust Anchor CA-profile List
=====
CA Profile                          Admin/Oper State
-----
CA6                                  up/up
CMPv2                               up/up
=====
*A:Dut-A#
```

## trust-anchor-profile

### Syntax

**trust-anchor-profile** [*trust-anchor-profile*]

**trust-anchor-profile** *trust-anchor-profile* **association**

### Context

[\[Tree\]](#) (show system security tls trust-anchor-profile)

### Full Context

show system security tls trust-anchor-profile

## Description

This command displays information about server and client profiles that are using the specified TLS trust anchor profile.

## Parameters

### *trust-anchor-profile*

Specifies the trust anchor profile, up to 32 characters maximum.

## Platforms

All

## Output

The following output is an example of trust anchor profile information.

### Output Example

```
*A:Dut-C> show system security tls trust-anchor-profile
=====
Trust Anchor Profile Information
=====
Name                               CA Profiles Down
-----
tap                                 0
tap-alt1                           0
tap-alt2                           0
tap-empty                          0
=====

*A:Dut-C> show system security tls trust-anchor-profile "tap"
=====
CA-profile List for Trust Anchor "tap"
=====
CA Profile Name                    AdminState    OperState
-----
chainA_l1                          up            up
revChainA_l1                       up            up
=====
*A:Dut-C>show>tls#
```

## 23.49 ts-list

### ts-list

## Syntax

**ts-list** [*list-name*]

**ts-list** *list-name* **association**

**ts-list** *list-name* **local-entry** [1 to 32]

**ts-list** *list-name* **remote-entry** [1 to 32]

**ts-list** *list-name* {**local** | **remote**}

## Context

**[Tree]** (show>ipsec ts-list)

## Full Context

show ipsec ts-list

## Description

This command displays IPsec traffic-selector list (TS-list) information.

Entering this command without a parameter will list all configured TS-lists.

Entering this command with the **association** parameter will list all IPsec gateways that use the specified TS-list.

Entering this command with the **local** or **local-entry** parameter will list all or specified local entries of the specified TS-list.

Entering this command with the **remote** or **remote-entry** parameter will list all or specified remote entries of the specified TS-list.

## Parameters

### ***list-name***

The traffic-selector list name.

### **association**

Displays all associations of the TS-list.

### **local-entry** [1 to 32]

The entry ID of a local entry.

### **remote-entry** [1 to 32]

The entry ID of a remote entry.

### **local**

Displays all local entries.

### **remote**

Displays all remote entries.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of TS-list information.

### Output Example

```
show ipsec ts-list
=====
Traffic Selector List
```

```
=====
TS-List
-----
fullts
=====
*A:vsim-02-cpm# show ipsec ts-list "fullts"
=====
TS-List "fullts" Local Entries Information
=====
Entry ID      : 1
Status        : Invalid
Protocol ID   : Not Specified
Protocol Port Range: Not Specified
Prefix/Len    : 10.10.10.1/32
-----
Entry ID      : 2
Status        : Valid
Protocol ID   : tcp
Protocol Port Range: 80 - 80
Prefix/Len    : 10.10.10.2/32
-----
No. of entries: 2
=====
TS-List "fullts" Remote Entries Information
=====
Entry ID      : 1
Status        : Valid
Protocol ID   : tcp
Protocol Port Range: any
Prefix/Len    : 0.0.0.0/0
-----
No. of entries: 1
=====
```

## 23.50 tunnel

### tunnel

#### Syntax

```
tunnel [statistics] [detail] [peer ip-address] [state tunnel-state] [remote-tunnel-id remote-tunnel-id]
[group group-name] [assignment assignment-id] [local-name local-host-name] [remote-name
remote-host-name] [radius-accounting-policy policy-name] [blacklist-state bl-state] [failover-state
fo-state] [recovery-state recovery-state] [recovery-method { mcs | recovery-tunnel}] [track-srrp
srrp-instance] [control-msg-behavior behavior] [transport-type { ip | udp}]
```

```
tunnel [statistics] [detail] [peer ip-address] [state tunnel-state] [remote-connection-id remote-connection-id]
[group group-name] [assignment assignment-id] [local-name local-host-name] [remote-name remote-host-name]
[radius-accounting-policy policy-name] [blacklist-state bl-state] [failover-state fo-state] [recovery-state
recovery-state] [recovery-method { mcs | recovery-tunnel}] [track-srrp srrp-instance] [control-msg-behavior
behavior] [transport-type { ip | udp}]
```

```
tunnel tunnel-id tunnel-id [statistics] [detail]
```

```
tunnel connection-id connection-id [statistics] [detail]
```



## Context

[\[Tree\]](#) (show>router>l2tp tunnel)

## Full Context

show router l2tp tunnel

## Description

This command displays L2TP tunnel operational information.

## Parameters

### statistics

Displays L2TP tunnel statistics.

### detail

Displays detailed L2TP tunnel information.

### ip-address

Displays information for the specified peer IP address.

**Values** The following values apply to the 7750 SR:

ipv4-address a.b.c.d (host bits must be 0)

ipv6-address x:x:x:x:x:x:x[-interface]

x:x:x:x:x:d.d.d.d[-interface]

x: [0 to FFFF]H

d: [0 to 255]D

interface: 32 characters maximum, mandatory for link local addresses

**Values** The following values apply to the 7450 ESS:

ipv4-address: a.b.c.d (host bits must be 0)

### tunnel-state

Displays the operational state of the L2TP session.

**Values** closed, closed-by-peer, draining, drained, established, established-idle, idle, wait-reply, wait-conn

### remote-tunnel-id

Displays information for the specified remote tunnel ID.

### group-name

Displays L2TP tunnel information for the specified tunnel group.

### assignment-id

Specifies a string that distinguishes this Layer Two Tunneling Protocol tunnel.

***local-host-name***

Specifies a local host name used by this system.

***remote-host-name***

Specifies a remote host name used by this system.

***policy-name***

Displays the RADIUS accounting policy.

***bl-state***

Displays the denylist state of the L2TP session.

***fo-state***

Displays the failover state of the L2TP session.

***recovery-state***

Displays the recovery state of the L2TP session.

***recovery-method***

Displays the recovery method of the L2TP session.

***srrp-instance***

Specifies the SRRP instance identification.

**Values** 0 to 4294967295

***behavior***

Specifies the control message behavior.

**Values** handle, forward-to-mcs-peer

***transport-type***

Specifies that IP or UDP should be used as the transport type for the L2TP session.

**Values** ip, udp

***remote-connection-id***

Displays information for the specified remote connection ID.

***tunnel-id***

Displays information for the specified ID of a L2TP tunnel. In L2TP version 2, it is the 16-bit tunnel ID.

**Values** 1 to 65535

***connection-id***

Specifies the identification number for a Layer Two Tunneling Protocol connection.

**Values** 1 to 429496729

**Platforms**

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of L2TP tunnel operational information.

### Output Example

```
*A:Dut-C# show router l2tp tunnel
=====
Conn ID          Loc-Tu-ID Rem-Tu-ID State          Ses Active
Group           Assignment                               Ses Total
-----
143523840       2190      17525    established     2
  ispl.group-2
  ispl.tunnel-3
236912640       3615      58919    closedByPeer    0
  ispl.group-2
  ispl.tunnel-2
379387904       5789      4233     established     1
  ispl.group-1
  ispl.tunnel-1
658178048       10043     33762    draining        3
  ispl.group-2
  ispl.tunnel-2
-----
No. of tunnels: 4
=====
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel state closed-by-peer detail
=====
L2TP Tunnel Status
=====
Connection ID : 236912640
State         : closedByPeer
IP            : 10.20.1.3
Peer IP       : 10.10.20.100
Name          : lacl.wholesaler.com
Remote Name   : lns2.retailer1.net
Assignment ID : ispl.tunnel-2
Group Name    : ispl.group-2
Error Message : Goodbye!

Tunnel ID      : 3615
UDP Port       : 1701
Preference     : 100
Hello Interval (s): infinite
Idle T0 (s)    : 60
Max Retr Estab : 5
Session Limit  : 1000
Transport Type : udpIp
Time Started   : 04/17/2009 18:41:03
Time Established : 04/17/2009 18:41:03
Stop CCN Result : generalReq

Remote Conn ID : 3861315584
Remote Tunnel ID : 58919
Remote UDP Port : 1701

Destruct T0 (s) : 7200
Max Retr Not Estab: 5
AVP Hiding      : never
Challenge       : never
Time Idle       : 04/17/2009 18:43:20
Time Closed     : 04/17/2009 18:43:20
General Error   : noError
-----
No. of tunnels: 1
=====
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel state established
=====
```

```

Conn ID          Loc-Tu-ID Rem-Tu-ID State          Ses Active
  Group                               Ses Total
  Assignment
-----
143523840        2190      17525   established    2
  ispl.group-2                               3
  ispl.tunnel-3
379387904        5789      4233    established    1
  ispl.group-1                               1
  ispl.tunnel-1
-----
No. of tunnels: 2
=====
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel tunnel-id 2190 statistics
=====
L2TP Tunnel Statistics
=====
Connection ID: 143523840
-----
              Attempts   Failed                Active   Total
-----
Sessions      3           0                   2         3
-----
              Rx
-----
Ctrl Packets  47
Ctrl Octets   954
Error Packets 0
              Tx
-----
Ctrl Packets  47
Ctrl Octets   1438
Error Packets 0
-----
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel connection-id 143523840 statistics
=====
L2TP Tunnel Statistics
=====
Connection ID: 143523840
-----
              Attempts   Failed                Active   Total
-----
Sessions      3           0                   2         3
-----
              Rx
-----
Ctrl Packets  48
Ctrl Octets   974
Error Packets 0
              Tx
-----
Ctrl Packets  48
Ctrl Octets   1450
Error Packets 0
-----
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel remote-tunnel-id 17525 detail
=====
L2TP Tunnel Status
=====
Connection ID : 143523840
State         : established
IP            : 10.20.1.3
Peer IP       : 10.10.20.101
    
```

```
Name : lac1.wholesaler.com
Remote Name : lns3.retailer1.net
Assignment ID : ispl.tunnel-3
Group Name : ispl.group-2
Error Message : N/A

Tunnel ID : 2190
UDP Port : 1701
Preference : 100
Hello Interval (s): 300
Idle T0 (s) : 0
Max Retr Estab : 5
Session Limit : 1000
Transport Type : udpIp
Time Started : 04/17/2009 18:41:14
Time Established : 04/17/2009 18:41:14
Stop CCN Result : noError

Remote Conn ID : 1148518400
Remote Tunnel ID : 17525
Remote UDP Port : 1701

Destruct T0 (s) : 7200
Max Retr Not Estab: 5
AVP Hiding : never
Challenge : never
Time Idle : N/A
Time Closed : N/A
General Error : noError

-----
No. of tunnels: 1
=====
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel remote-connection-id 1148518400 statistics
=====
L2TP Tunnel Statistics
=====
Connection ID: 143523840
-----
              Attempts   Failed                Active   Total
-----
Sessions      3             0                2         3
-----
              Rx
-----
Ctrl Packets  50
Ctrl Octets   1014
Error Packets 0
              Tx
-----
Ctrl Packets  50
Ctrl Octets   1474
Error Packets 0
-----
No. of tunnels: 1
=====
*A:Dut-C#

*A:Dut-C# show router l2tp tunnel peer 10.10.20.100 state closed-by-peer detail
=====
L2TP Tunnel Status
=====
Connection ID : 236912640
State : closedByPeer
IP : 10.20.1.3
Peer IP : 10.10.20.100
Name : lac1.wholesaler.com
Remote Name : lns2.retailer1.net
Assignment ID : ispl.tunnel-2
Group Name : ispl.group-2
Error Message : Goodbye!

Tunnel ID : 3615
UDP Port : 1701
Preference : 100

Remote Conn ID : 3861315584
Remote Tunnel ID : 58919
Remote UDP Port : 1701
```

```

Hello Interval (s): infinite
Idle T0 (s)       : 60                Destruct T0 (s)   : 7200
Max Retr Estab   : 5                  Max Retr Not Estab: 5
Session Limit    : 1000               AVP Hiding        : never
Transport Type   : udpIp              Challenge         : never
Time Started     : 04/17/2009 18:41:03 Time Idle         : 04/17/2009 18:43:20
Time Established : 04/17/2009 18:41:03 Time Closed       : 04/17/2009 18:43:20
Stop CCN Result  : generalReq         General Error      : noError
    
```

-----  
 No. of tunnels: 1  
 =====

\*A:Dut-C#

\*A:Dut-C# show router l2tp tunnel group ispl.group-2

```

=====
Conn ID          Loc-Tu-ID Rem-Tu-ID State          Ses Active
  Group                               Ses Total
  Assignment
-----
143523840        2190     17525   established          2
  ispl.group-2                                     3
  ispl.tunnel-3
236912640        3615     58919   closedByPeer         0
  ispl.group-2                                     2
  ispl.tunnel-2
658178048        10043    33762   draining             3
  ispl.group-2                                     3
  ispl.tunnel-2
    
```

-----  
 No. of tunnels: 3  
 =====

\*A:Dut-C#

\*A:Dut-C# show router l2tp tunnel assignment-id ispl.tunnel-3 state established statistics

=====

L2TP Tunnel Statistics

=====

Connection ID: 143523840

```

-----
                Attempts  Failed                Active  Total
-----
Sessions        3          0                2        3
-----
                Rx                Tx
-----
Ctrl Packets    66                66
Ctrl Octets     1310             1690
Error Packets   0                0
    
```

-----  
 No. of tunnels: 1  
 =====

\*A:Dut-C#

\*A:Dut-C# show router l2tp tunnel local-name lac1.wholesaler.com remote-name lns2.retailer1.net state draining

```

=====
Conn ID          Loc-Tu-ID Rem-Tu-ID State          Ses Active
  Group                               Ses Total
  Assignment
-----
    
```

```

658178048          10043    33762    draining        3
  ispl.group-2          3
  ispl.tunnel-2
-----
No. of tunnels: 1
=====
*A:Dut-C#

*A:Fden-Dut2-BSA2# show router l2tp tunnel connection-id 600375296 statistics
=====
L2TP Tunnel Statistics
=====

Connection ID: 600375296

-----
                Attempts    Failed                                Active    Total
-----
Sessions        1            0                                1         1
-----

                Rx                                Tx
-----
Ctrl Packets    6                                6
Ctrl Octets     553                             292
Error Packets   0                                0
-----

                Accepted    Duplicate                                Out-Of-Wnd
-----
Fsm Messages    4            0                                0
-----

                Unsent Max Unsent Cur                                Ack Max    Ack Cur
-----
Q Length        1            0                                1         0
-----

Window Size Cur                                : 4
acceptedMsgType
  StartControlConnectionRequest                : 1
  StartControlConnectionConnected              : 1
  IncomingCallRequest                          : 1
  IncomingCallConnected                        : 1
  ZeroLengthBody                               : 3
originalTransmittedMsgType
  StartControlConnectionReply                  : 1
  Hello                                        : 2
  IncomingCallReply                            : 1
  ZeroLengthBody                               : 3

last cleared time                                : N/A
=====
    
```

**On LAC (primary node after switchover)**

```
=====
```

```
L2TP Tunnel Status
=====
Connection ID: 11206656
State       : established
IP         : 10.124.0.9
UDP        : 1701
Peer IP    : 10.124.0.3
Peer UDP   : 1701
Tx dst-IP  : 10.124.0.3
Tx dst-UDP : 1701
Rx src-IP  : 10.124.0.3
Rx src-UDP : 1701
Name       : mc-lac
Remote Name : mc-lns
Assignment ID: t1
Group Name : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

Tunnel ID      : 171
Preference     : 50
Hello Interval (s): infinite
Idle T0 (s)   : infinite
Max Retr Estab : 5
Session Limit  : 32767
Transport Type : udpIp
Time Started   : 02/19/2015 13:00:36
Time Established : 02/19/2015 13:00:36
Stop CCN Result : noError
Blacklist-state : not-blacklisted
Set Dont Fragment : true

Remote Conn ID : 429260800
Remote Tunnel ID : 6550
Receive Window  : 64
Destruct T0 (s) : 60
Max Retr Not Estab: 5
AVP Hiding     : never
Challenge      : never
Time Idle      : N/A
Time Closed    : N/A
General Error   : noError

Failover
State       : recoverable
Recovery Conn ID : N/A
Recovery state : not-applicable
Recovered Conn ID : N/A
Recovery method : mcs
Track SRRP    : 124
Ctrl msg behavior : handle
-----

No. of tunnels: 1
=====
```

### On LAC (secondary node after switchover)

```
show router l2tp tunnel detail
=====
L2TP Tunnel Status
=====
Connection ID: 11206656
State       : draining
IP         : 10.124.0.9
UDP        : 1701
Peer IP    : 10.124.0.3
Peer UDP   : 1701
Tx dst-IP  : 10.124.0.3
```



```
Tx dst-UDP : 1701
Rx src-IP  : 10.124.0.3
Rx src-UDP : 1701
Name       : mc-lac
Remote Name : mc-lns
Assignment ID: t1
Group Name : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

Tunnel ID      : 171
Preference     : 50
Hello Interval (s) : infinite
Idle T0 (s)    : infinite
Max Retr Estab : 5
Session Limit  : 32767
Transport Type : udpIp
Time Started   : 02/19/2015 13:00:36
Time Established : 02/19/2015 13:00:36
Stop CCN Result : noError
Blacklist-state : not-blacklisted
Set Dont Fragment : true

Remote Conn ID : 429260800
Remote Tunnel ID : 6550
Receive Window : 64
Destruct T0 (s) : 60
Max Retr Not Estab: 5
AVP Hiding     : never
Challenge      : never
Time Idle      : N/A
Time Closed    : N/A
General Error  : noError

Failover
State          : recoverable
Recovery Conn ID : N/A
Recovery state : not-applicable
Recovered Conn ID : N/A
Recovery method : mcs
Track SRRP     : 124
Ctrl msg behavior : forward-to-mcs-peer
-----

No. of tunnels: 1
=====
```

### On LNS after switchover

```
show router l2tp tunnel detail
=====
L2TP Tunnel Status
=====

Connection ID: 429260800
State        : established
IP           : 10.124.0.3
UDP          : 1701
Peer IP      : 10.124.0.9
Peer UDP     : 1701
Tx dst-IP    : 10.124.0.9
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.9
Rx src-UDP   : 1701
Name         : mc-lns
Remote Name  : mc-lac
Assignment ID: t1
Group Name   : mc-lns
Acct. Policy : N/A
Error Message: N/A

Tunnel ID      : 6550
Remote Conn ID : 11206656
Remote Tunnel ID : 171
```

```
Preference      : 50                Receive Window   : 64
Hello Interval (s) : 300
Idle T0 (s)      : infinite
Max Retr Estab  : 5                Destruct T0 (s) : 60
Session Limit   : 32767           Max Retr Not Estab: 5
Transport Type  : udpIp           AVP Hiding       : never
Time Started    : 02/19/2015 13:00:36 Challenge        : never
Time Established : 02/19/2015 13:00:36 Time Idle        : N/A
Stop CCN Result : noError         Time Closed      : N/A
Blacklist-state : not-blacklisted General Error     : noError
Set Dont Fragment : true

Failover
State          : not-recoverable
Recovery Conn ID : N/A
Recovery state  : not-applicable
Recovered Conn ID : N/A
Recovery method : mcs
Track SRRP     : (Not specified)
Ctrl msg behavior : handle
-----
No. of tunnels: 1
=====
```

**On LAC (primary node after switchover; 7536640 is the recovered tunnel, 1865089024 is the recovery tunnel)**

```
=====
L2TP Tunnel Status
=====
Connection ID: 7536640
State          : established
IP             : 10.124.0.9
UDP           : 1701
Peer IP       : 10.124.0.3
Peer UDP      : 1701
Tx dst-IP    : 10.124.0.3
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.3
Rx src-UDP   : 1701
Name         : mc-lac
Remote Name  : mc-lns
Assignment ID: t1
Group Name   : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

Tunnel ID      : 115                Remote Conn ID   : 433324032
Preference     : 50                Remote Tunnel ID : 6612
Hello Interval (s) : infinite      Receive Window   : 64
Idle T0 (s)    : infinite          Destruct T0 (s) : 60
Max Retr Estab : 5                Max Retr Not Estab: 5
Session Limit  : 32767           AVP Hiding       : never
Transport Type : udpIp           Challenge        : never
Time Started   : 02/19/2015 13:07:53 Time Idle        : N/A
Time Established : 02/19/2015 13:07:53 Time Closed      : N/A
Stop CCN Result : noError         General Error     : noError
Blacklist-state : not-blacklisted
Set Dont Fragment : true

Failover
State          : recoverable
```

```
Recovery Conn ID : 1865089024
Recovery state   : not-applicable
Recovered Conn ID : N/A
Recovery method  : recovery-tunnel
Track SRRP      : 124
Ctrl msg behavior : handle
-----

Connection ID: 1865089024
State          : closed
IP             : 10.124.0.9
UDP           : 1701
Peer IP       : 10.124.0.3
Peer UDP      : 1701
Tx dst-IP     : 10.124.0.3
Tx dst-UDP    : 1701
Rx src-IP     : 10.124.0.3
Rx src-UDP    : 1701
Name          : mc-lac
Remote Name   : mc-lns
Assignment ID : t1
Group Name    : mc-lac
Acct. Policy  : l2tp-base
Error Message : N/A

Tunnel ID      : 28459
Preference     : 50
Hello Interval (s) : infinite
Idle T0 (s)    : 60
Max Retr Estab : 5
Session Limit  : 32767
Transport Type : udpIp
Time Started   : 02/19/2015 13:12:05
Time Established : 02/19/2015 13:12:05
13:12:05
Stop CCN Result : generalReq
Blacklist-state : not-blacklisted
Set Dont Fragment : true

Remote Conn ID : 1169424384
Remote Tunnel ID : 17844
Receive Window  : 64
Destruct T0 (s) : 60
Max Retr Not Estab : 5
AVP Hiding     : never
Challenge      : never
Time Idle      : N/A
Time Closed    : 02/19/2015
13:12:05
General Error   : noError

Failover
State          : not-applicable
Recovery Conn ID : N/A
Recovery state   : recovery-tunnel
Recovered Conn ID : 7536640
Recovery method  : default
Track SRRP      : 124
Ctrl msg behavior : handle
-----

No. of tunnels: 2
=====
```

### On LAC (secondary node after switchover)

```
=====
L2TP Tunnel Status
=====

Connection ID: 7536640
State          : draining
IP             : 10.124.0.9
UDP           : 1701
Peer IP       : 10.124.0.3
```

```
Peer UDP      : 1701
Tx dst-IP    : 10.124.0.3
Tx dst-UDP   : 1701
Rx src-IP    : 10.124.0.3
Rx src-UDP   : 1701
Name         : mc-lac
Remote Name  : mc-lns
Assignment ID: t1
Group Name   : mc-lac
Acct. Policy : l2tp-base
Error Message: N/A

Tunnel ID      : 115
Preference     : 50
Hello Interval (s): infinite
Idle T0 (s)    : infinite
Max Retr Estab : 5
Session Limit  : 32767
Transport Type : udpIp
Time Started   : 02/19/2015 13:07:53
Time Established : 02/19/2015 13:07:53
Stop CCN Result : noError
Blacklist-state : not-blacklisted
Set Dont Fragment : true

Remote Conn ID : 433324032
Remote Tunnel ID : 6612
Receive Window  : 64
Destruct T0 (s) : 60
Max Retr Not Estab: 5
AVP Hiding     : never
Challenge      : never
Time Idle      : N/A
Time Closed    : N/A
General Error   : noError

Failover
State          : recoverable
Recovery Conn ID : N/A
Recovery state  : not-applicable
Recovered Conn ID : N/A
Recovery method : recovery-tunnel
Track SRRP     : 124
Ctrl msg behavior : forward-to-mcs-peer
-----
No. of tunnels: 1
=====
```

**On LNS after switchover (433324032 is the recovered tunnel, 1169424384 is the recovery tunnel)**

```
=====
L2TP Tunnel Status
=====

Connection ID: 433324032
State        : established
IP           : 10.124.0.3
UDP          : 1701
Peer IP     : 10.124.0.9
Peer UDP    : 1701
Tx dst-IP   : 10.124.0.9
Tx dst-UDP  : 1701
Rx src-IP   : 10.124.0.9
Rx src-UDP  : 1701
Name        : mc-lns
Remote Name : mc-lac
Assignment ID: t1
Group Name  : mc-lns
Acct. Policy : N/A
Error Message: N/A

Tunnel ID      : 6612
Remote Conn ID : 7536640
Remote Tunnel ID : 115
```

```
Preference      : 50                Receive Window   : 64
Hello Interval (s) : 300
Idle TO (s)      : infinite
Max Retr Estab  : 5
Session Limit   : 32767
Transport Type  : udpIp
Time Started    : 02/19/2015 13:07:53
Time Established : 02/19/2015 13:07:53
Stop CCN Result : noError
Blacklist-state : not-blacklisted
Set Dont Fragment : true

Failover
State          : not-recoverable
Recovery Conn ID : 1169424384
Recovery state  : not-applicable
Recovered Conn ID : N/A
Recovery method : recovery-tunnel
Track SRRP     : (Not specified)
Ctrl msg behavior : handle
-----

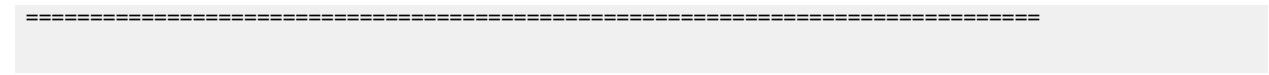
Connection ID: 1169424384
State      : closed
IP         : 10.124.0.3
UDP        : 1701
Peer IP    : 10.124.0.9
Peer UDP   : 1701
Tx dst-IP  : 10.124.0.9
Tx dst-UDP : 1701
Rx src-IP  : 10.124.0.9
Rx src-UDP : 1701
Name       : mc-lns
Remote Name : mc-lac
Assignment ID: t1
Group Name  : mc-lns
Acct. Policy : N/A
Error Message: N/A

Tunnel ID      : 17844
Preference     : 50
Hello Interval (s) : infinite
Idle TO (s)    : 60
Max Retr Estab : 5
Session Limit  : 32767
Transport Type : udpIp
Time Started   : 02/19/2015 13:12:05
Time Established : 02/19/2015 13:12:05
13:12:05
Stop CCN Result : generalReq
Blacklist-state : not-blacklisted
Set Dont Fragment : true

Failover
State          : not-applicable
Recovery Conn ID : N/A
Recovery state  : recovery-tunnel
Recovered Conn ID : 433324032
Recovery method : default
Track SRRP     : (Not specified)
Ctrl msg behavior : handle
-----

Remote Conn ID : 1865089024
Remote Tunnel ID : 28459
Receive Window   : 64
Destruct TO (s) : 60
Max Retr Not Estab: 5
AVP Hiding      : never
Challenge       : never
Time Idle       : N/A
Time Closed     : 02/19/2015
General Error    : noError

No. of tunnels: 2
```



## tunnel

### Syntax

**tunnel** *tunnel-name*

### Context

[\[Tree\]](#) (clear>router>l2tp>group tunnel)

### Full Context

clear router l2tp group tunnel

### Description

This command clears L2TP tunnel data.

### Parameters

***tunnel-name***

Clears L2TP tunnel data associated with the specified tunnel, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## tunnel

### Syntax

**tunnel** *connection-id*

### Context

[\[Tree\]](#) (clear>router>l2tp tunnel)

### Full Context

clear router l2tp tunnel

### Description

This command clears L2TP data.

### Parameters

***connection-id***

Specifies the L2TP tunnel connection ID.

**Values** 1 to 4294967295

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

tunnel

### Syntax

**tunnel** *tunnel-name*

### Context

[\[Tree\]](#) (tools>perform>router>l2tp tunnel)

[\[Tree\]](#) (tools>perform>router>l2tp>group tunnel)

### Full Context

tools perform router l2tp tunnel

tools perform router l2tp group tunnel

### Description

Commands in this context configure performance tools for a specified L2TP tunnel.

### Parameters

***tunnel-name***

Specifies the L2TP tunnel name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

tunnel

### Syntax

**tunnel** *ipsec-tunnel-name*

**tunnel**

**tunnel count**

**tunnel state** *state*

### Context

[\[Tree\]](#) (show>ipsec tunnel)

## Full Context

show ipsec tunnel

## Description

This command displays IPsec tunnel information.

## Parameters

### *ipsec-tunnel-name*

Specifies the name of the tunnel up to 32 characters.

### *state*

Specifies one of up, down, or limited

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## tunnel

## Syntax

**tunnel** *ipsec-tunnel-name* [**temp-mtu**]

**tunnel** *esa-vm* *esa-id/vm-id* [**saved-key**]

**tunnel** *isa* *mda* [**saved-key**]

**tunnel** *ipsec-tunnel-name* [**saved-key**]

**tunnel** *ipsec-tunnel-name* [**stats**] [**saved-key**]

## Context

[\[Tree\]](#) (clear>ipsec tunnel)

## Full Context

clear ipsec tunnel

## Description

This command clears static IPsec tunnel states.

## Parameters

### *ipsec-tunnel-name*

Specifies the name of the IPsec tunnel, up to 32 characters. If the **stats**, **saved-key** or **temp-mdu** parameters are not specified, the IPsec tunnel is cleared.

### *saved-key*

Clears the saved IKE and ESP keys for the specified tunnel.

### *temp-mtu*

Clears the temporary MTU from MTU propagation for the specified tunnel.



### **stats**

Clears the statistics counter for the specified tunnel.

### **mda**

Clears all static tunnels terminated on the specified ISA.

### **esa-vm**

Displays the ID of the configured ESA and ESA VM.

Values		
esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

## **Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## **tunnel**

### **Syntax**

**tunnel** [**type** {*rx* | *tx*}] [**prefix** *ip-address*] [**tunnel-id** *tunnel-id*]

**tunnel** [**prefix** *ip-address*] [**tunnel-id** *tunnel-id*] **leaf**

### **Context**

[\[Tree\]](#) (show>router>bier tunnel)

### **Full Context**

show router bier tunnel

### **Description**

This command shows the BIER tunnel table used for MVPN.

### **Parameters**

#### ***ip-address***

Specifies a prefix in IP address format.

#### ***tunnel-id***

Specifies a tunnel identifier.

**Values** 0 to 4294967295

#### **leaf**

Specifies that the tunnel leaves are displayed.

## Platforms

All

## Output

The following output is an example of a BIER tunnel table. [Table 606: BIER Tunnel Fields](#) provides BIER tunnel table descriptions.

### Output Example

```
*A:Dut-A# show router bier tunnel prefix 10.20.1.3
=====
BIER Tunnels
=====
Tunnel-id      Type      Oper      No. Of Leaves
BFR Prefix    Bfr-ID    Mpls Label Sub-domain
-----
73941          rx        In service 0
10.20.1.3     767      1048475   4
73942          rx        In service 0
10.20.1.3     767      1048473   1
73943          rx        In service 0
10.20.1.3     767      1048573   1
73944          rx        In service 0
10.20.1.3     3        1048474   0
73945          rx        In service 0
10.20.1.3     3        1048471   3
73946          rx        In service 0
10.20.1.3     767      1048470   4
73947          rx        In service 0
10.20.1.3     3        1048574   0
73948          rx        In service 0
10.20.1.3     1593    1048472   2
73949          rx        In service 0
10.20.1.3     3        1048477   3
73950          rx        In service 0
10.20.1.3     1593    1048480   2
73951          rx        In service 0
10.20.1.3     767      1048476   4

73952          rx        In service 0
10.20.1.3     3        1048478   3
73955          rx        In service 0
10.20.1.3     1593    1048481   2
73956          rx        In service 0
10.20.1.3     767      1048485   1
73957          rx        In service 0
10.20.1.3     3        1048490   0
=====
BIER Tunnel entries : 15
=====
```

Table 606: BIER Tunnel Fields

Label	Description
Tunnel-id	The tunnel ID allocated for this tunnel
Type	The tunnel type, indicated if it is a terminating tunnel or an originating one

Label	Description
Oper	The operational status of the tunnel
No. of Leaves	The number of leaves associated with the tunnel if the tunnel type is tx or BFIR. This field represents the number of leafs associated with it.  If the tunnel type is rx or BFER, this field is zero.
BFR Prefix	The BFR prefix associated with the root of the tunnel
Bfr-ID	The BFR ID associated with the root of the tunnel
Mpls Label	If the tunnel type is tx or BFIR, this field represents the egress VPRN label allocated.  If the tunnel type is rx or BFER, this field represents the ingress VPRN label allocated by the root.
Sub-domain	The sub-domain associated with the root of the tunnel

## tunnel

### Syntax

**tunnel** [tunnel-id tunnel-id] [ type { rx | tx}]

**tunnel** [tunnel-id tunnel-id] leaf [root-addr root-addr] [tree-id tree-id]

### Context

[Tree] (show>router>p2mp-sr-tree tunnel)

### Full Context

show router p2mp-sr-tree tunnel

### Description

This command displays details about the P2MP tunnel.

### Parameters

#### *tunnel-id*

Specifies a tunnel identifier.

**Values** 0 to 4294967295

#### *type*

Specifies a tunnel type.

**Values** rx, tx

**root-addr**

Displays the root address.

**Values** a.b.c.d

**tree-id**

Specifies a tree identifier.

**Values** 0 to 4294967295

**leaf**

Specifies that the tunnel leaves are displayed.

**Platforms**

All

**Output**

The following output is an example of a P2MP SR tree tunnel table. [Table 607: P2MP SR Tree Tunnel Fields](#) provides the P2MP SR tree tunnel table descriptions.

**Output Example**

```
A:swsim100>file cf3:\ # show router p2mp-sr-tree tunnel
=====
Replication Segments
=====
Tunnel-Id      TreeId  Type   Oper      Num Leaves
RootAddr                               SvcId
-----
73729          9000   tx     inService  1
100.0.0.100    70
73730          9000   rx     inService  0
100.0.0.103    70
-----
Total P2MP-SR-TUNNELS Tunnels : 2
=====
```

Table 607: P2MP SR Tree Tunnel Fields

Label	Description
Tunnel-Id	The tunnel ID allocated for this tunnel
Type	The tunnel type, indicated if it is a terminating tunnel or an originating one
Oper	The operational status of the tunnel
Num Leaves	The number of leaves associated with the tunnel
Treeld	The tree ID associated with the root of the tunnel
RootAddr	The address associated with the root of the tunnel

Label	Description
SvcId	The service identifier

## tunnel

### Syntax

**tunnel** [*in-label in-label*]

### Context

**[Tree]** (tools>dump>router>sr tunnel)

### Full Context

tools dump router segment-routing tunnel

### Description

This command displays segment routing tunnel information.

### Parameters

***in-label***

Specifies the filter to match against the ingress label.

**Values** 0 to 4294967295

### Platforms

All

### Output

The following outputs are examples of segment routing tunnel operational information, and the following table describes the output fields.

### Output Example

```
*A:Dut-F# tools dump router segment-routing tunnel
=====
Legend: (B) - Backup Next-hop for Fast Re-Route
        (D) - Duplicate
=====
Prefix
Sid-Type      Fwd-Type      In-Label  Prot-
Inst          Next Hop(s)   |
ID |                               Out-Label(s) Interface/Tunnel-
-----+-----+
10.0.33.3
Node          Orig/Transit  70000     OSPF-0
              10.0.36.3   40000     DUTF_TO
_DUTC.1.0
```

_DUTB.1.0	(B)10.0.26.2			30998	DUTF_TO
10.0.44.4					
Node	Orig/Transit	70001	OSPF-0		
	10.0.26.2			30001	DUTF_TO
_DUTB.1.0	(B)10.0.56.5			60001	DUTF_TO
_DUTE.1.0					
10.0.55.5					
Node	Orig/Transit	70002	OSPF-0		
	10.0.56.5			60002	DUTF_TO
_DUTE.1.0	(B)10.0.26.2			30995	DUTF_TO
_DUTB.1.0					
Node	Terminating	70003	OSPF-0		
10.0.11.1					
Node	Orig/Transit	70004	OSPF-0		
	10.0.26.2			30004	DUTF_TO
_DUTB.1.0	(B)10.0.36.3			40004	DUTF_TO
_DUTC.1.0					
10.0.22.2					
Node	Orig/Transit	70005	OSPF-0		
	10.0.26.2			30005	DUTF_TO
_DUTB.1.0	(B)10.0.36.3			40004	DUTF_TO
_DUTC.1.0				20005	
10.20.1.3					
Node	Orig/Transit	70006	OSPF-0		
	10.0.36.3			40006	DUTF_TO
_DUTC.1.0	(B)10.0.26.2			30004	DUTF_TO
_DUTB.1.0				20006	
10.20.1.4					
Node	Orig/Transit	70007	OSPF-0		
	10.0.26.2			30007	DUTF_TO
_DUTB.1.0	(B)10.0.56.5			60007	DUTF_TO
_DUTE.1.0					
10.20.1.5					
Node	Orig/Transit	70008	OSPF-0		
	10.0.56.5			60008	DUTF_TO
_DUTE.1.0	(B)10.0.26.2			30001	DUTF_TO
_DUTB.1.0				50008	
Node	Terminating	70009	OSPF-0		
10.20.1.1					
Node	Orig/Transit	70010	OSPF-0		
	10.0.26.2			30010	DUTF_TO
_DUTB.1.0	(B)10.0.36.3			40010	DUTF_TO
_DUTC.1.0					
10.20.1.2					
Node	Orig/Transit	70011	OSPF-0		
	10.0.26.2			30011	DUTF_TO
_DUTB.1.0	(B)10.0.56.5			60001	DUTF_TO
_DUTE.1.0				50011	

Backup Node	Transit	70994	OSPF-0		
_DUTE.1.0	10.0.56.5			60994	DUTF_TO
Backup Node	Transit	70995	OSPF-0		
_DUTB.1.0	10.0.26.2			30995	DUTF_TO
Backup Node	Transit	70996	OSPF-0		
_DUTB.1.0	10.0.26.2			30005	DUTF_TO
Backup Node	Transit	70998	OSPF-0		
_DUTB.1.0	10.0.26.2			30998	DUTF_TO
Backup Node	Transit	70999	OSPF-0		
_DUTC.1.0	10.0.36.3			40999	DUTF_TO
Adjacency	Transit	262140	OSPF-0		
_DUTB.1.0	10.0.26.2			3	DUTF_TO
_DUTC.1.0	(B)10.0.36.3			40004	DUTF_TO
				20005	
Adjacency	Transit	262141	OSPF-0		
_DUTE.1.0	10.0.56.5			3	DUTF_TO
Adjacency	Transit	262142	OSPF-0		
_DUTC.1.0	10.0.36.3			3	DUTF_TO
Adjacency	Transit	262143	OSPF-0		
_DUTB.1.0	10.0.26.2			3	DUTF_TO
_DUTE.1.0	(B)10.0.56.5			60001	DUTF_TO
				50011	
*A:Dut-F#					
*A:Dut-A# tools dump router segment-routing tunnel					
=====					
Legend: (B) - Backup Next-hop for Fast Re-Route					
(D) Duplicate					
=====					
Prefix	Fwd-Type	In-Label	Prot-Inst	Out-Label(s)	Interface/
Sid-Type	Next Hop(s)				Tunnel-ID
-----					
Adjacency	Transit	262136	ISIS-0		
10.10.2.1	10.10.2.3			3	ip-
Adjacency	Transit	262137	ISIS-0		
10.10.2.1	10.10.2.3			3	ip-

Adjacency 10.10.1.1	Transit 10.10.1.2	262138	ISIS-0	3	ip-
Adjacency 10.10.1.1	Transit 10.10.1.2	262139	ISIS-0	3	ip-
Node 10.20.1.2	Terminating	474387	ISIS-0		
Node 10.10.1.1	Orig/Transit 10.10.1.2	474388	ISIS-0	474388	ip-
Node 10.10.2.1	Orig/Transit 10.10.2.3	474389	ISIS-0	474389	ip-
Node 10.10.2.1	Orig/Transit 10.10.1.2	475287	ISIS-0	475287	ip-
Node 10.10.1.1	Orig/Transit 10.10.2.3	475288	ISIS-0	475288	ip-
Node 10.10.2.1	Orig/Transit 10.10.1.2	475289	ISIS-0	475289	ip-

\*A:Dut-A#

```
*A:Dut-C# tools dump router segment-routing tunnel
```

Legend: (B) - Backup Next-hop for Fast Re-Route  
 (D) - Duplicate

Prefix	Sid-Type Inst	Fwd-Type Next Hop(s) Interface/Tunnel-ID	In-Label	Prot-	Out-
Adjacency 10.10.12.3	Transit 10.10.12.2	262129	ISIS-0	3	ip-
Adjacency 10.10.3.3	(B)10.10.3.2			3	ip-
Adjacency 10.10.12.3	Transit 10.10.12.2	262130	ISIS-0	3	ip-
Adjacency 10.10.3.3	(B)10.10.3.2			3	ip-
Adjacency 10.10.5.3	Transit 10.10.5.5	262133	ISIS-0	3	ip-
Adjacency 10.10.5.3	(B)10.10.12.2			474389	ip-



10.10.12.3				474390	
Adjacency	Transit	262134	ISIS-0		
10.10.5.3	10.10.5.5			3	ip-
10.10.12.3	(B)10.10.12.2			474389	ip-
				474390	
Adjacency	Transit	262135	ISIS-0		
10.10.3.3	10.10.3.2			3	ip-
10.10.12.3	(B)10.10.12.2			3	ip-
Adjacency	Transit	262136	ISIS-0		
10.10.3.3	10.10.3.2			3	ip-
10.10.12.3	(B)10.10.12.2			3	ip-
Adjacency	Transit	262137	ISIS-0		
10.10.2.3	10.10.2.1			3	ip-
Adjacency	Transit	262138	ISIS-0		
10.10.2.3	10.10.2.1			3	ip-
10.20.1.4	Node	Orig/Transit	474389	ISIS-0	
10.10.12.3	10.10.12.2			474389	ip-
10.10.5.3	(B)10.10.5.5			474389	ip-
10.20.1.5	Node	Orig/Transit	474390	ISIS-0	
10.10.5.3	10.10.5.5			474390	ip-
10.10.12.3	(B)10.10.12.2			474389	ip-
				474390	
10.20.1.6	Node	Orig/Transit	474391	ISIS-0	
10.10.5.3	10.10.5.5			474391	ip-
10.10.12.3	(B)10.10.12.2			474391	ip-
10.20.1.2	Node	Orig/Transit	474392	ISIS-0	
10.10.12.3	10.10.12.2			474392	ip-
10.10.3.3	(B)10.10.3.2			474392	ip-
Node	Terminating	474393	ISIS-0		
*A:Dut-C#					

```
*A:Dut-C# tools dump router segment-routing tunnel
=====
Legend: (B) - Backup Next-hop for Fast Re-Route
        (D) Duplicate
=====
```

Prefix Sid-Type	Fwd-Type Next Hop(s)	In-Label	Prot-Inst	Out-Label(s)	Interface/Tunnel-ID
Adjacency 10.10.12.3	Transit 10.10.12.2	262129	ISIS-0		3 ip-
10.10.3.3	(B)10.10.3.2				3 ip-
Adjacency 10.10.12.3	Transit 10.10.12.2	262130	ISIS-0		3 ip-
10.10.3.3	(B)10.10.3.2				3 ip-
Adjacency 10.10.5.3	Transit 10.10.5.5	262133	ISIS-0		3 ip-
10.10.12.3	(B)10.10.12.2				474389 ip-
					474390
Adjacency 10.10.5.3	Transit 10.10.5.5	262134	ISIS-0		3 ip-
10.10.12.3	(B)10.10.12.2				474389 ip-
					474390
Adjacency 10.10.3.3	Transit 10.10.3.2	262135	ISIS-0		3 ip-
10.10.12.3	(B)10.10.12.2				3 ip-
Adjacency 10.10.3.3	Transit 10.10.3.2	262136	ISIS-0		3 ip-
10.10.12.3	(B)10.10.12.2				3 ip-
Adjacency 10.10.2.3	Transit 10.10.2.1	262137	ISIS-0		3 ip-
Adjacency 10.10.2.3	Transit 10.10.2.1	262138	ISIS-0		3 ip-
10.20.1.4 Node	Orig/Transit 10.10.12.2	474389	ISIS-0		474389 ip-
10.10.12.3	(B)10.10.5.5				474389 ip-
10.10.5.3 10.20.1.5 Node	Orig/Transit 10.10.5.5	474390	ISIS-0		474390 ip-
10.10.5.3	(B)10.10.12.2				474389 ip-
10.10.12.3					474390
10.20.1.6 Node	Orig/Transit	474391	ISIS-0		

10.10.5.3	10.10.5.5			474391	ip-
10.10.12.3	(B)10.10.12.2			474391	ip-
10.20.1.2		Orig/Transit	474392	ISIS-0	
Node	10.10.12.2			474392	ip-
10.10.12.3	(B)10.10.3.2			474392	ip-
10.10.3.3					
Node	Terminating		474393	ISIS-0	
*A:Dut-C#					

```
*A:Dut-C>config$ /tools dump router segment-routing tunnel
=====Legend: (B)
- Backup Next-hop for Fast Re-Route
(D) - Duplicate
label stack is ordered from top-most to bottom-most
=====
-----+
Prefix
|
Sid-Type      Fwd-Type      In-Label  Prot-Inst(algoId)
|
|              Next Hop(s)
ID |
-----+
1.1.1.1
Node          Orig/Transit  20601     ISIS-0
              1.1.3.1    20601     toA
1.1.1.2
Node          Orig/Transit  20602     ISIS-0
              1.2.3.2    20602     toB
1.1.1.3
Node          Terminating  20603     ISIS-0
1.1.1.4
Node          Orig/Transit  20604     ISIS-0
              1.2.3.2    20604     toB
1.1.1.5
Node          Orig/Transit  20605     ISIS-0
              1.3.5.5    20605     toE
1.1.1.6
Node          Orig/Transit  20606     ISIS-0
              1.3.5.5    20606     toE
1.1.1.1
Node          Orig/Transit  20611     ISIS-0 (128)
              1.1.3.1    20611     toA
1.1.1.3
Node          Terminating  20613     ISIS-0 (128)
1.1.1.4
Node          Orig/Transit  20614     ISIS-0 (128)
              1.2.3.2    20614     toB
1.1.1.5
Node          Orig/Transit  20615     ISIS-0 (128)
              1.3.5.5    20615     toE
1.1.1.6
Node          Orig/Transit  20616     ISIS-0 (128)
              1.3.5.5    20616     toE
1.1.1.1
Node          Orig/Transit  20621     ISIS-0 (129)
              1.1.3.1    20621     toA
1.1.1.3
```

Node 1.1.1.4	Terminating	20623	ISIS-0 (129)		
Node 1.1.1.5	Orig/Transit 1.2.3.2	20624	ISIS-0 (129)	20624	toB
Node 1.1.1.6	Orig/Transit 1.3.5.5	20625	ISIS-0 (129)	20625	toE
Node 1.1.1.1	Orig/Transit 1.3.5.5	20626	ISIS-0 (129)	20626	toE
Node 1.1.1.1	Orig/Transit 1.1.3.1	20631	ISIS-0 (130)	20631	toA
Node 1.1.1.3	Terminating	20633	ISIS-0 (130)		
Node 1.1.1.4	Orig/Transit 1.2.3.2	20634	ISIS-0 (130)	20634	toB
Node 1.1.1.5	Orig/Transit 1.3.5.5	20635	ISIS-0 (130)	20635	toE
Node 1.1.1.6	Orig/Transit 1.3.5.5	20636	ISIS-0 (130)	20636	toE
Node 1.1.1.1	Orig/Transit 1.1.3.1	20641	ISIS-0 (131)	20641	toA
Node 1.1.1.3	Terminating	20643	ISIS-0 (131)		
Node 1.1.1.4	Orig/Transit 1.2.3.2	20644	ISIS-0 (131)	20644	toB
Node 1.1.1.5	Orig/Transit 1.3.5.5	20645	ISIS-0 (131)	20645	toE
Node 1.1.1.6	Orig/Transit 1.3.5.5	20646	ISIS-0 (131)	20646	toE
Node 1.1.1.1	Orig/Transit 1.1.3.1	20651	ISIS-0 (132)	20651	toA
Node 1.1.1.3	Terminating	20653	ISIS-0 (132)		
Node 1.1.1.4	Orig/Transit 1.2.3.2	20654	ISIS-0 (132)	20654	toB
Node 1.1.1.5	Orig/Transit 1.3.5.5	20655	ISIS-0 (132)	20655	toE
Node 1.1.1.6	Orig/Transit 1.3.5.5	20656	ISIS-0 (132)	20656	toE
Node 3ffe::101:101	Orig/Transit fe80::ce0f:1ff:fe01:2	20801	ISIS-0	20801	toA
Node 3ffe::101:102	Orig/Transit fe80::ce14:1ff:fe01:3	20802	ISIS-0	20802	toB
Node 3ffe::101:103	Terminating	20803	ISIS-0		
Node 3ffe::101:104	Orig/Transit fe80::ce14:1ff:fe01:3	20804	ISIS-0	20804	toB
Node 3ffe::101:105					

Node	Orig/Transit	20805	ISIS-0		
3ffe::101:106	fe80::ce2c:1ff:fe01:1			20805	toE
Node	Orig/Transit	20806	ISIS-0		
3ffe::101:101	fe80::ce2c:1ff:fe01:1			20806	toE
Node	Orig/Transit	20811	ISIS-0 (128)		
3ffe::101:103	fe80::ce0f:1ff:fe01:2			20811	toA
Node	Terminating	20813	ISIS-0 (128)		
3ffe::101:104					
Node	Orig/Transit	20814	ISIS-0 (128)		
3ffe::101:105	fe80::ce14:1ff:fe01:3			20814	toB
Node	Orig/Transit	20815	ISIS-0 (128)		
3ffe::101:106	fe80::ce2c:1ff:fe01:1			20815	toE
Node	Orig/Transit	20816	ISIS-0 (128)		
3ffe::101:101	fe80::ce2c:1ff:fe01:1			20816	toE
Node	Orig/Transit	20821	ISIS-0 (129)		
3ffe::101:103	fe80::ce0f:1ff:fe01:2			20821	toA
Node	Terminating	20823	ISIS-0 (129)		
3ffe::101:104					
Node	Orig/Transit	20824	ISIS-0 (129)		
3ffe::101:105	fe80::ce14:1ff:fe01:3			20824	toB
Node	Orig/Transit	20825	ISIS-0 (129)		
3ffe::101:106	fe80::ce2c:1ff:fe01:1			20825	toE
Node	Orig/Transit	20826	ISIS-0 (129)		
3ffe::101:101	fe80::ce2c:1ff:fe01:1			20826	toE
Node	Orig/Transit	20831	ISIS-0 (130)		
3ffe::101:103	fe80::ce0f:1ff:fe01:2			20831	toA
Node	Terminating	20833	ISIS-0 (130)		
3ffe::101:104					
Node	Orig/Transit	20834	ISIS-0 (130)		
3ffe::101:105	fe80::ce14:1ff:fe01:3			20834	toB
Node	Orig/Transit	20835	ISIS-0 (130)		
3ffe::101:106	fe80::ce2c:1ff:fe01:1			20835	toE
Node	Orig/Transit	20836	ISIS-0 (130)		
3ffe::101:101	fe80::ce2c:1ff:fe01:1			20836	toE
Node	Orig/Transit	20841	ISIS-0 (131)		
3ffe::101:103	fe80::ce0f:1ff:fe01:2			20841	toA
Node	Terminating	20843	ISIS-0 (131)		
3ffe::101:104					
Node	Orig/Transit	20844	ISIS-0 (131)		
3ffe::101:105	fe80::ce14:1ff:fe01:3			20844	toB
Node	Orig/Transit	20845	ISIS-0 (131)		
3ffe::101:106	fe80::ce2c:1ff:fe01:1			20845	toE
Node	Orig/Transit	20846	ISIS-0 (131)		
3ffe::101:101	fe80::ce2c:1ff:fe01:1			20846	toE
Node	Orig/Transit	20851	ISIS-0 (132)		
3ffe::101:101	fe80::ce0f:1ff:fe01:2			20851	toA

```

3ffe::101:103
Node Terminating 20853 ISIS-0 (132)
3ffe::101:104
Node Orig/Transit 20854 ISIS-0 (132)
fe80::ce14:1ff:fe01:3 20854 toB
3ffe::101:105
Node Orig/Transit 20855 ISIS-0 (132)
fe80::ce2c:1ff:fe01:1 20855 toE
3ffe::101:106
Node Orig/Transit 20856 ISIS-0 (132)
fe80::ce2c:1ff:fe01:1 20856 toE
fe80::ce0f:1ff:fe01:2-"toA"
Adjacency Transit 524276 ISIS-0
fe80::ce0f:1ff:fe01:2 3 toA
1.1.3.1
Adjacency Transit 524277 ISIS-0
1.1.3.1 3 toA
fe80::ce2c:1ff:fe01:1-"toE"
Adjacency Transit 524278 ISIS-0
fe80::ce2c:1ff:fe01:1 3 toE
1.3.5.5
Adjacency Transit 524279 ISIS-0
1.3.5.5 3 toE
fe80::ce14:1ff:fe01:3-"toB"
Adjacency Transit 524280 ISIS-0
fe80::ce14:1ff:fe01:3 3 toB
1.2.3.2
Adjacency Transit 524281 ISIS-0
1.2.3.2 3 toB
-----+
No. of Entries: 68
-----+
*A:Dut-C>config>router>isis$
    
```

### Output Example for Egress Peer Engineering

```

A:Dut-C# /tools dump router segment-routing tunnel
=====
Legend: (B) - Backup Next-hop for Fast Re-Route
(D) - Duplicate
Label stack is ordered from top-most to bottom-most
=====
-----+
Prefix |
Sid-Type Fwd-Type In-Label Prot-Inst(algoId) |
Next Hop(s) Out-Label(s) |
Interface/ |
Tunnel-ID |
-----+
10.20.1.1
Node Orig/Transit 524282 BGP-EPE-0
10.11.13.1 3 to_A_1
10.12.13.1 3 to_A_2
10.12.13.1
Adjacency Transit 524283 BGP-EPE-0
10.12.13.1 3 to_A_2
10.11.13.1
Adjacency Transit 524284 BGP-EPE-0
10.11.13.1 3 to_A_1
-----+
No. of Entries: 3
-----+
    
```

A:Dut-C#

### Output Example for Single Loopback SID

```
*A:Dut-C# tools dump router segment-routing tunnel
=====
====
Legend: (B) - Backup Next-hop for Fast Re-Route
        (D) - Duplicate
Label stack is ordered from top-most to bottom-most
=====
-----
---+
Prefix
 |
Sid-Type      Fwd-Type      In-Label  Prot-Inst(algoId)
 |
 |              Next Hop(s)
 |
ID |
-----
---+
1.1.1.3
Node          Terminating  20003    IGP-Shared
1.1.1.5
Node          Orig/Transit  20005    ISIS-0
              10.10.10.2          20005    To_1/1/1(E)
10.10.10.2
Adjacency     Transit       524287   ISIS-0
              10.10.10.2          3        To_1/1/1(E)
-----
---+
No. of Entries: 3
-----
---+
*A:Dut-C#
```

Table 608: Tunnel Group Fields

Label	Description
ISA Group	The ISA group ID
Admin State	The administrative state of the tunnel group
Oper state	The operational state of the tunnel group
Responder-Only	The tunnel setup under the specified tunnel group
Non-Active Members	The non-active ESA and ESA VM
Required Active Qty	The number of the required active members
Active Members	The active ESA and ESA VM
Reassembly (msecs)	The time of reassembly
ISA Chassis	The number of ISA chassis

Label	Description
Oper Flags	The operational status flag of the tunnel
Grp IPsec Tnls	The number of group IPsec tunnels
Grp IPsec Max Tnls	The maximum number of group IPsec tunnels
Grp IP Tunnels	The number of group IP tunnels
Grp IP Max Tunnels	The maximum number of group IP tunnels
ISA Scale Mode	The number of tunnels on each ISA of the tunnel group
Statistics Collection	Specifies whether statistics collection is enabled
CPU Usage	Specifies whether the CPU usage of all the processes and protocols is enabled
Gw Traffic Forward	Specifies whether the traffic forwarded on the GW is enabled
IGP-Shared	Identifies a local node as a shared SID and is programmed in an ILM as such. An ILM can only be programmed once and has a single owner. When a node SID is shared, a local duplicate may exist between instances and the ISIS, OSPF, and OSPF3 protocols.

## tunnel

### Syntax

**tunnel** [{*ip-address* | *ipv6-address*}] [ **detail**]

**tunnel** [{*ip-address* | *ipv6-address*}] **egress-stats**

### Context

[\[Tree\]](#) (show>router>rib-api tunnel)

### Full Context

show router rib-api tunnel

### Description

This command displays RIB-API tunnel information.

### Parameters

#### *ip-address*

Specifies the IPv4 address of the RIB-API tunnel up to 64 characters.

#### *ipv6-address*

Specifies the IPv6 address of the RIB-API tunnel up to 64 characters.



### detail

Displays detailed RIB-API tunnel information.

### egress-stats

Displays egress statistics of all instances for the specified RIB-API tunnel.

## Platforms

All

## Output

The following output is an example of RIB-API tunnel information.

### Output Example

```
show router rib-api tunnel 10.20.1.5 egress-stats
=====
Tunnel (Detail)
=====
Tunnel          : 10.20.1.5           Rib-API Pref   : 16
Client Ip       : 172.21.38.76       Client Tag     : 1
Active          : Y                  EgrStatsState : Up
Next-hop Group  : 1
  Primary nexthop : 10.10.5.5
  StatsOperState : Up
  Aggr Pkts: 11000           Aggr Octets: 11550000
  Backup nexthop  : 10.10.11.4
  StatsOperState : Up
  Aggr Pkts: 11000           Aggr Octets: 11550000
Next-hop Group  : 2
  Primary nexthop : 10.10.5.5
  StatsOperState : Up
  Aggr Pkts: 11000           Aggr Octets: 11550000
  Backup nexthop  : 10.10.11.4
  StatsOperState : Up
  Aggr Pkts: 11000           Aggr Octets: 11550000
Total Aggr      :
  Aggr Pkts: 44000           Aggr Octets: 46200000
-----
=====
```

## tunnel

### Syntax

```
tunnel {ip-address | ipv6-address} preference preference client-tag client-tag egress-stats
```

### Context

[\[Tree\]](#) (clear>router>rib-api tunnel)

### Full Context

```
clear router rib-api tunnel
```

## Description

Clears the egress statistics of the specified RIB-API tunnel.

## Parameters

### *ip-address*

Specifies the IPv4 address of the RIB-API tunnel up to 64 characters.

### *ipv6-address*

Specifies the IPv6 address of the RIB-API tunnel up to 64 characters.

### *preference*

Specifies the preference of the specified RIB-API entry.

**Values** 0 to 4294967295

### *client-tag*

Specifies the client tag of the specified RIB-API entry.

**Values** 0 to 4294967295

### *egress*

Specifies to clear the egress statistics.

## Platforms

All

## tunnel

## Syntax

```
tunnel {ip-address | ipv6-address}
```

## Context

[\[Tree\]](#) (tools>dump>router>rib-api tunnel)

## Full Context

```
tools dump router rib-api tunnel
```

## Description

This command configures the dump tools for RIB-API tunnel.

## Parameters

### *ip-address*

Specifies the IPv4 address of the RIB-API tunnel, up to 64 characters.

### *ipv6-address*

Specifies the IPv6 address of the RIB-API tunnel, up to 64 characters.

## Platforms

All

## Output

The following output is an example of RIB-API tunnel route information.

### Output Example

```
*A:Dut-A>tools>dump>router>rib-api# tunnel 10.21.1.3
Db Mgr flags 0x80 ilmStatsFailCnt 0
-----
dbOwner RIB-API routeOwner 50 rsvdBlkId 3 flags 0x3 numPolicies 1 numInstalled 1
-----
EndPt DB 10.21.1.3
dbFlags 0xa PathCount 1 srTunnelId 1015813
PROGRAMMED
Path bitmap 0
SR Retry time left : 0 SR retrycount : 0
Best Db Path owner 1 path name vrId:1, dbOwner:1, Client Tag:4 endPoint 10.21.1.3 color 0
preference 182 Last Modified 02/07/2020 23:44:42 Up Time 0d 02:13:47
Preference 182 flags 0x4246 Status FWDPLCY_ERR_NA SR status SR_ERR_OK
TTM Preference 102 metric 103
PrimResolved NH's 1 BkupResolved NH's 1
NHGroup 4
flags 0x3bf9 : weight 0 normalized weight 0
Revert timer 65535 Time left 0 NumOfReverts 0
Hold timer 0 Time left 0
DIRECT NH: PRIM PGMED: PRIM RESOLVED: BKUP RESOLVED: BKUP PGMED:
primaryNH 1.1.2.2 egrStatsIdx 0x20001 Status FWDPLCY_NHERR_NA
Label Stack:30044 0
Nexthop 1 1.1.2.2 outIf 3 globalIfIndex 11 globaIfInNHgrp 11
PG ID 0
PG ID 7
backupNH 1.1.2.22 egrStatsIdx 0x20002 Status FWDPLCY_NHERR_NA
Label stack:30244 0
Nexthop 1 1.1.2.22 outIf 3 globalIfIndex 11 globaIfInNHgrp 11
PG ID 0
PG ID 8
-----
*A:Dut-A>tools>dump>router>rib-api#
```

## tunnel

### Syntax

**tunnel** *gre-tunnel-name* **stats**

**tunnel** *gre-tunnel-name* **temp-mtu**

### Context

[\[Tree\]](#) (clear>ip tunnel)

### Full Context

clear ip tunnel

## Description

This command clears IP tunnel statistics.

## Parameters

### ***gre-tunnel-name***

Specifies the GRE tunnel name, up to 32 characters.

### **stats**

Clears the statistics counter for the specified tunnel.

### **temp-mtu**

Clears temporary MTU values from the MTU propagation for the specified tunnel.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## tunnel

## Syntax

```
tunnel {ip-address | ipv6-address} preference preference client-tag client-tag egress-stats [ interval seconds] [ repeat repeatf] [{absolute | rate}]
```

## Context

[\[Tree\]](#) (monitor>router>rib-api tunnel)

## Full Context

monitor router rib-api tunnel

## Description

This command monitors the egress statistics of the specified RIB-API tunnel.

## Parameters

### ***ip-address***

Specifies the IPv4 address of the RIB-API tunnel up to 64 characters.

### ***ipv6-address***

Specifies the IPv6 address of the RIB-API tunnel up to 64 characters.

### ***preference***

Specifies the preference of the specified RIB-API entry.

**Values** 0 to 4294967295

### ***client-tag***

Specifies the client tag of the specified RIB-API entry.

**Values** 0 to 4294967295

### **egress-stats**

Specifies to monitor the egress statistics of the specified RIB-API tunnel.

### **seconds**

Configures the interval for each display in seconds.

**Values** 3 to 60

### **repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

### **absolute**

Displays the absolute statistics of the specified RIB-API tunnel.

### **rate**

Displays the rate-per-second statistics of the specified RIB-API tunnel.

## **Platforms**

All

## **tunnel**

## **Syntax**

**tunnel** *name* [**destinations** | **sessions**]

## **Context**

[\[Tree\]](#) (show>system>grpc-tunnel tunnel)

## **Full Context**

show system grpc-tunnel tunnel

## **Description**

This command displays gRPC tunnel information.

## **Parameters**

### ***name***

Specifies the gRPC tunnel name, up to 32 characters.

### **destinations**

Specifies to display gRPC tunnel destinations.

### **sessions**

Specifies to display gRPC tunnel sessions.

## **Platforms**

All

## Output

The following output is an example of system gRPC tunnel tunnel information.

[Table 610: Show System gRPC-tunnel tunnel Output Fields](#) describes system gRPC tunnel tunnel output fields.

### Output example

```
*A:dut-c# show system grpc-tunnel tunnel

=====
gRPC-Tunnel tunnels
=====
Name                               Admin  Oper  Sessions
-----
t1                                  Enabled  Up    0
-----
No. of tunnels: 1
=====
Please provide output example
```

*Table 609: Show system gRPC-tunnel tunnel output fields*

Label	Description
Name	Displays the name of the tunnel.
Admin	Specifies the administrative state (Enabled, Disabled).
Oper	Specifies the operational state (Up, Down, Tran).
Sessions	Displays the number of sessions of the tunnel.
No. of tunnels	Displays the number of tunnels.

### Output example

```
*A:dut-c# show system grpc-tunnel tunnel "t1"

=====
gRPC-Tunnel tunnel
=====
Name                               : t1
Administrative State                : Enabled
Operational State                   : Up
Oper Down Reason                    :
Description                         : (Not Specified)
Destination Group                   : dg1
Operational Target Name              : dut-c
=====
```

*Table 610: Show System gRPC-tunnel tunnel Output Fields*

Label	Description
Name	Displays the name of the tunnel.

Label	Description
Administrative State	Specifies the administrative state (Enabled, Disabled).
Operational State	Specifies the operational state (Up, Down, Transition).
Oper Down Reasons	Displays the reason for the operational down state.
Description	Displays the description of the tunnel.
Destination Group	Displays the destination group of the tunnel.
Operational Target Name	Displays the operational target name of the tunnel.

## tunnel

### Syntax

**tunnel count**

**tunnel** *ip-tunnel-name*

**tunnel state** *state*

**tunnel**

### Context

[\[Tree\]](#) (show>ip tunnel)

### Full Context

show ip tunnel

### Description

This command displays IP related tunnel information.

### Parameters

***ip-tunnel-name***

Specifies the IP tunnel name, up to 32 characters.

***state***

Specifies the IP tunnel state.

**Values** up, down

### Platforms

All

## 23.51 tunnel-encryption

### tunnel-encryption

#### Syntax

```
tunnel-encryption encryption-group group-name [peer ip-address] [detail] [mka-session]
tunnel-encryption encryption-group group-name [peer ip-address] [statistics] [mka-session]
tunnel-encryption [detail] [mka-session]
tunnel-encryption [statistics] [mka-session]
```

#### Context

[\[Tree\]](#) (show>anysec tunnel-encryption)

#### Full Context

```
show anysec tunnel-encryption
```

#### Description

Commands in this context display tunnel encryption information.

#### Parameters

##### *group-name*

Specifies the encryption group name, up to 32 characters.

##### *ip-address*

Specifies the IPv4 or IPv6 address.

##### Values

ip-address:	ipv4-address - a.b.c.d
ipv6-address :	x:x:x:x:x:x:x (eight 16-bit pieces)
	x:x:x:x:x:d.d.d.d
	x - [0 to FFFF]H
	d - [0 to 255]D

##### **detail**

Keyword to specify the detailed tunnel encryption group information.

##### **mka-session**

Keyword to specify MKA session information.

##### **statistics**

Keyword to specify MKA statistical information.



## Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S, 7750 SR-1se

## Output

The following output is an example of the tunnel encryption information, and [Table 611: Tunnel encryption Fields](#) describes the output fields.

### Output Example

```
# show anysec tunnel-encryption detail

=====
Encryption Group: EG-1
=====
Group Admin State      : Up
CA Name                : CA-1
Local Encryption Label : 0
Security Termination Policy: STP-1
Policy Admin State     : Up
Policy Protocol        : sr-isis
Policy IGP Instance ID : 11
Policy FlexAlgo ID     : 0
Local Address          : 1.1.216.100
Rx Must Be Encrypted   : No
Terminating Label     : 0

-----

Peer 1.1.216.136 configuration
-----
Peer Admin State      : Up
Peer Protocol         : sr-isis
Peer IGP Instance ID : 11
Peer FlexAlgo ID     : 0
Peer Tunnel ID        : 0
Peer Encryption Label : 0
Last Inconsistent Rx SCI: 0000000000000000

-----

SC stats for peer 1.1.216.136
-----

txSCSecyStats
-----
Tx SCI                : 00000000000000002
Encrypted Packets     : 0
Encrypted Octets      : 0

-----

rxSCSecyStats
-----
Rx SCI                : 00000000000000000
Delay Packets         : 0
Not Valid Packets    : 0
Unchecked Packets    : 0
OK Packets           : 0
Decrypted Octets     : 0
-----
```

Table 611: Tunnel encryption Fields

Label	Description
Group Admin State	The encryption group administrative state
CA Name	The connectivity association name
Local Encryption Label	The local encryption label
Security Termination Policy	The security termination policy name
Policy Admin State	The policy administrative state
Policy Protocol	The policy protocol
Policy IGP Instance ID	The policy IGP instance ID
Policy FlexAlgo ID	The policy flexible algorithm ID
Local Address	The local IP address
Rx Must Be Encrypted	Indicates all arriving traffic must be encrypted or is discarded
Terminating Label	The terminating label
Peer <IP address> configuration	
Peer Admin State	The peer administrative state
Peer Protocol	The peer protocol
Peer IGP Instance ID	The peer IGP instance ID
Peer FlexAlgo ID	The peer Flex Algo ID
Peer Tunnel ID	The peer tunnel ID
Peer Encryption Label	The peer encryption label
Last Inconsistent Rx SCI	The last inconsistent receive SCI value
txSCSecyStats	
Tx SCI	The transmit SCI value
Encrypted Packets	The number of encrypted packets
Encrypted Octets	The number of encrypted octets

Label	Description
rxSCSecyStats	
Rx SCI	The receive SCI value
Delay Packets	The number of delayed packets
Not Valid Packets	The number of invalid packets
Unchecked Packets	The number of unchecked packets
OK Packets	The number of OK packets
Decrypted Octets	The number of decrypted octets

## 23.52 tunnel-group

### tunnel-group

#### Syntax

**tunnel-group** *tunnel-group-id* **association mda** *mda-id*

**tunnel-group** *tunnel-group-id* **association esa-vm** *esa-id/vm-id*

**tunnel-group** *tunnel-group-id* [ **detail**]

**tunnel-group** *tunnel-group-id*

#### Context

[\[Tree\]](#) (show>isa tunnel-group)

#### Full Context

show isa tunnel-group

#### Description

Commands in this context display tunnel information.

#### Parameters

##### **association**

Displays association applicable to the specified tunnel group.

##### **esa-vm**

Specifies the configured ESA and ESA VM.

#### Values

*esa-vm:* *esa-id/vm-id*

*esa-id* 1 to 16

*vm-id* 1 to 4

**mda-id**

Displays information about the specified ISA.

**Values** slot/mda

**detail**

Specifies the detailed ESA VM information.

**tunnel-group-id**

Displays information about the specified tunnel group ID.

**Values** 1 to 16

**Platforms**

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of the tunnel group information. [Table 612: Tunnel group Fields](#) provides tunnel group descriptions.

**Output Example**

```
*A:SR-12/Dut-B# show isa tunnel-group 1
=====
ISA Tunnel Groups (Multi-Active)
=====
Tunnel   Non-Active   Required   Active   Admin   Oper
GroupID  Members     Active Qty Members   State   State
-----
1        1           1          esa-1/1  Up      Up
-----
No. of ISA Tunnel Groups (Multi-Active): 1
=====
*A:SR-12/Dut-B# show isa tunnel-group 1 detail
=====
ISA Tunnel Group Information
=====
Description      : For testing ipsec/gre/ip-ip scenarios in a non-multi-
                   chassis setup
ISA Group        : 1
Admin State      : Up           Oper State      : Up
Responder-Only   : true
Non-Active Members : (Not Specified)
Required Active Qty : 1
Active Members   : esa-1/1
Reassembly (msecs) : 2000          ISA Chassis     : 1
Oper Flags       : (Not Specified)
Grp IPsec Tnls   : 30267         Grp IPsec Max Tnls : 32768
Grp IP Tunnels   : 0             Grp IP Max Tunnels : 4096
ISA Scale Mode   : tunnel-limit-32k
Statistics Collection
  CPU Usage      : Disabled
  Gw Traffic Forward : Enabled
```

```

=====
*A:SR-12/Dut-B# show isa tunnel-group 1 association esa-vm 1/1
=====
Associated IPsec Tunnels
-----
Private Svc Tunnel                Host ISA  Oper      Delivery Svc
-----
Number of Entries: 0
-----
Associated IP Tunnels
-----
Private Svc Tunnel                Host ISA  Oper      Delivery Svc
-----
Number of Entries: 0
-----
Associated Remote-User IPsec Tunnels
-----
Public Svc  Address:Port                Host ISA                Private Svc
-----
1052        42.1.1.2:500                esa-1/1                 52
1052        42.1.1.3:500                esa-1/1                 52
1052        42.1.1.4:500                esa-1/1                 52
1052        42.1.1.5:500                esa-1/1                 52
1052        42.1.1.6:500                esa-1/1                 52
1052        42.1.1.7:500                esa-1/1                 52
1052        42.1.1.8:500                esa-1/1                 52
1052        42.1.1.9:500                esa-1/1                 52
    
```

Table 612: Tunnel group Fields

Label	Description
ISA Group	The ISA group ID
Admin State	The administrative state of the tunnel group
Oper state	The operational state of the tunnel group
Responder-Only	The tunnel setup under the specified tunnel group
Non-Active Members	The non-active ESA and ESA VM
Required Active Qty	The number of the required active members
Active Members	The active ESA and ESA VM
Reassembly (msecs)	The time of reassembly
ISA Chassis	The number of ISA chassis
Oper Flags	The operational status flag of the tunnel
Grp IPsec Tnls	The number of group IPsec tunnels
Grp IPsec Max Tnls	The maximum number of group IPsec tunnels
Grp IP Tunnels	The number of group IP tunnels

Label	Description
Grp IP Max Tunnels	The maximum number of group IP tunnels
ISA Scale Mode	The number of tunnels on each ISA of the tunnel group
Statistics Collection	Specifies whether statistics collection is enabled
CPU Usage	Specifies whether the CPU usage of all the processes and protocols is enabled
Gw Traffic Forward	Specifies whether the traffic forwarded on the Gw is enabled

## 23.53 tunnel-interface

### tunnel-interface

#### Syntax

tunnel-interface

#### Context

[Tree] (show>router>igmp tunnel-interface)

#### Full Context

show router igmp tunnel-interface

#### Description

This command displays tunnel interface information.

#### Platforms

All

#### Output

The following output is an example of IGMP tunnel interface information.

#### Output Example

```
*A:Dut-C# show router igmp tunnel-interface
=====
IGMP Tunnel-Interfaces
=====
LSP/LDP      Type      SenderAddr  IfIndex      AdmState  OperState
-----
1            ldp       10.20.1.3   74218        Up         Up
2            ldp       10.20.1.3   74219        Up         Up
3            ldp       10.20.1.3   74220        Up         Up
4            ldp       10.20.1.3   74221        Up         Up
5            ldp       10.20.1.3   74222        Up         Up
```

```
-----  
Interfaces : 5  
=====
```

## tunnel-interface

### Syntax

```
tunnel-interface [ip-int-name | mt-int-name | int-ip-address] [group [grp-ip-address] source ip-address]  
[type {starstarrp | starg | sg}] [detail] [family]
```

### Context

[\[Tree\]](#) (show>router>pim tunnel-interface)

### Full Context

```
show router pim tunnel-interface
```

### Description

This command displays PIM tunnel interface information.

### Parameters

#### *ip-int-name*

Displays information about the specified IP interface name, up to 32 characters.

#### *mt-int-name*

Displays information about the Multicast Tunnel (MT) interface for a VPRN.

**Values** *vprn-id-mt-grp-ip-address*

#### *int-ip-address*

Displays information about the interface IPv4 or IPv6 address.

#### *grp-ip-address*

Displays information about the IP multicast group address, or 0.

#### *ip-address*

Displays information about the source or RP IPv4 or IPv6 address.

#### **type**

Displays information about the type of entry.

**Values** starstarrp, starg, sg

#### **detail**

Displays detailed interface information.

#### *family*

Displays family information.

**Values** ipv4, ipv6

## Platforms

All

## Output

The following output is an example of PIM tunnel interface information.

### Output Example

```
*A:Dut-C# show router pim tunnel-interface
=====
PIM Interfaces ipv4
=====
Interface                               Originator Address  Adm  Opr  Transport Type
-----
mpls-if-73728                            N/A                 Up   Up   Tx-IPMSI
mpls-if-73729                            N/A                 Up   Up   Tx-IPMSI
mpls-if-73730                            N/A                 Up   Up   Tx-IPMSI
mpls-if-73735                            N/A                 Up   Up   Rx-BierInband
mpls-if-73736                            N/A                 Up   Up   Tx-BierInband
-----
Interfaces : 5
=====
```

## tunnel-interface

### Syntax

**tunnel-interface** [**protocol** *protocol*] [**senderAddr** *senderAddr*] [**rootNode** *rootNode*]

### Context

[\[Tree\]](#) (show>router tunnel-interface)

### Full Context

show router tunnel-interface

### Description

This command displays tunnel interface information.

### Parameters

#### **protocol**

Displays information about the specified protocol.

**Values** ldp, rsvp

#### **senderAddr**

Displays information about the IP address of the sender.

#### **rootNode**

Displays information about the root nodes.

**Values** Yes, No



## Platforms

All

## Output

The following output is an example of router tunnel interface information.

### Output Example

```
*A:Dut-C# show router tunnel-interface
=====
P2MP-RSVP P2MP-LDP Tunnel-Interfaces
=====
LSP/LDP      Type      SenderAddr  IfIndex     RootNode
-----
1            ldp       10.20.1.2   73728       No
2            ldp       10.20.1.2   73729       No
3            ldp       10.20.1.2   73730       No
4            ldp       10.20.1.2   73731       No
5            ldp       10.20.1.2   73732       No
-----
Interfaces : 5
=====
*A:Dut-B# show router tunnel-interface
=====
P2MP-RSVP P2MP-LDP Tunnel-Interfaces
=====
LSP/LDP      Type      SenderAddr  IfIndex     RootNode
-----
1            ldp       10.20.1.2   73728       Yes
2            ldp       10.20.1.2   73729       Yes
3            ldp       10.20.1.2   73730       Yes
4            ldp       10.20.1.2   73731       Yes
5            ldp       10.20.1.2   73732       Yes
-----
Interfaces : 5
=====
```

## 23.54 tunnel-isa

### tunnel-isa

#### Syntax

tunnel-isa

#### Context

[\[Tree\]](#) (show>isa>stats tunnel-isa)

#### Full Context

show isa statistics tunnel-isa

## Description

Commands in this context display tunnel ISA statistics including ISA CPU usage and memory allocation failure rates.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.55 tunnel-member-pool

### tunnel-member-pool

## Syntax

**tunnel-member-pool** [*name*]

**tunnel-member-pool** *name* **detail**

## Context

[\[Tree\]](#) (show>isa tunnel-member-pool)

## Full Context

show isa tunnel-member-pool

## Description

This command displays a list of configured tunnel member pools.

## Parameters

***name***

Specifies the tunnel member pool name.

***detail***

Displays more information about the specified tunnel member pool.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of tunnel member pool information. [Table 613: Tunnel Member Pool Field Descriptions](#) describes the output fields.

## Output Example

```
show>isa# tunnel-member-pool "p1" detail
```

```
=====
ISA Tunnel Member Pool : p1
Description             : (Not Specified)
```

```

Associated Tunnel Grps : 1 2
=====
Isa Members                Active In Group    Last Configuration Change
-----
1/2                        03/23/2022 13:08:28
-----
Number of Configured Entries: 1
Number of Active Entries: 0
    
```

Table 613: Tunnel Member Pool Field Descriptions

Label	Description
ISA Tunnel Member Pool	The name of the ISA tunnel member pool.
Description	The text description for the tunnel member pool.
Associated Tunnel Grps	The name of the tunnel groups this pool is associated with.
Isa Members	The ISA members associated with this tunnel member pool.
Active In Group	The tunnel group that the MDA is active in.
Last Configuration Change	The date and time of the last configuration change.
Number of Configured Entries	The number of configured entries.
Number of Active Entries	The number of active entries.

## 23.56 tunnel-qos

### tunnel-qos

#### Syntax

**tunnel-qos** [detail]

**tunnel-qos remote-ip** *ip-address* [**local-ip** *ip-address*] [detail]

#### Context

[\[Tree\]](#) (show>router>wlan-gw tunnel-qos)

#### Full Context

show router wlan-gw tunnel-qos

#### Description

This command displays tunnel-QoS resource information.

## Parameters

### *ip-address*

Specifies the IPv4 address of the access point that is the source IPv4 address in the tunnel header of received packets.

#### Values

ipv4-address: a.b.c.d  
ipv6-address : x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x - [0 to FFFF]H  
d - [0 to 255]D

### *ip-address*

Specifies the IPv4 address of this system that is the destination IPv4 address in the tunnel header of received packets.

#### Values

ipv4-address: a.b.c.d  
ipv6-address : x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x - [0 to FFFF]H  
d - [0 to 255]D

### *detail*

Displays detailed information.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of soft GRE tunnel QoS information.

### Output Example

```
*A:Dut-C# show router 50 wlan-gw soft-gre-tunnel-qos
=====
Soft GRE tunnel QoS
=====
Remote IP address      : 239.0.0.2
Local IP address       : 10.1.1.1
Operational state     : active
Number of UE          : 1
Remaining hold time (s) : N/A

*A:Dut-C# show router 50 wlan-gw soft-gre-tunnel-qos detail
=====
Soft GRE tunnel QoS
```

```
=====
Remote IP address      : 239.0.0.2
Local IP address      : 10.1.1.1
Operational state     : active
Number of UE          : 1
Remaining hold time (s) : N/A
Service Access Points(SAP)
=====
Service Id            : 2147483650
SAP                   : 5/1/lo-gre:1           Encap                : q-tag
Description          : Internal SAP
Admin State           : Up                    Oper State            : Up
Flags                 : None
Multi Svc Site        : None
Last Status Change   : 03/24/2014 15:03:48
Last Mgmt Change      : 03/24/2014 15:14:00

-----
Encap Group Specifics
-----
Encap Group Name      : _tmnx_SHAPER_GR000      Group Type            : ISID
Qos-per-member        : TRUE
Members               :
1

-----
QOS
-----
E. qos-policy         : 1                      Q Frame-Based Acct: Disabled
E. Sched Policy       :                       E. Agg-limit          : -1
Limit Unused BW       : Disabled

-----
Encap Group Member 1 Base Statistics
-----
Last Cleared Time     : N/A

Forwarding Engine Stats
Packets                Octets

For. InProf            : 0                      0
For. OutProf           : 0                      0
Dro. InProf            : 0                      0
Dro. OutProf           : 0                      0

-----
Encap Group Member 1 Queue Statistics
-----
Packets                Octets

Egress Queue 1
For. InProf            : 0                      0
For. OutProf           : 0                      0
Dro. InProf            : 0                      0
Dro. OutProf           : 0                      0

*A:Dut-C# show router 50 wlan-gw soft-gre-tunnel-qos remote-ip 239.0.0.2
=====
Soft GRE tunnel QoS
=====
Remote IP address      : 239.0.0.2
Local IP address      : 10.1.1.1
Operational state     : active
```

```

Number of UE          : 1
Remaining hold time (s) : N/A

*A:Dut-C# show router 50 wlan-gw soft-gre-tunnel-qos remote-ip 239.0.0.2 local-ip 10.1.1.1
=====
Soft GRE tunnel QoS
=====
Remote IP address      : 239.0.0.2
Local IP address       : 10.1.1.1
Operational state     : active
Number of UE          : 1
Remaining hold time (s) : N/A

*A:Dut-C# show router 50 wlan-gw soft-gre-tunnel-qos remote-ip 239.0.0.2 local-ip 10.1.1.1
detail
=====
Soft GRE tunnel QoS
=====
Remote IP address      : 239.0.0.2
Local IP address       : 10.1.1.1
Operational state     : active
Number of UE          : 1
Remaining hold time (s) : N/A
Service Access Points(SAP)
=====
Service Id            : 2147483650
SAP                   : 5/1/lo-gre:1           Encap           : q-tag
Description           : Internal SAP
Admin State           : Up                   Oper State      : Up
Flags                 : None
Multi Svc Site        : None
Last Status Change   : 03/24/2014 15:03:48
Last Mgmt Change     : 03/24/2014 15:14:00
-----
Encap Group Specifics
-----
Encap Group Name     : _tmnx_SHAPER_GR000      Group Type      : ISID
Qos-per-member       : TRUE
Members              :
1
-----
QOS
-----
E. qos-policy        : 1                      Q Frame-Based Acct: Disabled
E. Sched Policy      :                      E. Agg-limit    : -1
Limit Unused BW     : Disabled
-----
Encap Group Member 1 Base Statistics
-----
Last Cleared Time    : N/A

Forwarding Engine Stats
Packets              Octets
For. InProf          : 0                      0
For. OutProf         : 0                      0
Dro. InProf          : 0                      0
Dro. OutProf         : 0                      0
-----
Encap Group Member 1 Queue Statistics
-----
Packets              Octets

```

```
Egress Queue 1
For. InProf      : 0
For. OutProf     : 0
Dro. InProf     : 0
Dro. OutProf    : 0
```

## 23.57 tunnel-selection-blacklist

### tunnel-selection-blacklist

#### Syntax

**tunnel-selection-blacklist**

#### Context

**[Tree]** (clear>router>l2tp>group>tunnel tunnel-selection-blacklist)

**[Tree]** (clear>router>l2tp tunnel-selection-blacklist)

**[Tree]** (clear>router>l2tp>tunnel tunnel-selection-blacklist)

**[Tree]** (clear>router>l2tp>group tunnel-selection-blacklist)

#### Full Context

clear router l2tp group tunnel tunnel-selection-blacklist

clear router l2tp tunnel-selection-blacklist

clear router l2tp tunnel tunnel-selection-blacklist

clear router l2tp group tunnel-selection-blacklist

#### Description

This command purges tunnels from the L2TP tunnel selection denylist.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

### tunnel-selection-blacklist

#### Syntax

**tunnel-selection-blacklist**

#### Context

**[Tree]** (clear>router>l2tp>peer tunnel-selection-blacklist)

## Full Context

```
clear router l2tp peer tunnel-selection-blacklist
```

## Description

This command purges peers from the L2TP tunnel selection denylist.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 23.58 tunnel-setup-rate

### tunnel-setup-rate

#### Syntax

```
tunnel-setup-rate gateway name [history-stats-in-count count] [history-stats-in-min minutes]  
[current]
```

```
tunnel-setup-rate [history-stats-in-count count] [history-stats-in-min minutes] [current] esa-vm esa-  
id/vm-id
```

```
tunnel-setup-rate tunnel-type tunnel-type gateway name [history-stats-in-count count] [history-stats-  
in-min minutes] [current] [show-oid]
```

```
tunnel-setup-rate isa mda [history-stats-in-count count] [history-stats-in-min minutes] [current]
```

```
tunnel-setup-rate tunnel-type tunnel-type isa mda [history-stats-in-count count] [history-stats-in-min  
minutes] [current] [show-oid]
```

```
tunnel-setup-rate system [history-stats-in-count count] [history-stats-in-min minutes] [current]
```

```
tunnel-setup-rate tunnel-type tunnel-type system [ history-stats-in-count count] [history-stats-in-min  
minutes] [current] [ show-oid]
```

```
tunnel-setup-rate tunnel-group tunnel-group-id [ history-stats-in-count count] [history-stats-in-min  
minutes] [current]
```

```
tunnel-setup-rate tunnel-type tunnel-type tunnel-group tunnel-group-id [history-stats-in-count count]  
[history-stats-in-min minutes] [current] [show-oid]
```

```
tunnel-setup-rate tunnel-type tunnel-type [ history-stats-in-count count] [history-stats-in-min minutes]  
[current] [ show-oid] esa-vm esa-id/vm-id
```

#### Context

[\[Tree\]](#) (show>isa>stats>ipsec-stats tunnel-setup-rate)

#### Full Context

```
show isa statistics ipsec-stats tunnel-setup-rate
```

#### Description

This command displays IPsec tunnel setup rate statistics of the specified scope.



The system collects statistics every hour for the last 24 hour period per wall clock. A current value is also included in the output.

This command supports following scopes:

- per system
- per ISA
- per tunnel group
- per IPsec GW

The statics include the following setup rates:

- static tunnel
- dynamic LAN-to-LAN tunnel
- remote access tunnel
- all types of tunnel

The start time indicates the starting timestamp of measurement. The sampling duration indicates the duration of measurement.

## Parameters

### *name*

Displays information about the name of the IPsec GW up to 32 characters in length.

### *mda*

Displays information about the specified ISA.

**Values** slot/mda

### *tunnel-group-id*

Displays information about the specified tunnel group ID.

**Values** 1 to 16

### *count*

Displays information for the number of statistics intervals to be displayed (starting with the most recent).

**Values** 1 to 24

### *minutes*

Displays information about the specified period covered by the statistics to be displayed (starting with the most recent).

**Values** 1 to 1440

### *type*

Displays information about the specified tunnel type associated with this IPsec GW.

**Values** all, sl2l, dl2l, ra

### current

Displays information about the current statistic value. The values of count and minutes are ignored by the system once this parameter is specified.

### show-oid

Displays information about the OID of the current statistical value.

### esa-vm

Displays the ID of the configured ESA and ESA VM.

Values		
esa-vm:	<i>esa-id/vm-id</i>	
	<i>esa-id</i>	1 to 16
	<i>vm-id</i>	1 to 4

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 23.59 tunnel-table

### tunnel-table

#### Syntax

**tunnel-table summary** [**ipv4** | **ipv6**]

**tunnel-table** [*ip-prefix/mask*] [**protocol** *protocol*] [**alternative**] [**ipv4** | **ipv6**] [**detail**] [**instance** *instance-id*]

**tunnel-table mpls-tp**

**tunnel-table** [*ip-prefix/mask*] **sdp** *sdp-id*

#### Context

[\[Tree\]](#) (show>router tunnel-table)

#### Full Context

show router tunnel-table

#### Description

This command displays tunnel table information.

Auto-bind GRE tunnels are not displayed in the **show** command output. GRE tunnels are not the same as SDP tunnels that use the GRE encapsulation type. When the **auto-bind-tunnel** command is used when configuring a VPRN service, it means the MP-BGP NH resolution is referring to a core routing instance for IP reachability. For a VPRN service this object specifies the lookup to be used by the routing instance if no SDP to the destination exists.

## Parameters

### **summary**

Displays summary tunnel table information.

### ***ip-prefix[/mask]***

Displays the specified destination IP address and mask of the table tunnel.

**Values** for ipv4-prefix: a.b.c.d (host bits must be 0)  
for ipv4-prefix-le: 0 to 32  
for ipv6-prefix:

- x:x:x:x:x:x (eight 16-bit pieces)
- x:x:x:x:x:d.d.d.d
- x: [0 to FFFF] H
- d: [0 to 255] D

for ipv6-prefix-le: 0 to 128

### **ipv4**

Displays only tunnel table information for IPv4 addresses.

### **ipv6**

Displays only tunnel table information for IPv6 addresses.

### ***protocol***

Displays LDP protocol information.

**Values** bgp, bgp-epe, fpe, isis, ldp, mpls-fwd-policy, ospf, ospf3, rib-api, rsvp, sdp, sr-policy, sr-te, srv6-isis, srv6-policy, udp



#### **Note:**

It is possible that a specific platform only supports a subset of the above protocol values.

### **alternative**

Displays backup route details.

### **detail**

Displays detailed information.

### ***instance-id***

Specifies the IGP instance of the tunnel table

**Values** For isis — 0 to 127  
For ospf — 0 to 31  
For ospfv3 —

- 0 to 31 (when ospfv3 is used for IPv6)
- 64 to 95 (when ospfv3 is used for IPv4)



**Note:**

It is possible that a specific platform only supports a subset of the above values.

**mpls-tp**

Displays MPLS TP tunnel table information.

**sdp-id**

Displays information pertaining to the specified SDP.

**Values** 1 to 17407

**Platforms**

All

**Output**

The following outputs are examples of tunnel table information, and [Table 614: Show Tunnel Table Field Descriptions](#) describes the output fields.

**Output Example**

```
*A:ALA-12>config>service# show router 3 tunnel-table
=====
Tunnel Table
=====
Destination      Owner  Encap  Tunnel Id  Pref  NexthopMetric
-----
10.0.0.1/32     sdp    GRE    10      5     10.0.0.1     0
10.0.0.1/32     sdp    GRE    21      5     10.0.0.1     0
10.0.0.1/32     sdp    GRE    31      5     10.0.0.1     0
10.0.0.1/32     sdp    GRE    41      5     10.0.0.1     0
=====

*A:ALA-12>config>service# show router 3 tunnel-table summary
=====
Tunnel Table Summary (Router: Base)
=====
Active          Available
-----
LDP              1              1
SDP              1              1
=====

*A:Dut-C# show router tunnel-table protocol  srv6-policy ipv6
=====
IPv6 Tunnel Table (Router: Base)
=====
Destination      Owner      Encap TunnelId  Pref
Nexthop          Color      Color      Metric
-----
3ffe::a14:102/128  srv6-pol  SRV6  917510   14
fpe_1.a          10        10      0
-----
Flags: B = BGP or MPLS backup hop available
       L = Loop-Free Alternate (LFA) hop available
       E = Inactive best-external BGP route
```

```

k = RIB-API or Forwarding Policy backup hop
=====
*A:Dut-C# show router tunnel-table protocol srv6-policy ipv6 detail
=====
Tunnel Table (Router: Base)
=====
Destination      : 3ffe::a14:102/128
NextHop          : fpe_1.a
NextHop Weight   : 1
Tunnel Flags     : has-color
Age              : 00h09m47s          Color              : 10
CBF Classes     : (Not Specified)
Owner            : srv6-pol          Encap                : SRV6
Tunnel ID       : 917510            Preference           : 14
Tunnel SRV6 SID : 2222:2:2:2:0:a::  Tunnel Metric        : 0
Tunnel MTU      : -                 Max Label Stack      : 1
-----
Number of tunnel-table entries      : 1
Number of tunnel-table entries with LFA : 0
=====
    
```

Table 614: Show Tunnel Table Field Descriptions

Label	Description
Destination	The destination address and mask of the route
Owner	The tunnel owner
Encap	The encapsulation type of the tunnel
Tunnel ID	The tunnel (SDP) identifier
Pref	The route preference for routes learned from the configured peer or peers
Nexthop	The next hop for the destination of the route
Metric	The route metric value for the route

**Output Example for SR-TE**

The following outputs are examples of tunnel-table protocol detail information. [Table 615: Show Tunnel Table Protocol Detail Field Descriptions](#) describes the output fields.

```

*B:Dut-C>config>router>mpls# show router tunnel-table protocol sr-te detail
=====
Tunnel Table (Router: Base)
=====
Destination : 10.20.1.6/32
NextHop    : 10.180.11.4 (524667, ospf (0))
Tunnel Flags : is-over-tunnel entropy-label-capable
Age         : 00h00m55s
CBF Classes : (Not Specified)
Owner       : sr-te          Encap           : MPLS
Tunnel ID   : 655362        Preference      : 8
Tunnel Label : 1048538      Tunnel Metric   : 2000
    
```

```

Tunnel MTU      : 1492                Max Label Stack : 7
LSP Weight     : 4000
-----
Destination    : 10.20.1.6/32
NextHop        : 10.181.11.4 (524668, ospf (0))
Tunnel Flags   : is-over-tunnel entropy-label-capable
Age            : 00h00m55s
CBF Classes    : (Not Specified)
Owner          : sr-te                Encap           : MPLS
Tunnel ID      : 655363                Preference      : 8
Tunnel Label   : 1048537                Tunnel Metric   : 2000
Tunnel MTU     : 1492                Max Label Stack : 7
LSP Weight     : 80
-----
Destination    : 10.20.1.6/32
NextHop        : 10.182.11.4 (524669, ospf (0))
Tunnel Flags   : is-over-tunnel entropy-label-capable
Age            : 00h00m54s
CBF Classes    : (Not Specified)
Owner          : sr-te                Encap           : MPLS
Tunnel ID      : 655364                Preference      : 8
Tunnel Label   : 1048536                Tunnel Metric   : 2000
Tunnel MTU     : 1492                Max Label Stack : 7
LSP Weight     : 240
-----
Destination    : 10.20.1.6/32
NextHop        : 10.183.11.4 (524670, ospf (0))
Tunnel Flags   : is-over-tunnel entropy-label-capable
Age            : 00h00m53s
CBF Classes    : (Not Specified)
Owner          : sr-te                Encap           : MPLS
Tunnel ID      : 655365                Preference      : 8
Tunnel Label   : 1048535                Tunnel Metric   : 2000
Tunnel MTU     : 1492                Max Label Stack : 7
LSP Weight     : 800
-----
Number of tunnel-table entries      : 4
Number of tunnel-table entries with LFA : 0
=====
    
```

### Output Example for BGP EPE

```

A:Dut-C# show router tunnel-table protocol bgp-epe detail
=====
Tunnel Table (Router: Base)
=====
Destination      : 10.11.13.1/32
NextHop          : 10.11.13.1
Tunnel Flags     : is-adjacency-tunnel
Age              : 00h02m02s
CBF Classes      : (Not Specified)
Owner            : bgp-epe                Encap           : MPLS
Tunnel ID        : 524320                Preference      : 0
Tunnel Label     : 3                    Tunnel Metric    : 0
Tunnel MTU       : -                    Max Label Stack : 0
-----
Destination      : 10.12.13.1/32
NextHop          : 10.12.13.1
Tunnel Flags     : is-adjacency-tunnel
Age              : 00h02m02s
CBF Classes      : (Not Specified)
Owner            : bgp-epe                Encap           : MPLS
    
```

```

Tunnel ID      : 524321          Preference      : 0
Tunnel Label   : 3              Tunnel Metric   : 0
Tunnel MTU     : -              Max Label Stack : 0
-----
Destination    : 10.20.1.1/32
NextHop        : 10.11.13.1
Tunnel Flags   : (Not Specified)
Age            : 00h02m02s
CBF Classes    : (Not Specified)
Owner          : bgp-epe          Encap           : MPLS
Tunnel ID      : 524322          Preference      : 0
Tunnel Label   : 3              Tunnel Metric   : 0
Tunnel MTU     : -              Max Label Stack : 0
-----
Destination    : 10.20.1.1/32
NextHop        : 10.12.13.1
Tunnel Flags   : (Not Specified)
Age            : 00h02m02s
CBF Classes    : (Not Specified)
Owner          : bgp-epe          Encap           : MPLS
Tunnel ID      : 524322          Preference      : 0
Tunnel Label   : 3              Tunnel Metric   : 0
Tunnel MTU     : -              Max Label Stack : 0
-----
Number of tunnel-table entries      : 4
Number of tunnel-table entries with LFA : 0
=====
    
```

Table 615: Show Tunnel Table Protocol Detail Field Descriptions

Label	Description
Destination	The destination address and mask of the route
NextHop	The next hop for the destination of the route
Tunnel Flags	The flags set for this tunnel
Age	The tunnel age
CBF Classes	The Class-Based Forwarding (CBF) classes for the tunnel
Owner	The tunnel owner
Encap	The tunnel encapsulation type
Tunnel ID	The tunnel (SDP) identifier
Preference	The route preference for routes learned from the configured peer or peers
Tunnel Label	The tunnel label
Tunnel Metric	The route metric value for the route
Tunnel MTU	The maximum transmission unit (MTU) of the tunnel

Label	Description
Max Label Stack	The maximum number of labels that can be added onto an existing MPLS header
LSP Weight	The LSP weight

## 23.60 tunnel-template

### tunnel-template

#### Syntax

**tunnel-template** [*ipsec-template-identifier*]

**tunnel-template** *ipsec-template-identifier* **association** [ **all**]

#### Context

[\[Tree\]](#) (show>ipsec tunnel-template)

#### Full Context

show ipsec tunnel-template

#### Description

This command displays IPsec tunnel template information.

#### Parameters

***ipsec template identifier***

Displays an existing IPsec tunnel template ID.

**Values** 1 to 2048

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of the **show ipsec tunnel-template** command.

#### Output Example

```
*A:ALA-48>config>ipsec# show ipsec tunnel-template 1
=====
IPsec Tunnel Template
=====
Id      Trnsfrm1  Trnsfrm2  Trnsfrm3  Trnsfrm4  ReverseRoute  ReplayWnd
-----
1       1         none      none      none      useSecurityPolicy 128
```



```
-----  
Number of templates: 1  
=====
```

```
*A:ALA-48>config>ipsec#
```

## 23.61 tunnels

### tunnels

#### Syntax

**tunnels** [**local-ip** *ip-address*] [**remote-ip** *ip-address*] [**isa-group** *wlan-gw-group-id*] [**member** [1 to 255]] [**summary**] [**detail**]

**tunnels** *local-ip ip-address remote-ip ip-address ue*

#### Context

[\[Tree\]](#) (show>router>wlan-gw tunnels)

#### Full Context

show router wlan-gw tunnels

#### Description

This command displays tunnel operation information.

#### Parameters

##### *ip-address*

Specifies the local IP address of this system that is the destination IP address in the tunnel header of received packets.

##### Values

ip-address: ipv4-address - a.b.c.d  
ipv6-address : x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x - [0 to FFFF]H  
d - [0 to 255]D

##### *ip-address*

Specifies the remote IP address of the access point that is the source IP address in the tunnel header of received packets.

##### Values

ip-address: ipv4-address - a.b.c.d  
ipv6-address : x:x:x:x:x:x:x (eight 16-bit pieces)

x:x:x:x:x:d.d.d.d

x - [0 to FFFF]H

d - [0 to 255]D

### **wlan-gw-group-id**

Specifies the identifier of the WLAN gateway ISA group that terminates GRE for this group interface.

**Values** 1 to 4

### **member**

Specifies the identifier of this WLAN gateway ISA group member.

**Values** 1 to 255

### **summary**

Displays a summary of the specified parameter.

### **detail**

Displays detailed information.

### **ue**

Displays information for the specified User Equipment.

## **Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## **Output**

The following output is an example of WLAN-GW tunnel information.

### **Output Example**



#### **Note:**

The remote/local IP addresses are locally generated for VLAN tunnels.

```
show router 50 wlan-gw tunnels
=====
Access Point tunnels
=====
Remote IP address      : fe80::3e8f:ffff:fe00:1901
Local IP address       : fe80::ff:fe02:202
ISA group ID           : 1
ISA group member ID   : 4
Time established       : 2015/01/07 17:42:01
Number of UE           : 1
Access Point MAC       : 00:00:00:00:00:05
AP MAC learn failed   : false
Encapsulation         : vlan
VLAN tag 1             : 1000
VLAN tag 2             : (None)
-----
No. of tunnels: 1
```

---

## tunnels

### Syntax

```
tunnels [router router-name] [remote-ip ip-address] [local-ip ip-address] [encapsulation encap [encap]  
[qtag1 qtag] [qtag2 qtag] [ap-sap sap-id] [min-num-ue minimum] [max-num-ue maximum] [ap-  
mac-learn-failed { true | false}] [get-num-results] [addr-family family] [ue-type ue-type [ue-type]]
```

### Context

[\[Tree\]](#) (show>subscr-mgmt>wlan-gw tunnels)

### Full Context

```
show subscriber-mgmt wlan-gw tunnels
```

### Description

This command displays all the WLAN-GW tunnels matching the specified criteria. Unlike the similar command in the **show>router>vprn** context, this command also includes information on tunnels containing ISA-only UEs such as migrant, DSM and I2-wholesale.

### Parameters

#### ***router-name***

Specifies the name or ID of the router where the tunnel terminates.

#### ***ip-address***

Specifies the IPv4 or IPv6 address indicating one, or both, of the tunnel endpoint IP addresses.

#### ***encap***

Specifies up to three tunnel encapsulation types, for example GRE, L2TP, or VLAN.

#### ***qtag***

Specifies the Q-tags specifying the I2-ap-delimiting tags.

#### ***sap-id***

Specifies the SAP-ID of the I2-ap SAP.

#### ***minimum***

Specifies the minimum number of UEs on the tunnel, after applying the UE type filter.

#### ***maximum***

Specifies the maximum number of UEs on the tunnel, after applying the UE type filter.

#### **ap-mac-learn-failed true | false**

Filters the results to display only tunnels that have learned the AP-MAC (**false**) or have not learned the AP-MAC (**true**).

#### **get-num-results**

Displays the total number of tunnels at the end of each tunnel record.

**family**

Specifies the tunnel's IP family type (IPv4 or IPv6).

**ue-type**

Filters up to five display based on the presence of specified UE types and is used in conjunction with **min-num-ue** and **max-num-ue**.

**Values** migrant, dsm, l2w, esm, or xcon

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of WLAN-GW tunnels.

**Output Example**

```
Node# show subscriber-mgmt wlan-gw tunnels
=====
Access Point tunnels
=====
Router                : 50
Encapsulation         : gre
Remote IP address     : 192.0.2.1
Local IP address      : 192.0.2.2
-----
First move time       : N/A
ISA group ID          : 1
ISA member ID         : 3
Interface             : grp-vprn_ue-2/1/2:50
Interface Service ID  : 4
AP MAC address        : 00:53:00:00:00:05
AP MAC learn failed   : false
AP SAP                : (Unknown)
Remote UDP port       : N/A
Tag 1                 : N/A
Tag 2                 : N/A
No. of UE             : 1
No. of migrant UE     : 0
No. of DSM UE         : 1
No. of layer-2 wholesale UE : 0
No. of cross-connect UE : 0
No. of ESM UE         : 0
-----
No. of Access point tunnels: 1
=====
```

## 23.62 twamp

twamp

### Syntax

twamp

### Context

[\[Tree\]](#) (show>test-oam twamp)

### Full Context

show test-oam twamp

### Description

Commands in this context display TWAMP information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

twamp

### Syntax

twamp

### Context

[\[Tree\]](#) (clear>test-oam twamp)

### Full Context

clear test-oam twamp

### Description

This command clears Two-Way Active Measurement Protocol statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## twamp

### Syntax

twamp

### Context

[\[Tree\]](#) (tools>dump>test-oam twamp)

### Full Context

tools dump test-oam twamp

### Description

This command dumps TWAMP information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 23.63 twamp-light

## twamp-light

### Syntax

twamp-light

### Context

[\[Tree\]](#) (show>test-oam>twamp twamp-light)

### Full Context

show test-oam twamp twamp-light

### Description

Commands in this context display TWAMP-Light information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## twamp-light

### Syntax

**twamp-light**

### Context

[\[Tree\]](#) (show>router twamp-light)

[\[Tree\]](#) (show>service>id twamp-light)

### Full Context

show router twamp-light

show service id twamp-light

### Description

This command displays TWAMP Light reflector information for either the base router or a specific service.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### Output

The following output is an example of TWAMP Light information, and [Table 616: Output Fields: TWAMP Light](#) describes the output fields.

### Output Example

```
show router twamp-light
-----
TWAMP-Light Reflector
-----
Admin State           : Up                UDP Port           : 862
IPv6 UDP Checksum 0   : Allow
Description           : (Not Specified)
Up Time               : 0d 00:02:24
Test Frames Received : 0                Test Frames Sent  : 0
-----

TWAMP-Light Reflector Prefixes
-----
Prefix                Description
-----
172.16.1.0/24
-----
No. of TWAMP-Light Reflector Prefixes: 1
-----

show service id 500 twamp-light
-----
TWAMP-Light Reflector
-----
Admin State           : Up                UDP Port           : 862
IPv6 UDP Checksum 0   : Disallow
Description           : TWAMP Light reflector VPRN 500
```

```

Up Time           : 0d 01:47:12
Test Frames Received : 6431           Test Frames Sent : 6431
-----
TWAMP-Light Reflector Prefixes
-----
Prefix           Description
-----
10.2.1.1/32      Process only 10.2.1.1 TWAMP Light
                  Packets
172.16.1.0/24    Process all 172.16.1.0 TWAMP
                  Light packets
-----
No. of TWAMP-Light Reflector Prefixes: 2
-----
    
```

Table 616: Output Fields: TWAMP Light

Label	Description
TWAMP Light Reflector	
Admin State	The administrative state of the reflector Up — The server or prefix is administratively enabled ( <b>no shutdown</b> ) in configuration Down — The server or prefix is administratively disabled ( <b>shutdown</b> ) in configuration
UDP Port	The UDP port that the reflector is listening on for test packets
IPv6 UDP Checksum 0	The processing of received IPv6 UDP checksum 0 packets is either allowed or disallowed
Up Time	The time since the server process was started, measured in days (d), hours, minutes, and seconds
Test Frames Received	The total number of TWAMP Light test packets received from session senders on the reflector
Test Frames Sent	The total number of TWAMP Light test packets transmitted by the reflector to session senders
Prefix	A list of prefixes from which the reflector allows TWAMP Light tests
Description	The configured description for the prefix

## twamp-light

### Syntax

**twamp-light** [interval seconds] [repeat repeat] [absolute | rate] [delay | loss]



## Context

**[Tree]** (monitor>oam-pm>session twamp-light)

## Full Context

monitor oam-pm session twamp-light

## Description

This command monitors the IP Two Way Active Measurement Protocol Light (TWAMP Light) statistics for the specified test's raw measurement interval.

## Parameters

### *seconds*

Specifies the time interval, in seconds.

**Values** 3 to 60

**Default** 10

### *repeat*

Specifies the number of times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Specifies that the raw statistics are displayed, without processing. No calculations are performed on the delta or rate statistics.

### *rate*

Specifies that the rate-per-second is displayed.

**Default** delta

### *delay*

Specifies the delay metrics are displayed.

**Default** delay

### *loss*

Specifies the loss metrics are displayed.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## twamp-light

### Syntax

**twamp-light**

### Context

[\[Tree\]](#) (show>oam-pm>stats>session twamp-light)

### Full Context

show oam-pm statistics session twamp-light

### Description

This command selects the session's TWAMP-light test for the statistical display.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 24 u Commands

### 24.1 ue

ue

#### Syntax

ue [*ieee-address*] [**detail**]

#### Context

[\[Tree\]](#) (show>call-trace>wlan-gw ue)

#### Full Context

show call-trace wlan-gw ue

#### Description

This command gives an overview of either all traces or a specific trace on the WLAN-GW.

#### Parameters

##### *ieee-address*

Displays information about the MAC address of this UE.

##### **detail**

Displays detailed information about the job.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of traces of the UE being monitored.

#### Output Example

```
Node# show call-trace hosts
=====
Call-trace hosts
=====
MAC address Mask-name      Status      Msgs
-----
00:0a:95:9d:68:16 N/A                running    16
-----
Number of call-trace debug jobs: 1
=====
```

```
Node# show call-trace hosts detail
=====
Call-trace detail
=====
MAC address           : 00:0a:95:95:34:0a           Status : running
      Capture format   : pcap
Nr. of captured msgs  : 4 Time limit           : 86400s
Size of captured msgs : 2620B Data limit           : 10MB
Started : NOV 12 2013, 15:28:17 UTC
Live output : N/A
-----
```

## ue

### Syntax

**ue** [*vlan qtag*] [*mpls-label label*] [*retail-svc-id service-id*] [*ssid service-set-id*] [*previous-access-point ip-address*] [*bd bridge-id*]

**ue mac** *ieee-address* [*bd bridge-id*]

### Context

[\[Tree\]](#) (show>subscr-mgmt>wlan-gw ue)

### Full Context

show subscriber-mgmt wlan-gw ue

### Description

This command displays User Equipment (UE) information.

### Parameters

#### *qtag*

Displays information about the VLAN Q-tag present in the traffic received from this UE.

**Values** 1 to 4095

#### *label*

Displays information about the MPLS label present in the traffic received from this UE.

#### *service-id*

Specifies an existing service ID. If no *svc-id* is specified then it indicates that the interface is a network interface in the Base router instance.

**Values** {*id* | *svc-name*}

*id*: 1 to 2147483647

*svc-name*: Specifies an existing service name, up to 64 characters (*svc-name* is an alias for input only. The *svc-name*

gets replaced with an id automatically by SR OS in the configuration)

**service-set-id**

Displays information about the Service Set ID (SSID) of this UE.

**ip-address**

Displays information about the IP address of the previous Access Point (AP) of this UE.

**bridge-id**

Displays specified HLE bridge domain information of this UE.

**Values** 1 to 4294967295

**ieee-address**

Displays information about the MAC address of this UE.

**Values** xx:xx:xx:xx:xx:xx or xx-xx-xx-xx-xx-xx

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of WLAN-GW information.

**Output Example**

```
System# show subscriber-mgmt wlan-gw ue
=====
User Equipments
=====
MAC address           : 00:02:00:00:00:39
-----
VLAN Q-tag            : 1
MPLS label            : (Not Specified)
Tunnel router         : 50
Tunnel remote IP address : 20C9::7:1:2
Tunnel local IP address  : 2032::1:1:7
Retail service        : N/A
SSID                  : 1
Previous Access Point IP : (Not Specified)
IMSI                  : (Not Specified)
Last move time        : 2013/07/02 07:45:31
-----
No. of UE: 1
=====
System#
```

## ue

### Syntax

```
ue [wlan-gw-group wlan-gw-group-id] [mda mda-id] [next-index index] [summary] [detail] [bd bridge-id] [ue-mac ieee-address] [ue-vlan vlan] [state-description state] [tunnel-router router-instance] [tunnel-source-ip ip-address] [tunnel-destination-ip ip-address] [tunnel-type tunnel-type] [ue-ip ipv4-address] [dhcp6-addr ipv6-address] [slaac-prefix ipv6-address] [aggregate-summary] [soft-quota-exhausted]
```

### Context

[\[Tree\]](#) (tools>dump>wlan-gw ue)

### Full Context

```
tools dump wlan-gw ue
```

### Description

This command dumps User Equipment (UE) information.

The **summary** option displays a count of UEs per ISA and the **aggregate-summary** displays a count of matched UEs over the whole WLAN-GW.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

### Output

Use the following command to display detailed UE information.

```
tools dump wlan-gw ue detail
```

### Output example

```
=====
Matched 1 session on ESA #1 VM #2
=====
Bridge Domain      : 0
UE-Mac             : 00:00:00:07:04:02      UE-vlan           : 41
UE IP Addr         : N/A
UE Timeout         : N/A
DHCPv6 Timeout    : N/A                  SLAAC Timeout     : N/A
DHCPv6 IA-NA ID   : N/A                  RA Timeout        : N/A
DHCPv6 Addr       : N/A
SLAAC Prefix      : N/A
Description        : L2-user
Auth/CoA-time     : 02/27/2023 14:24:57   Retail Service    : N/A
Tunnel MDA/VM     : esa-1/2                Tunnel Router     : 2000
Shaper            : Default
Tunnel Src IP     : 10.10.2.114
Tunnel Dst IP     : 72.1.0.1
Tunnel Type       : GRE                    Tunnel Class      : Access
GRE Protocol      : 0x6558                  GRE Version       : 0x0
MPLS Label        : N/A                    NGE Label         : N/A
=====
```

```

Anchor SAP      : esa-1/2/nat-out-ip:2049.3
Remote Type    : N/A
Remote Src IP  : N/A
Remote Dst IP  : N/A
AP-Mac        : Unknown
AP-SSID       : Unknown
Last-forward   : 02/27/2023 14:24:57
Session Timeout : None
Acct Update    : None
Acct Session-Id : N/A
Acct Policy    : N/A
NAT Policy     : N/A
Redirect Policy : N/A
IP Filter      : N/A
App-profile    : N/A
L2 Service     : MyVplsServiceName
Rx Oper PIR    : N/A
Tx Oper PIR    : N/A
Rx Frames      : 1
Tx Frames      : 0
Quota Direction : N/A
Hard Octets    : N/A
Remote Service : N/A
AP-RSSI       : Unknown
Last-move     : None
Idle Timeout   : 600 sec
Acct Interval  : N/A
Rx Oper CIR    : N/A
Tx Oper CIR    : N/A
Rx Octets      : 290
Tx Octets      : 0
Soft Octets    : N/A
    
```

-----  
 =====

## 24.2 uefi-vars

### uefi-vars

#### Syntax

**uefi-vars** *cpm-slot*

#### Context

[\[Tree\]](#) (tools>dump>system>security>secure-boot uefi-vars)

#### Full Context

tools dump system security secure-boot uefi-vars

#### Description

This command displays the secure-boot Unified Extensible Firmware Interface (UEFI) variables.

#### Parameters

***cpm-slot***

Specifies the CPM slot.

**Values** A, B

## Platforms

7750 SR-1-24D, 7750 SR-1-46S, 7750 SR-1-48D, 7750 SR-1-92S, 7750 SR-1x-48D, 7750 SR-1x-92S,  
7750 SR-s, 7950 XRS-20e

## 24.3 un-sid

### un-sid

#### Syntax

**un-sid** [mt {0 | 2}] [**prefix** *ipv6-prefix[/prefix-length]*] [**adv-router** *system-id | hostname*] [**algo** *algo-id*]

#### Context

**[Tree]** (show>router>isis>srv6 un-sid)

#### Full Context

show router isis segment-routing-v6 un-sid

#### Description

This command displays IS-IS SRv6 uN SIDs.

#### Parameters

##### *ipv6-prefix[/prefix-length]*

Displays routes only matching the specified IP address and length.

**Values** *ipv6-prefix[/prefix]*: x:x:x:x:x:x:x (eight 16-bit pieces)  
x:x:x:x:x:d.d.d.d  
x: [0 to FFFF]H  
d: [0 to 255]D  
*prefix-length*: 1 to 128

##### *system-id | hostname*

Displays information for the specific IS-IS advertising router. The host name can be up to 38 characters.

##### *algo-id*

Displays information for the specified algorithm.

**Values** 0 to 255

## Platforms

7450 ESS, 7750 SR, 7750 SR-s, 7950 XRS, VSR



## Output

Table 617: uN SID Output describes the uN SID output fields.

Use the following command to display uN SID information.

```
show router isis segment-routing-v6 un-sid
```

### Output example

```
=====
Rtr Base ISIS Instance 0 SRv6 uN SID Table
=====
Prefix                               AdvRtr           MT      Lvl/Typ
Sid                                  Behavior         Flags   Algo
-----
110::/96                             Dut-A           0       1/Int.
  110::/96                           End PSP         -       128
=====
```

Table 617: uN SID Output

Label	Description
Prefix	Displays the prefix
AdvRtr	Displays the advanced router information
MT	Displays the MT information
Lvl/Typ	Displays the level or type information
SID	Displays the Segment ID
Behavior	Displays the behavior information
Flags	Displays the flag information
Algo	Displays the algorithm information

## 24.4 uni

uni

### Syntax

uni [port-id]

### Context

[Tree] (show>elmi uni)

## Full Context

show elmi uni

## Description

This command displays information about E-LMI mode, status, number of EVCs (SAPs) configured on the port for all of the ports on the service router.

## Parameters

*port-id*

Displays UNI information for the specified port.

**Values** *slot/mda/port*

## Platforms

All

## Output

The following output is an example of elmi uni information.

### Output example: show elmi uni

```
*A:Dut-C# show elmi uni
=====
ELMI UNI-N Table
=====
Port      Mode  Status  #Evcs  Uni Identifier
-----
1/1/1     None  Up       0      10/100 Ethernet TX
1/1/2     None  Up       0      port-21
1/1/3     None  Up       0      10/100 Ethernet TX
1/1/4     None  Up       0      10/100 Ethernet TX
1/1/5     Uni-N Up       2      UNI115
1/1/6     None  Up       0      10/100 Ethernet TX
1/1/7     None  Up       0      10/100 Ethernet TX
1/1/8     None  Up       0      10/100 Ethernet TX
1/1/9     None  Up       0      10/100 Ethernet TX
1/1/10    None  Up       0      10/100 Ethernet TX
1/1/11    None  Up       0      10/100 Ethernet TX
1/1/12    None  Up       0      10/100 Ethernet TX
1/1/13    None  Up       0      10/100 Ethernet TX
1/1/14    None  Up       0      10/100 Ethernet TX
1/1/15    None  Up       0      10/100 Ethernet TX
1/1/16    None  Up       0      10/100 Ethernet TX
1/1/17    None  Up       0      10/100 Ethernet TX
...
=====
*A:Dut-C#

*A:Dut-C# show elmi uni 1/1/5
=====
Uni-N Detailed Information
=====
Uni Mode      : Uni-N           Link Status      : Up
Uni Identifier: UNI115
T391         : 10 seconds    T392             : 15 seconds
```

```
N393      : 4      UniType      : Bundling
Rx Enq. Time : 02/18/2010 17:11:44 Tx Status Time : 02/18/2010 17:11:44
Rx Enq Msg   : 24      Tx Status Msg  : 24
Rx Check Time : 02/18/2010 17:12:34 Tx Check Time   : 02/18/2010 17:12:34
Rx Inv. SeqNum: 0      Tx Async Status Msg : 0
Enq Timeouts : 0      Discard Msg     : 0
=====
*A:Dut-C#
```

## 24.5 unicast

### unicast

#### Syntax

```
unicast [router router-instance | service-name service-name]
```

#### Context

[\[Tree\]](#) (show>system>ptp unicast)

#### Full Context

```
show system ptp unicast
```

#### Description

This command displays unicast negotiation information.

#### Parameters

##### ***router-instance***

Displays the information for the specified router instance.

**Values**    router-name – Base  
              vprn-svc-id – 1 to 2147483647

##### ***service-name***

Specifies the service name, up to 64 characters, that is used to identify the router instance.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

#### Output

The following command displays Unicast information and [Table 618: Output fields: PTP unicast](#) describes the output fields.

```
show system ptp unicast
```

```
=====
```

```

IEEE 1588/PTP Unicast Negotiation Information
=====
Router
IP Address          Dir Type   Rate      Duration State   Time
-----
Base
1.4.1.21           Tx  Announce 1 pkt/2 s 300      Granted 04/21/2013 19:14:09
1
1.2.1.20           Rx  Announce 1 pkt/2 s 300      Granted 04/21/2013 19:14:19
1.2.1.20           Tx  Announce 1 pkt/2 s 300      Granted 04/21/2013 19:13:25
1.2.1.20           Tx  Sync     64 pkt/s 300      Granted 04/21/2013 19:13:30
1.2.1.20           Rx  DelayReq 64 pkt/s 300      Granted 04/21/2013 19:13:30
1.2.1.20           Tx  DelayRsp 64 pkt/s 300      Granted 04/21/2013 19:13:30
1.3.1.19           Rx  Announce 1 pkt/2 s 300      Granted 04/21/2013 19:13:16
1.3.1.19           Rx  Sync     64 pkt/s 300      Granted 04/21/2013 19:13:21
1.3.1.19           Tx  DelayReq 64 pkt/s 300      Granted 04/21/2013 19:13:21
1.3.1.19           Rx  DelayRsp 64 pkt/s 300      Granted 04/21/2013 19:13:21
2
1.1.1.21           Tx  Announce 1 pkt/2 s 300      Granted 04/21/2013 19:14:08
1.1.1.21           Tx  Sync     64 pkt/s 300      Granted 04/21/2013 19:14:15
1.1.1.21           Rx  DelayReq 64 pkt/s 300      Granted 04/21/2013 19:14:15
1.1.1.21           Tx  DelayRsp 64 pkt/s 300      Granted 04/21/2013 19:14:15
-----
PTP Peers          : 4
Total Packet Rate  : 578 packets/second
=====
    
```

The following command displays Unicast router information and [Table 618: Output fields: PTP unicast](#) describes the output fields.

```
show system ptp router unicast
```

```

=====
IEEE 1588/PTP Unicast Negotiation Information
=====
Router
IP Address          Dir Type   Rate      Duration State   Time
-----
1
1111:2222:3333:4444:5555:70:1:4
   Rx  Announce 1 pkt/2 s 300      Granted 04/21/2013 19:14:19
1111:2222:3333:4444:5555:70:1:4
   Tx  Announce 1 pkt/2 s 300      Granted 04/21/2013 19:13:25
1.2.1.20           Tx  Sync     64 pkt/s 300      Granted 04/21/2013 19:13:30
1.2.1.20
    
```

```

1.2.1.20      Rx DelayReq 64 pkt/s  300      Granted  04/21/2013 19:13:30
1.3.1.19      Tx DelayRsp 64 pkt/s  300      Granted  04/21/2013 19:13:30
1.3.1.19      Rx Announce 1 pkt/2 s  300      Granted  04/21/2013 19:13:16
1.3.1.19      Tx DelayReq 64 pkt/s  300      Granted  04/21/2013 19:13:21
1.3.1.19      Rx DelayRsp 64 pkt/s  300      Granted  04/21/2013 19:13:21
-----
PTP Peers      : 2
Total Packet Rate : 385 packets/second
=====
    
```

Table 618: Output fields: PTP unicast

Label	Description
Router	The name of the router instance
IP Address	The IP address of the PTP peer
Dir	The direction
Type	The type
Rate	The rate
Duration	The duration
State	The grant state
Time	The date and time
Input	The input packet statistics
Output	The output packet statistics

## unicast

### Syntax

**unicast**

### Context

[\[Tree\]](#) (show>service>id>ptp unicast)

### Full Context

show service id ptp unicast

### Description

This command displays unicast negotiation information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## Output

The following output is an example of PTP unicast information, and [Table 619: Output fields: system PTP unicast](#) describes the output fields.

### Output example

```
show service id ptp unicast

=====
IEEE 1588/PTP Unicast Negotiation Information
=====
Router
IP Address          Dir Type      Rate          Duration State   Time
-----
1
1111:2222:3333:4444:5555:70:1:4
    Rx Announce 1 pkt/2 s 300      Granted 04/21/2013 19:14:19
1111:2222:3333:4444:5555:70:1:4
    Tx Announce 1 pkt/2 s 300      Granted 04/21/2013 19:13:25
1.2.1.20
    Tx Sync      64 pkt/s    300      Granted 04/21/2013 19:13:30
1.2.1.20
    Rx DelayReq 64 pkt/s    300      Granted 04/21/2013 19:13:30
1.2.1.20
    Tx DelayRsp 64 pkt/s    300      Granted 04/21/2013 19:13:30
1.3.1.19
    Rx Announce 1 pkt/2 s 300      Granted 04/21/2013 19:13:16
1.3.1.19
    Tx DelayReq 64 pkt/s    300      Granted 04/21/2013 19:13:21
1.3.1.19
    Rx DelayRsp 64 pkt/s    300      Granted 04/21/2013 19:13:21
-----
PTP Peers           : 2
Total Packet Rate   : 385 packets/second
=====
```

Table 619: Output fields: system PTP unicast

Label	Description
Router	The name or ID of the router instance
IP Address	The IP address of the PTP peer
Dir	The direction (transmitted or received) of the unicast negotiation packet
Type	The unicast negotiation packet type
Rate	The rate of packet transmission or reception

Label	Description
Duration	The duration of the packet transmission or reception interval, in seconds
State	The state of the negotiation
Time	The date and time that the negotiation state was changed
PTP Peers	The total number of PTP peers
Total Packet Rate	The total number of unicast negotiation packets transmitted and received per second

## 24.6 unknown-origin

### unknown-origin

#### Syntax

**unknown-origin**

#### Context

[\[Tree\]](#) (show>subscr-mgmt>errors unknown-origin)

#### Full Context

show subscriber-mgmt errors unknown-origin

#### Description

This command lists errors of an unknown origin. Errors shown do have a corresponding SAP ID or a SDP ID.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 24.7 unreachable-route-table

### unreachable-route-table

#### Syntax

**unreachable-route-table***[ip-prefix[/prefix-length]] [ipv4 | ipv6] [longer | exact] [protocol protocol-name] [instance instance-id] [all]*

## Context

**[Tree]** (show>router unreachable-route-table)

## Full Context

show router unreachable-route-table

## Description

This command displays the unreachable route table.

## Parameters

### *ip-prefix[/prefix-length]*

Displays routes only matching the specified IP address and length.

#### Values

ipv4-address/prefix:	ipv4-address	a.b.c.d (host bits must be 0)
ipv4-prefix-length		0 to 32
ipv6-address/prefix:	ipv6-address	x:x:x:x:x:x:x (eight 16-bit pieces) x:x:x:x:x:d.d.d.d x [0 to FFFF]H d [0 to 255]D
prefix-length		1 to 128

### **ipv4**

Displays information for IPv4.

### **ipv6**

Displays information for IPv6.

### **longer**

Displays information for the longer configuration.

### **exact**

Displays information for the exact configuration.

### **protocol-name**

Displays information for the referenced protocol.

### **instance-id**

Displays information for the referenced instance.

### **all**

Displays information for all of the unreachable routes.

## Platforms

All



## Output

The following output is an example of unreachable route table information, and [Table 620: Output fields: Unreachable route table](#) describes the output fields.

### Output example

```
A:node-2# show router unreachable-route-table
=====
IPv6 Unreachable Route Table (Router: Base)
=====
Dest Prefix
Proto                               Age           Pref Metric
-----
2000::6/128
ISIS                                00h00m38s   15   4261412865
-----
No. of Routes: 1
=====
```

Table 620: Output fields: Unreachable route table

Label	Description
Dest Prefix	Displays the destination and prefix
Proto	Displays the protocol
Age	Displays the age
Pref	Displays the preference
Metric	Displays the metric
No. of Routes	Displays the number of routes

## 24.8 unreachable-routes

### unreachable-routes

#### Syntax

**unreachable-routes originated** [family] [prefix ip-prefix[/prefix-length]]

**unreachable-routes originated mt** mt-id-number [prefix ip-prefix[/prefix-length]]

#### Context

**[Tree]** (show>router>isis unreachable-routes)

#### Full Context

show router isis unreachable-routes

## Description

This command displays the unreachable routes originated by the router. The output can be filtered using family or IP prefix criteria.

## Parameters

### family

Keyword to display information about unreachable IPv6 or IPv4 unicast routes.

**Values** ipv4-unicast | ipv6-unicast

### ip-prefix/prefix-length

Displays the unreachable routes based on a specific IP prefix, or a specific IP prefix and prefix length.

<b>Values</b>	ipv4-address/prefix:	ipv4-address	a.b.c.d (host bits must be 0)
	ipv4-prefix-length		0 to 32
<b>Values</b>	ipv6-address/prefix:	ipv6-address	x:x:x:x:x:x:x (eight 16-bit pieces)
			x:x:x:x:x:d.d.d.d
			x [0 to FFFF]H
			d [0 to 255]D
	prefix-length		1 to 128

### mt-id-number

Displays the unreachable routes based on a specific Multitopology (MT) ID number.

**Values** 0 | 2

## Platforms

All

## Output

The following output is an example of unreachable-routes information, and [Table 621: Output fields: unreachable routes](#) describes the output fields.

### Output example

```
A:node-2>show>router>isis# unreachable-routes originated
=====
Rtr Base ISIS Instance 0 Unreachable Route Table (originated)
=====
Prefix                               Algo Metric      Tag           Time
SysID/Hostname                       MT   Lvl/Type      SpfVersion
-----
800::1/128                            0   4261412865 0             0
CFCF.CFCF.CFCF                        2   2/Int.      0
-----
No. of Routes: 1
```

Table 621: Output fields: unreachable routes

Label	Description
Prefix	Displays the unreachable route information for a prefix
Algo	Displays the unreachable route information for an algorithm
Metric	Displays the unreachable route information for a metric
Tag	Displays the unreachable route information for a tag
Time	Displays the current UPA lifetime counting down and is a value between 0 to 1800 seconds
SysID/Hostname	Displays the unreachable route information for a system ID or hostname
MT	Displays the unreachable route information for an MT ID
Lvl/Type	Displays the unreachable route information for a level or type
SpfVersion	Displays the unreachable route information for an SPF version
No. of Routes	Displays the number of routes

## 24.9 unsubscribe-from

### unsubscribe-from

#### Syntax

**unsubscribe-from** log-id *log-id*

#### Context

**[Tree]** (tools>perform>log unsubscribe-from)

#### Full Context

tools perform log unsubscribe-from

#### Description

This command cancels the subscription of the current CLI session to the specified CLI log.

## Parameters

### *log-id*

Specifies the log ID from which cancellation is requested.

**Values** 1 to 101

## Platforms

All

## 24.10 update-path

### update-path

## Syntax

```
update-path {lsp lsp-name path current-path-name new-path new-path-name}
```

## Context

[\[Tree\]](#) (tools>perform>router>mpls update-path)

## Full Context

```
tools perform router mpls update-path
```

## Description

This command enables you to instruct MPLS to replace the path of a primary or secondary LSP. The primary or secondary LSP path is indirectly identified via the *current-path-name* value. The same path name cannot be used more than once in a given LSP name.

This command applies to both CSPF LSP and to a non-CSPF LSP. This command will only work when the specified *current-path-name* has the adaptive option enabled. The adaptive option can be enabled at the LSP level or the path level.

The new path must have been configured in the CLI or provided via SNMP. The CLI command for entering the path is

```
configure router mpls path path-name
```

The command fails if any of the following conditions exist:

- The specified *current-path-name* of this LSP does not have the adaptive option enabled.
- The specified *new-path-name* value does not correspond to a previously defined path.
- The specified *new-path-name* value exists but is being used by any path of the same LSP, including this one.

When you execute this command, MPLS performs the following procedures:

- MPLS performs a single MBB attempt to move the LSP path to the new path.
- If the MBB is successful, MPLS updates the new path

- MPLS writes the corresponding NHLFE in the data path if this path is the current backup path for the primary.
- If the current path is the active LSP path, it updates the path and writes the new NHLFE in the data path that causes traffic to switch to the new path.
- If the MBB is not successful, the path retains its current value.
- The update-path MBB has the same priority as the manual re-signal MBB.

## Platforms

All

## 24.11 uplink

### uplink

#### Syntax

**uplink**

**uplink mgw-address-cache [arec] [snaptr] [srv]**

**uplink mgw-address-cache apn *apn-domain-string***

#### Context

[\[Tree\]](#) (show>router>gtp uplink)

#### Full Context

show router gtp uplink

#### Description

This command displays operational information related to the usage of GTP uplink interfaces (Gn, S2a, S2b) in this routing context.

#### Parameters

**arec**

Displays A-records.

**snaptr**

Displays Straightforward-NAPTR information.

**srv**

Displays SRV records.

***apn-domain-string***

Specifies the Access Point Name (APN) of this DNS cache entry.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of GTP uplink information.

### Output example

```
Node# show router 10 gtp uplink mgw-address-cache
=====
Mobile Gateway address cache
=====
APN : full.dotted.apn.apn.epc.mnc010.mcc206.3gppnetwork.org
-----
Mobile Gateway address : 5.20.1.2
Time left (s) : 3587
-----
No. of cache entries: 1
No. of Mobile gateways: 1
=====
```

## uplink

### Syntax

**uplink**

**uplink session imsi** *imsi* *apn* *apn-string*

**uplink session** [**peer-address** *ip-address*] [**router** *router-instance*] [**remote-control-teid** *teid*] [**local-control-teid** *teid*] [**detail**]

**uplink session imsi** *imsi*

### Context

[\[Tree\]](#) (show>subscr-mgmt>gtp uplink)

### Full Context

show subscriber-mgmt gtp uplink

### Description

This command displays box-wide operational information related to the GTP uplink interfaces (Gn, S2a, S2b).

### Parameters

***imsi***

Specifies the IMSI (International Mobile Subscriber Identity) of this UE.

***apn-string***

Specifies the APN (Access Point Name).

**ip-address**

Specifies the IP address of the Mobile Gateway (PGW or GGSN).

**router-instance**

Specifies the identifier of the virtual router instance where the GTP tunnel is terminated.

**remote-control-teid teid**

Specifies the remote control plane Tunnel Endpoint Identifier (TEID).

**local-control-teid teid**

Specifies the local control plane TEID.

**detail**

Displays detailed information.

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of GTP uplink information

**Output Example**

```
Node# show subscriber-mgmt gtp uplink session detail
=====
GTP sessions
=====
IMSI : 206100000000041
APN : full.dotted.apn.mnc010.mcc206.gprs
-----
Mobile Gateway router : "Base"
Mobile Gateway address : 5.20.1.2
Remote control TEID : 1119232
Local control TEID : 4293918976
Bearer 5 rem TEID : 1074861061
Bearer 5 loc TEID : 4293919013
-----
No. of GTP sessions: 1
=====
```

**uplink**

**Syntax**

**uplink**

**Context**

[\[Tree\]](#) (clear>router>gtp uplink)

**Full Context**

clear router gtp uplink

### Description

This command clears information related to the GTP uplink state for the routing context.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 24.12 upnp

### upnp

### Syntax

upnp

### Context

[\[Tree\]](#) (show>service upnp)

### Full Context

show service upnp

### Description

Commands in this context display UPnP policy parameters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 24.13 upnp-mappings

### upnp-mappings

### Syntax

upnp-mappings subscriber *sub-ident-string* protocol {tcp | udp} outside-port *port-number*

upnp-mappings subscriber *sub-ident-string*

### Context

[\[Tree\]](#) (clear>nat upnp-mappings)

### Full Context

clear nat upnp-mappings



## Description

This command removes UPnP mappings for the specified subscriber. If **protocol** and **outside-port** are not specified, all UPnP mappings for the subscriber are removed.

## Parameters

**subscriber** *sub-ident-string*

clears mappings for the specified subscriber.

**protocol** {**tcp** | **udp**}

Clears the mappings for the specified protocol.

**outside-port** *port-number*

Clears mappings for the specified outside-port.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 24.14 upnp-policy

### upnp-policy

## Syntax

**upnp-policy** *policy-name*

**upnp-policy** *policy-name* **statistics**

**upnp-policy**

## Context

[\[Tree\]](#) (show>service>upnp upnp-policy)

## Full Context

show service upnp upnp-policy

## Description

This command displays upnp-policy related information.

Without any parameters the system outputs a list of configured UPnP policies.

## Parameters

**policy-name**

The system displays the configuration of the specified policy.

**statistics**

The system displays statistics for the specified policy.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of this command.

### Output example

```

show service upnp upnp-policy
=====
UPnP policies
=====
Policy                Description
-----
test
-----
No. of UPnP policies: 1
=====

show service upnp upnp-policy "test"
=====
UPnP Policy test
=====
Description           : (Not Specified)
Mapping limit         : 256
Strict mode           : false
HTTP listening port   : 5000
Last Mgmt Change      : 01/26/2015 19:23:41
-----
Active mappings       : 2
Mapped subscribers    : 1
Associated subscribers : 1
=====

show service upnp upnp-policy "test" statistics
=====
UPnP Policy test Statistics
=====
rx SSDP M-SEARCH                : 109
rx HTTP GET device description   : 0
rx HTTP GET service description : 109
rx UPnP AddPortMapping           : 6
rx UPnP ClearPortMapping         : 0
rx UPnP DeletePortMapping        : 1
rx UPnP ForceTermination         : 0
rx UPnP GetConnectionTypeInfo    : 0
rx UPnP GetExternalAddress       : 6
rx UPnP GetGenericPortMappingEntry : 43
rx UPnP GetNATRSIPStatus         : 8
rx UPnP GetSpecificPortMappingEntry : 1
rx UPnP GetStatusInfo            : 49
rx UPnP RequestConnection        : 0
rx UPnP SetConnectionType        : 0
rx UPnP unsupported optional action : 6
rx UPnP invalid request         : 0
tx SSDP M-SEARCH                : 109
tx TCP reset                    : 0
tx HTTP OK                      : 109
tx UPnP OK                      : 101
tx UPnP error                   : 19
drop no memory                  : 0
    
```

```
portmapping created : 4
portmapping updated : 1
portmapping failed: conflict with other host : 0
portmapping failed: conflict with pinhole : 0
portmapping failed: hit limits : 0
portmapping failed: other reason : 0
rx HTTP (UN)SUBSCRIBE : 0
tx HTTP 501 Not Implemented : 0
drop rate limited : 0
=====
```

## 24.15 upnp-policy-statistics

### upnp-policy-statistics

#### Syntax

**upnp-policy-statistics** *policy-name*

#### Context

[\[Tree\]](#) (clear>nat upnp-policy-statistics)

#### Full Context

clear nat upnp-policy-statistics

#### Description

This command clears UPnP policy statistics.

#### Parameters

***policy-name***

Clears UPnP policy statistics for the specified policy.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 24.16 uptime

### uptime

#### Syntax

**uptime**

## Context

[\[Tree\]](#) (show uptime)

## Full Context

show uptime

## Description

This command displays the time since the system started.

## Platforms

All

## Output

The following output is an example of uptime information, and [Table 622: Uptime Output](#) describes the output field.

### Output example

```
A:ALA-1# show uptime
System Up Time      : 11 days, 18:32:02.22 (hr:min:sec)

A:ALA-1#
```

Table 622: Uptime Output

Label	Description
System Up Time	Displays the length of time the system has been up in days, hr:min:sec format.

## 24.17 url-filter

### url-filter

## Syntax

**url-filter** [*url-filter-name*]

**url-filter** *url-filter-name* **isa** *mda-id/esa-vm-id* [**detail**]

**url-filter** *url-filter-name* **web-service** [**profile** *profile-name*]

## Context

[\[Tree\]](#) (show>app-assure>group url-filter)

## Full Context

show application-assurance group url-filter

## Description

This command displays information about the configured url-filter policy along with some associated raw statistics. These output statistics are:

- Vlan Id: VLAN ID used by the aa interfaces
- Admin Status: Up / Down
- Oper Status: Up / Down
- Oper Flags: adminDown, no-aa-if, aa-if-down, icap-server-down
- Default Action: default policy action taken by the url-filter
- ICAP HTTP Redirect: HTTP redirect Policy
- AQP Referenced: Yes/No
- HTTP Request: Number of subscriber HTTP requests
- HTTP Errors: Impossible to send an ICAP request, this can be caused by either no TCP connection available, associated flow with a drop action due to another aqp policy, system resource exhausted
- ICAP Request: Number of ICAP request sent
- ICAP Errors: ICAP request timeout, unexpected ICAP response, internal TCP errors.
- Custom-x-header: Name of the custom-x-header, if configured. If it is not configured, the value is "Not Specified".

In addition to these counters the system counts the type of action taken by the url-filter policy (allow, block, redirect, default) as well as the type of responses received from the icap server (allow, block, redirect, late).

## Parameters

### *url-filter-name*

Specifies the name of the url-filter policy.

### *mda-id/esa-vm-id*

Specifies the mda-id/esa-vm-id reference of the ISA card.

### *detail*

Specifies detailed statistics related to the ISA card.

### *profile-name*

Specifies the name of a configured profile for web service, up to 256characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of url-filter information, and [Table 623: Web-service URL filter show command field descriptions](#) describes the output fields.

### URL filter show command output example

```
# show application-assurance group 1 url-filter "web-serv1" isa 7/2
=====
Application Assurance Group 1 URL Filter " web-serv1" ISA 7/2
=====
```

```
Description           : Url filter Webservice
Admin Status          : Up
Oper Status           : Down
Oper Flags             : web-service-down
DNS Oper Status       : Down
DNS Oper Flags        : unreachable
HTTP Request Filtering : all
AQP Referenced        : Yes
-----
URL Stats Summary
-----
Total Requests   : 0           Default Action   : 0
Requests Allowed: 0           Reqs Block/Redir: 0
-----
Local Filter
-----
allow-list          : allowlist1
  Admin Status      : Up
  Oper Status       : Up
  Oper Flags        : <none>
  Number of URLs    : 1
  URL-List Lookups  : 0
    Match           : 0
    Miss            : 0

deny-list           : denylist1
  Admin Status      : Up
  Oper Status       : Up
  Oper Flags        : <none>
  Number of URLs    : 1
  Default Action    : block-all
  HTTP Redirect     : (Not Specified)
  URL-List Lookups  : 0
    Match           : 0
    Miss            : 0
  Default Action    : 0

deny-list           : denylist2
  Admin Status      : Up
  Oper Status       : Up
  Oper Flags        : <none>
  Number of URLs    : 1
  Default Action    : block-all
  HTTP Redirect     : (Not Specified)
  URL-List Lookups  : 0
    Match           : 0
    Miss            : 0
  Default Action    : 0
-----
Web Service Filter
-----
Classifier           : web-service-1
Category-set-id     : 1
default-profile      : prof1
VLAN Id             : 1
FQDN                 : nokia-api.webtitancloud.com
DNS Address          : 12.0.0.100
Default Action      : allow
HTTP Redirect       : ws
AA Interface         : to_isa_7/2
Service              : VPRN 1
SAP Id              : 7/2/aa-svc:1
Client IP            : 10.1.1.2/31
```

```

Web Service Filter Stats
Class Ovrld Lkup : 0          Class Ovrld match: 0
Cache Lookup      : 0          Cache size       : 0
Cache match       : 0          Cache max size   : 20971520
Cache miss        : 0

URL Request       : 0          Default Action   : 0
URL Response      : 0          Late Response    : 0
  Allow           : 0          Packet Discard   : 0
  Block           : 0          Octet Discard    : 0
  Redirect        : 0

-----
ISA 7/2 Web Service Connection Stats
-----
Established Connections : 0 of 0 connections
Request Rate           : 0 per second
Round Trip Time        : 0 microseconds
=====
    
```

### Web-service URL filter show command output example

```

# show application-assurance group 1 url-filter "testFilter" web-service
-----
Web services for url-filter "testFilter"
-----
Category-set-id      : 1
-----
=====
Profile Categories
=====
Profile Name          Blocked Categories  Allowed Categories
-----
testProfile           1                   54
=====
    
```

```

# show application-assurance group 1 url-filter "testFilter" web-
service profile "testProfile"
-----
Web service profile "testProfile"
-----
Category-set-id      : 1
Description          :
-----
=====
Blocked Categories
=====
Category Id          Category Name
-----
25                   Personal Webpages
=====
=====
Allowed Categories
=====
Category Id          Category Name
-----
1                    Compromised
2                    Criminal Skills/Hacking
3                    Hate Speech
4                    Illegal Drugs
5                    Phishing/Fraud
6                    Spyware and Malicious Sites
7                    Nudity
8                    Mature
    
```

```

9      Pornography/Sex
10     Violence
11     Weapons
12     Anonymizer
13     Computers and Technology
14     Download Sites
15     Translator
16     Alcohol
17     Health
18     Pharmacy
19     Tobacco
20     Gambling
21     Games
22     Cars/Transportation
23     Dating & Relationships
24     Home/Leisure
26     Restaurants
27     Sports and Recreation
28     Travel
29     Government
30     Military
31     Non-profits
32     Politics and Law
33     Religion
34     Education
35     Art
36     Entertainment and Videos
37     Humor
38     Music
39     News
40     Finance
41     Internet Watch Foundation List
42     Shopping
43     Chat/IM
44     Community Sites
45     Social Networking
46     Web-based Email
47     Portal Sites
48     Search Engines
49     Online Ads
50     Business/Services
51     Job Search
52     Real Estate
53     Spam
54     Miscellaneous
55     Uncategorized
=====
    
```

Table 623: Web-service URL filter show command field descriptions

Label	Description
Category-set-id	The ID of the category set used for URL categorization.
Description	The description of the web-service profile.
Profile Name	The name of the web-service profile.
Blocked Categories	The blocked categories for the web-service profile.
Allowed Categories	The allowed categories for the web-service profile.



Label	Description
Category Id	The ID of the blocked or allowed category.
Category Name	The name of the blocked or allowed category.

## 24.18 url-list

### url-list

#### Syntax

`url-list url-list-name`

#### Context

[\[Tree\]](#) (show>app-assure>group url-list)

#### Full Context

show application-assurance group url-list

#### Description

This command displays information about the configured URL list.

#### Parameters

*url-list-name*

Specifies the name of the URL list.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output are examples of show URL list information, and [Table 624: URL List Show Command Field Descriptions](#) describes the URL list show command output fields.

#### Output example

```
# show application-assurance group 1 url-list "allow-list1"
=====
Application Assurance Group 1 url-list "allow-list1"
=====
Description : Default Url-list object
Size : standard
Host Expressions : enabled
Admin Status : Up
Oper Status : Up
Oper Flags : <none>
File deployed to ISAs : Yes
```

```

-----
Upgrade Statistics
-----
Last Success : 06/19/2020 02:57:06
Deployed
File Name : cf1:/expr_15000.vm.only.expr
URL Entries : 15000 (100.00% full)
URL Characters : 249390 ( 5.08% full)
URL Host Expr Entries: 15000 (100.00% full)
Blank/Comment Lines : 60519
Last Attempt : 06/19/2020 02:57:06
Result : Success
    
```

Table 624: URL List Show Command Field Descriptions

Label	Description
Description	The description of the URL list
Size	[standard   extended] Size parameter for the URL list
Host Expressions	If the host is enabled or disabled
Admin Status	[Up   down] - Administrative status of the URL list
Oper Status	[Up   down] - Operational status of the URL list
Oper Flags	[admin-down   file-does-not-exist  invalid-file-format   too-many-urls   switch-over-error]
File Deployed to ISA	[Yes   No] - This flag describes if the file located in the compact flash is the one deployed in the ISA, in the event the file is overwritten and before the admin upgrade command is used this flag will display "No".
<b>Upgrade Statistics</b>	
Last Success	Last time the list was successfully upgraded
File Name	File name for the last successful upgrade
URL Entries	Number of URLs loaded at the last success and percentage to full
URL Characters	Number of characters loaded at the last success and percentage to full
URL Host Expr Entries	URL host expression entries
Blank/CommentLines	Number of blank or commented out lines
Last Attempt	Last time the operator tried to upgrade the list
Result	[Success   Failure]. Result of the last upgrade
File Name	File name for the last upgrade attempt

## 24.19 usage-monitor

### usage-monitor

#### Syntax

```
usage-monitor app-group [app-group-name] count
usage-monitor application [application-name] count
usage-monitor charging-group [charging-group-name] count
usage-monitor count
usage-monitor status
```

#### Context

[\[Tree\]](#) (show>app-assure>group>aa-sub usage-monitor)

#### Full Context

```
show application-assurance group aa-sub usage-monitor
```

#### Description

This command displays per-subscriber usage-monitoring statistics.

#### Parameters

***app-group-name***

Specifies an application group name, up to 32 characters.

***application-name***

Specifies an application name, up to 32 characters.

***charging-group-name***

Specifies a charging group name, up to 32 characters.

**count**

Displays counters.

**status**

Displays the status.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 24.20 user

```
user
```

### Syntax

```
user [user-name] [detail]
```

```
user [user-name] lockout
```

### Context

[\[Tree\]](#) (show>system>security user)

### Full Context

```
show system security user
```

### Description

This command displays user account information.

If no command line options are specified, summary information for all users is displayed.

### Parameters

#### *user-name*

Displays information for the specified user.

**Default** All users

#### *detail*

Displays detailed user information to the summary output.

#### *lockout*

Displays information about any users who are currently locked out.

### Platforms

All

### Output

The following outputs are examples of user output information, and [Table 625: Show system security user output fields](#) describes the output fields.

#### Output example

```
A:node-2# show system security user
```

```
=====
```

```
Users
```

```
=====
```

User ID	New Access Pwd	Permissions	Password Expires	Login Attempt	Failed Logins	Local Conf
---------	----------------	-------------	------------------	---------------	---------------	------------

```

-----
admin      n   bt cc -- gr li nc sp -- sc tc   never   3     0     y
-----
Number of users : 1
Permissions: (bt) Bluetooth, (cc) Console port CLI, (fp) FTP, (gr) gRPC,
             (li) LI, (nc) NETCONF, (sp) SCP/SFTP, (sn) SNMP, (sc) SSH CLI,
             (tc) Telnet CLI
=====

A:node-2# show system security user detail

=====
Users
=====
User ID      New Access      Password Login   Failed Local
            Pwd Permissions Expires  Attempt Logins Conf
-----
admin       n   bt cc -- gr li nc sp -- sc tc   never   3     0     y
-----
Number of users : 1
Permissions: (bt) Bluetooth, (cc) Console port CLI, (fp) FTP, (gr) gRPC,
             (li) LI, (nc) NETCONF, (sp) SCP/SFTP, (sn) SNMP, (sc) SSH CLI,
             (tc) Telnet CLI
=====

User Configuration Detail
=====
user id      : admin
-----
console parameters
-----
new pw required : no                cannot change pw : no
home directory  :
restricted to home : no
save when restrict*: no
login exec file :
profile         : administrative
locked-out      : no
-----
snmp parameters
-----
auth protocol  : hmac-sha2-512
auth key       : ffb8bb4392ccab627d903db396cd928fdde5ac8cdb78e7b6ecb39bde2c
                3ec67c8380cd0d91dfe6f30c041d9819a34e297994c3b759e68f2db075
                4bc408e3a001
privacy protocol : cfb128-aes-256
privacy key     : ffb8bb4392ccab627d903db396cd928fdde5ac8cdb78e7b6ecb39bde2c
                3ec67c
group           : moje
=====

A:node-2# show system security user lockout

=====
Currently Failed Login Attempts
=====
User ID Remaining Login attempts Remaining Lockout Time (min:sec)
-----
user123 N/A 9:56
-----
Number of users : 1
=====
    
```

Table 625: Show system security user output fields

Label	Description
User ID	The name of a system user.
<b>Users</b>	
New Pwd	y — The user must change their password at the next login. n — The user does not need to change their password at the next login.
Access Permissions	The user can access: bt — Bluetooth cc — console port CLI fp — FTP gr — gRPC li — LI nc — NETCONF sp — SCP/SFTP sn — SNMP sc — SSH CLI tc — Telnet CLI
Password Expires	The number of days after which the user must change their password.
Login Attempts	The number of times that the user has attempted to log in, irrespective of whether the login succeeded or failed.
Failed Logins	The number of unsuccessful login attempts.
Local Conf	y — Password authentication is based on the local password database. n — Password authentication is not based on the local password database.
Number of users	The total number of listed users.
<b>User Configuration Detail</b>	
new pw required	yes — The user must change their password at the next login. no — The user does not need to change their password at the next login.
cannot change pw	yes — The user does not have the ability to change their password.

Label	Description
	no — The user has the ability to change their password.
home directory	The local home directory for the user for both console and FTP access.
restricted to home	yes — The user is not allowed to navigate to a directory higher in the directory tree on the home directory device. no — The user is allowed to navigate to a directory higher in the directory tree on the home directory device.
save when restricted	Whether configuration save operations are allowed when the user is restricted to home.
login exec file	The user's login exec file which executes whenever the user successfully logs in to a console session.
profile	The security profiles associated with the user.
locked-out	Whether the user is currently locked out, and, if they are locked out, how much time remains before the user can attempt to log into the node again.
<b>SNMP Parameters</b>	
auth protocol	The SNMPv3 authentication protocol.
auth key	The SNMPv3 authentication key.
privacy protocol	The SNMPv3 privacy protocol.
privacy protocol	The SNMPv3 privacy key.
group	The group for which the protocols apply.
<b>Currently Failed Login Attempts</b>	
Remaining Login Attempts	The number of login attempts remaining before the user is locked out.
Remaining Lockout Time (min:sec)	The number of minutes and seconds remaining until the lockout expires and the user can attempt to log in again.

With the introduction of the PKI on an SR OS (SSH server) the authentication process can be done via PKI or password. The SSH client usually authenticates via PKI and password if PKI is configured on the client. In this case, the PKI takes precedence over the password in most clients.

All client authentications are logged and display in the **show>system>security>user detail**. The following table lists the rules where pass and fail attempts are logged.

Table 626: Pass/fail login attempts

Authentication order	Client (such as, PuTTY)	Server (such as SR OS)		CLI show system security attempts (SR OS)	
	Private key programmed	Public key configured	Password configured	Logins attempts	Failed logins
1. Public Key	Yes	Yes	N/A	Increment	
2. Password	Yes	Yes (No match between client and server. Go to password.)	Yes	Increment	
	Yes	No	Yes	Increment	
	No	N/A	Yes	Increment	
	No	N/A	No		Increment
1. Public Key (only)	Yes	Yes	N/A	Increment	
	Yes	Yes (No match between client and server. Go to password.)			Increment
	Yes		N/A		Increment
	No		N/A		Increment

## 24.21 users

### users

#### Syntax

users

#### Context

[\[Tree\]](#) (show users)

#### Full Context

show users



## Description

Displays console user login and connection information.

## Platforms

All

## Output

The following output is an example of user information, and [Table 627: Show users output fields](#) describes the output fields.

### Output example: Console users

```
*A:node-1# show users
=====
User          Type      Login time      Idle time
Session ID   From
=====
6            --            --            3d 10:11:02 --
admin
83          192.168.0.10  SSHv2          12OCT2018 20:44:15  0d 00:00:50 A-
admin
#84        192.168.0.10  SSHv2          12OCT2018 21:09:25  0d 00:00:00 --
-----
Number of users: 2
'#' indicates the current active session
'A' indicates user is in admin mode
=====
```

Table 627: Show users output fields

Label	Description
User	The user name.
Type	The user is authorized this access type.
From	The originating IP address.
Login time	The time the user logged in.
Idle time	The amount of idle time for a specific login.
Number of users	Displays the total number of users logged in.

## 24.22 utilization

### utilization

#### Syntax

**utilization** [detail]

#### Context

[\[Tree\]](#) (show>chassis>power-management utilization)

#### Full Context

show chassis power-management utilization

#### Description

This command displays power management utilization.

#### Parameters

**detail**

Displays detailed breakdown of devices.

#### Platforms

7750 SR-1s, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s, 7950 XRS

#### Output

The following output is an example of power management utilization information, and [Table 628: Output fields: show chassis power-management utilization](#) describes the output fields.

#### Output example: show chassis power-management utilization

```
*A:Dut-A# show chassis power-management utilization
=====
Chassis Power Utilization
=====
                SUPPLY                PEAK DEMAND
Power Capacity  : 22000.00 Watts      Fan           : 695.00 Watts ( 3%)
Safety Level    : 13203.00 Watts (100%) IO Module    : 7163.09 Watts ( 33%)
Alert Level     : 0.00 Watts          CPM Module   : 392.86 Watts ( 2%)
                                         Fabric Module: 1622.25 Watts ( 7%)
                                         MDA Module  : 6023.07 Watts ( 27%)+
                                         CCM Module  : 50.82 Watts ( 0%)
                                         Peak Util.  : 9924.02 Watts ( 45%)
                                         CURRENT DEMAND
                                         Current Util.: 9623.01 Watts ( 44%)
=====
+ Power utilization of device already included in IO Module value
=====
```

**Output example: show chassis power-management utilization detail**

```

*A:DUT-A# show chassis power-management utilization
=====
Chassis Power Zone 1 Utilization
=====
                SUPPLY                                PEAK DEMAND
Power Capacity   : 24000.00 Watts                    Chassis/Fan    : 635.16 Watts ( 3%)
                                                         IO Module      : 355.67 Watts ( 1%)
                                                         CPM Module     : 546.64 Watts ( 2%)
                                                         Fabric Module  : 746.00 Watts ( 3%)
                                                         MDA Module     : 748.69 Watts ( 3%)
                                                         XIOM Module    : 476.29 Watts ( 2%)
                                                         Peak Util.     : 3508.45 Watts (15%)

Mode             : basic                               Current util.   : 3356.82 Watts (14%)
Reserved Power   : 6000.00 Watts                       Safety Level    : 2892.00 Watts (20%)
Util. + Reserve  : 9356.82 Watts ( 39%)                Safety Alert    : +1000.00 Watts
Remaining Power  : 14643.18 Watts                       Alert Level     : 3892.00 Watts (26%)
=====
*A:DUT-A# show chassis power-management utilization detail
=====
Chassis Power Zone 1 Utilization (detail)
=====
                SUPPLY                                PEAK DEMAND
Power Capacity   : 24000.00 Watts                    Chassis/Fan
Power Module 1/1 : 6000.00 Watts                       1/1            : 86.06 Watts ( 0%)
Power Module 1/2 : 6000.00 Watts                       1/2            : 77.45 Watts ( 0%)
Power Module 1/3 : 0.00 Watts                           1/3            : 76.62 Watts ( 0%)
Power Module 1/4 : 0.00 Watts                           1/4            : 86.06 Watts ( 0%)
Power Module 1/5 : 0.00 Watts                           1/5            : 76.62 Watts ( 0%)
Power Module 1/6 : 0.00 Watts                           1/6            : 77.45 Watts ( 0%)
Power Module 1/7 : 0.00 Watts                           1/7            : 77.45 Watts ( 0%)
Power Module 1/8 : 0.00 Watts                           1/8            : 77.45 Watts ( 0%)
Power Module 1/9 : 0.00 Watts                           IO Module
Power Module 1/10: 0.00 Watts                           Slot 2         : 355.67 Watts ( 1%)
Power Module 2/1 : 6000.00 Watts                       CPM Module
Power Module 2/2 : 6000.00 Watts                       Slot A         : 276.28 Watts ( 1%)
Power Module 2/3 : 0.00 Watts                           Slot B         : 270.36 Watts ( 1%)
Power Module 2/4 : 0.00 Watts                           Fabric Module
Power Module 2/5 : 0.00 Watts                           Sfm 1         : 94.78 Watts ( 0%)
Power Module 2/6 : 0.00 Watts                           Sfm 2         : 91.44 Watts ( 0%)
Power Module 2/7 : 0.00 Watts                           Sfm 3         : 92.56 Watts ( 0%)
Power Module 2/8 : 0.00 Watts                           Sfm 4         : 94.78 Watts ( 0%)
Power Module 2/9 : 0.00 Watts                           Sfm 5         : 93.67 Watts ( 0%)
Power Module 2/10: 0.00 Watts                           Sfm 6         : 91.44 Watts ( 0%)
                                                         Sfm 7         : 93.67 Watts ( 0%)
                                                         Sfm 8         : 93.67 Watts ( 0%)
                                                         MDA Module
                                                         MDA 2/1       : 582.28 Watts ( 2%)
                                                         MDA 2/x2/1    : 72.63 Watts ( 0%)
                                                         MDA 2/x2/2    : 93.77 Watts ( 0%)
                                                         XIOM Module
                                                         XIOM 2/x2     : 476.29 Watts ( 2%)
                                                         Peak Util.     : 3508.45 Watts (15%)

Mode             : basic                               Current util.   : 3329.57 Watts (14%)
Reserved Power   : 6000.00 Watts                       Safety Level    : 2892.00 Watts (20%)
Util. + Reserve  : 9329.57 Watts ( 39%)                Safety Alert    : +1000.00 Watts
Remaining Power  : 14670.43 Watts                       Alert Level     : 3892.00 Watts (26%)
=====
*A:DUT-A#
    
```

*Table 628: Output fields: show chassis power-management utilization*

Label	Description
SUPPLY	
Power Capacity	Indicates the total amount of power available to the chassis.
Safety Level	Specifies the configured Power Safety Level, which is a percentage of the worst case power consumption level.
Alert Level	Specifies the configured power level in watts, which causes the system to raise an alarm if the available power level drops below a set level.
DEMAND	
Fan	Specifies the amount of power used for the fan tray indicated.
IO Module	Specifies the amount of power used for the IO Module indicated.
CPM Module	Specifies the amount of power used for the CPM indicated.
Fabric Module	Specifies the amount of power used for the SFM indicated.
MDA Module	Specifies the amount of power used for the line card indicated.
Current Util.	Specifies the total amount of power used for all system elements.
Peak Util.	Specifies peak utilization starting from bootup.

## 25 v Commands

### 25.1 vas-filter

#### vas-filter

##### Syntax

**vas-filter** *name* [**entry** [*entry*]]

**vas-filter**

##### Context

[\[Tree\]](#) (show>subscr-mgmt>isa-svc-chain vas-filter)

##### Full Context

show subscriber-mgmt isa-service-chaining vas-filter

##### Description

This command displays VAS filter information.

##### Parameters

###### *name*

Displays information about the specified name of the VAS filter.

###### *entry*

Displays information about the specified VAS filter entry

**Values** 0 to 4294967295

##### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

##### Output

The following output is an example of VAS filter information.

##### Output Example

```
show subscriber-mgmt isa-service-chaining vas-filter "foo"
=====
ISA Service Chaining - VAS Filter "vas-filter"
=====
Description           : (Not Specified)
-----
```

```

Entry                : 1
Admin State          : in-service
Description           : (Not Specified)
Match
  Protocol            : udp
  Foreign IP          : 12.1.1.1/24
  Foreign Port        : 2000
Action upstream
  Fail Action         : forward
Forwarding
  Forward IP          : 40.1.0.1
  Service              : 11
  ESI                 : N/A
Network Service Header
  Service Path        : 32
  Service Index       : 2
  Insert Sub-Id       : disabled
  Meta Data           : 0xaabbccdd
Action downstream
  Fail Action         : forward
Forwarding
  Forward IP          : 30.1.0.1
  Service              : 11
  ESI                 : N/A
Network Service Header
  Service Path        : 32
  Service Index       : 2
  Insert Sub-Id       : disabled
  Meta Data           : 0xaabbccdd
    
```

Table 629: Service Chaining VAS Filter Field Descriptions

Label	Description
Description	The text string describing the VAS filter
Entry	The ID of the entry in the VAS filter
Admin State	The administrative state of the entry in the VAS filter
Match	Protocol — The IP protocol to match in this entry of the VAS filter Foreign IP — The foreign IP address to match in this entry of the VAS filter Foreign Port — The foreign port to match in this entry of the VAS filter
Action	upstream — Indicates the upstream direction for the action in the VAS filter entry downstream — Indicates the downstream direction for the action in the VAS filter entry
Fail Action	Forwarding IP — The forwarding Service Function IP address for the action in a VAS filter entry Service — The forwarding service for the action in a VAS filter entry

Label	Description
	ESA — The ESI for the action in a VAS filter entry
Network Service Header	Service Path — The path ID used to construct an NSH (Network Service Header) for the action in a VAS filter entry
	Service Index — The service ID used to construct an NSH for the action in a VAS filter entry
	Insert Sub-ID disabled — The subscriber ID is not inserted with meta data to construct an NSH for the action in a VAS filter entry enabled — The subscriber ID is inserted with meta data to construct an NSH for the action in a VAS filter entry
	Meta Data — The opaque metadata used to construct an NSH (Network Service Header) for the action in a VAS filter entry

## 25.2 vas-tunnel

### vas-tunnel

#### Syntax

**vas-tunnel** [*connection-id*]

#### Context

[\[Tree\]](#) (show>router>l2tp vas-tunnel)

#### Full Context

show router l2tp vas-tunnel

#### Description

This command displays L2TP VAS tunnel operational information.

#### Parameters

***connection-id***

Specifies the identification number for an L2TP VAS tunnel connection.

**Values** 14294967295

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of L2TP VAS tunnel information.

### Output Example

```
*A:Dut-C# show subscriber-mgmt steering-profile "steeringprof01"
=====
Steering Profile "steeringprof01"
=====
Operational State      : in-service
Reference Count       : 1
Description            : LAC Traffic Steering Profile 01
Access Router         : access_router
Network Nexthop       : 10.10.20.2
Network Router        : network_router
=====
*A:Dut-C#

*A:Dut-C# show router service-name "access_router" l2tp vas-tunnel
=====
L2TP VAS Tunnel Summary (222)
=====
Conn ID   Loc-Tu-ID  Rem-Tu-ID  Base-vRtrID
-----
598212608 9128       1          Base
-----
No. of VAS Tunnels: 1
=====
*A:Dut-C#

*A:Dut-C# show router service-name "access_router" l2tp vas-tunnel 598212608
=====
L2TP Tunnel 598212608 (222)
=====
Transport Type          : udpIp
Router ID               : 222
Base Router ID          : Base
Local Connection ID     : 598212608
Local Tunnel ID         : 9128
Local IP Address        : 10.20.1.3
Local UDP Port          : 1701
Remote Connection ID    : 65536
Remote Tunnel ID        : 1
Remote IP Address       : 10.10.40.2
Remote UDP Port         : 7777
-----
Sessions
-----
Loc Session Conn ID  Loc Session ID      Rem Session Conn ID  Rem Session ID
-----
598227315          14707               65537                 1
-----
No. of Sessions: 1
-----
*A:Dut-C#

*A:Dut-C# show service id "pppoe_service" pppoe session l2tp-connection-id 598227315 detail
=====
```



```

PPPoE sessions for svc-id 111
=====
Sap Id           Mac Address      Sid  Up Time          Type
  IP/L2TP-Id/Interface-Id          MC-Stdby
-----
1/1/1           00:10:94:00:00:01 1    0d 00:45:26     lac
  598227315
PPP User-Name      : user01
Subscriber-interface : subif01
Group-interface    : grpif01
Subscriber         : "sub01"
Sub-Profile-String : "subprof01"
SLA-Profile-String : "slaprof01"
SPI group ID       : (Not Specified)
ANCP-String        : ""
Int-Dest-Id        : ""
App-Profile-String : ""
Category-Map-Name : ""
Acct-Session-Id    : "1412FF000000005E85A5C6"
Sap-Session-Index : 1
L2TP Router Name   : Base
L2TP Group Name    : default_radius_group
L2TP Assignment ID : unnamed
L2TP Steering Profile: steeringprof01
L2TP Steering State : steered
Circuit-Id         :
Remote-Id          :
Radius Session-T0  : N/A
Radius Class       :
Radius User-Name   : user01
Logical-Line-Id    :
Service-Name       :
-----
Number of sessions : 1
=====
    
```

## 25.3 vccv-bfd

### vccv-bfd

#### Syntax

**vccv-bfd** [session]

#### Context

[\[Tree\]](#) (show>service>id vccv-bfd)

#### Full Context

show service id vccv-bfd

#### Description

This command shows whether VCCV BFD is configured for a particular service and information about the VCCV session state.

The **show>service>id>vccv-bfd session** command gives a summary of all the VCCV sessions. Using both the sdp-id and the vc-id parameters gives VCCV BFD session information about a specific spoke-SDP.

For services where auto-discovery and signaling are used (for example, BGP VPWS, VPLS, and BGP-AD VPLS), use the **show>service>id>detail** command to determine the sdp-id and vc-id parameters allocated by the system.

## Parameters

### session

Displays a summary of all VCCV sessions.

## Platforms

All

## Output

The following output is an example of VCCV BFD information.

### Output Example

```
*A:Dut-C# show service id 1000 vccv-bfd session
=====
BFD Session
=====
Interface/Lsp Name          State          Tx Intvl  Rx Intvl  Multipl
Remote Address/Info        Protocols     Tx Pkts   Rx Pkts   Type
LAG port/sdp-id:vc-id     LAG ID/SvcId
-----
N/A                        Up (3)        1000      1000      3
N/A                        vccv         152       151       central
100:100                    1000
-----
No. of BFD sessions: 1
=====
```

## vccv-bfd

## Syntax

**vccv-bfd [session]**

## Context

[\[Tree\]](#) (show>service vccv-bfd)

## Full Context

show service vccv-bfd

## Description

This command displays the VCCV BFD session for the system.

## Platforms

All

## 25.4 version

### version

#### Syntax

**version**

#### Context

[\[Tree\]](#) (show>app-assure version)

#### Full Context

show application-assurance version

#### Description

This command displays the versions of the isa-aa.tim used by the CPM and the AA ISAs.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of version information.

#### Output Example

```
A:ALU>show>app-assure# version
=====
Versions of isa-aa.tim in use
=====
CPM           : TiMOS-M-7.0.R4
1/1           : TiMOS-I-7.0.R1
2/1           : TiMOS-I-7.0.R1
3/2           : TiMOS-I-7.0.R1
=====
A:ALU>show>app-assure#
```

### version

#### Syntax

**version group-interface** [ **fwd-service service-id**] *ip-in-name*

**version group-interface all**

**version host** *ip-address*

## version host all

**version** [**interface** *ip-int-name* | *ip-address*]

### Context

[\[Tree\]](#) (clear>router>igmp version)

### Full Context

clear router igmp version

### Description

This command clears the IGMP version on a specified interface or IP address.

### Parameters

#### **group-interface** *interface-name*

Clears the IGMP version on the specified group interface.

#### **group-interface** all

Clears the IGMP version on all group interfaces.

#### **service-id**

Specifies the service ID.

**Values** service-id: 1 to 2148278386  
svc-name: up to 64 characters.

#### **host** *ip-address*

Clears the IGMP version on the specified host.

#### **host** all

Clears the IGMP version on all hosts.

#### **interface** *ip-int-name*

Clears the IGMP version on the specified interface.

#### **interface** *ip-address*

Clears the IGMP version on the specified IP address.

### Platforms

All

## version

### Syntax

**version group-interface** [**fwd-service** *service-id*] *ip-int-name*

**version group-interface** all

**version host** *ipv6-address*

## version host all

**version** [*ip-int-name* | *ipv6-address*]

### Context

[\[Tree\]](#) (clear>router>mld version)

### Full Context

clear router mld version

### Description

This command clears MLD version parameters.

### Parameters

#### **group-interface** *interface-name*

Clears the MLD version on the specified group interface.

#### **group-interface** all

Clears the MLD version on all group interfaces.

#### **service-id**

Clears the MLD version information for the service ID.

**Values**    service-id: 1 to 2148278386  
              svc-name: up to 64 characters.

#### **host** *ipv6-address*

Clears the MLD version on the specified host.

#### **host** all

Clears the MLD version on all hosts.

#### **ip-int-name**

Clears version information for the specified MLD interface name.

#### **ipv6-address**

Clears version information for the specified MLD IPv6 address.

### Platforms

All

version

### Syntax

**version**

### Context

[\[Tree\]](#) (show version)

### Full Context

show version

### Description

This command displays system version information.

### Platforms

All

## 25.5 video

video

### Syntax

video

### Context

[\[Tree\]](#) (clear video)

### Full Context

clear video

### Description

Commands in this context clear video related commands.

### Platforms

7450 ESS, 7750 SR, 7750 SR-s

video

### Syntax

video

### Context

[\[Tree\]](#) (show video)

### Full Context

show video

## Description

Commands in this context display video information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s

## 25.6 video-group

### video-group

## Syntax

**video-group** [*video-group-id*] [**peak-last-hour**]

## Context

[\[Tree\]](#) (show>isa video-group)

## Full Context

show isa video-group

## Description

This command displays ISA video group information.

## Parameters

### **video-group-id**

Specifies the ISA video group ID.

### **peak-last-hour**

Displays the peak FCC/RET session and bandwidth for the current hour, the last hour, and the lifetime.

## Platforms

7450 ESS, 7750 SR, 7750 SR-s

## Output

The following are output examples for this command.

### Output Example

```
A:SR-7/Dut-C# show isa video-group
=====
ISA Video Group
=====
Video Group Id       : 1           Admin State       : Up
Oper State           : Up           RT Server State   : Enabled
FCC Server State     : Disabled     ADI State         : Disabled
```

```

RT Resv Bandwidth(Mbps): 0          ADI State           : Disabled
MDA                               : 2/1
Admin State                       : Up
Used Cache (bytes)                : 586622
Mem alloc failures                 : 0
Failed Chnl Allocs                : 0
Bandwidth in use(kbps)            : 0
Egress stream resets               : 0
Ad stream resets                   : 0
SSRC collisions                    : 0
Received data octets               : 6284714
Transmitted data packets: 1183
Tx data packet errors              : 0
Active RTCP sessions              : 1
RTCP Parse Errors                  : 0
RTCP IPC Errors                    : 0
RTCP Subscriber Errors            : 0
Total RET BW (Kbps)                : 0
Total FCC BW (Kbps)                : 0
Mcast RET Req for RTCP             : 0
Mcast RET Created                  : 0
HighPkt pool limit hit            : 0
Pkts Lost (2-10)                  : 24
Pkts Lost (21-30)                 : 0
Pkts Lost ( >40)                  : 0

Channels                           : 2
Oper State                         : Up
Available Cache (bytes): 1869186816
Dropped pkts (denting)            : 0
Egress Bandwidth excee*: 0
Peak Bandwidth(kbps)              : 200
Ingress stream resets              : 53
Ad stream aborts                   : 0
Received data packets              : 4521
Rx data packet errors              : 0
Transmitted data octets: 1646212
Tx lost data packets               : 47
Requested RTP Packets              : 968
RTCP Config Errors                 : 0
RTCP SG Errors                     : 0
RTCP Interface Errors              : 0
Max. RET BW (Kbps)                 : 100
Drop Count for FCC                 : 0
Mcast RET Req for RUDP             : 0
Mcast RET Req Quenched             : 0

-----
Pkts Lost (11-20)                  : 48
Pkts Lost (31-40)                  : 0

-----
Video-groups : 1
=====
* indicates that the corresponding row element may have been truncated.
A:SR-7/Dut-C#
    
```

```

*A:Dut-C# show isa video-group 1 peak-last-hour
=====
ISA Video Group
=====
Video Group Id      : 1          Admin State         : Up
Oper State          : Up          RT Server State     : Disabled
FCC Server State    : Enabled     ADI State           : Disabled
Analyzer State      : Disabled    Str Sel State       : Disabled
RT Resv Bandwidth(Mbps): 0        RT Client           : Enabled
-----
ESA-VM              : 7/1
Admin State         : Up
Used Cache (bytes) : 4465664
Mem alloc failures  : 0
Failed Chnl Allocs : 0
Bandwidth in use(kbps) : 0
Egress stream resets : 0
Ad stream resets    : 0
SSRC collisions     : 0
Received data octets : 181782810
Transmitted data packets: 10711
Tx data packet errors : 0
Active RTCP sessions : 1
RTCP Parse Errors   : 0
RTCP IPC Errors     : 0
RTCP Subscriber Errors : 0
Total RET BW (Kbps) : 0
Total FCC BW (Kbps) : 0
Mcast RET Req for RTCP : 0
Mcast RET Created   : 0
HighPkt pool limit hit : 0

Channels            : 1
Oper State          : Up
Available Cache (bytes): 2858537472
Dropped pkts (denting) : 0
Egress Bandwidth excee*: 0
Peak Bandwidth(kbps) : 8658
Ingress stream resets : 153
Ad stream aborts     : 0
Received data packets : 130779
Rx data packet errors : 0
Transmitted data octets: 14888290
Tx lost data packets : 0
Requested RTP Packets : 0
RTCP Config Errors   : 0
RTCP SG Errors       : 0
RTCP Interface Errors : 0
Max. RET BW (Kbps)   : 0
Drop Count for FCC   : 0
Mcast RET Req for RUDP : 0
Mcast RET Req Quenched : 0
    
```



```

Pkts Lost (1-10)      : 0          Pkts Lost (11-20)      : 0
Pkts Lost (21-30)   : 0          Pkts Lost (31-40)     : 0
Pkts Lost ( >40)    : 0
-----
ESA-VM 7/1 Summary current hour (12:53:06 to 13:14:50)
      BW (Kbps)          Time
Peak FCC              8658      Mon Jun 7 13:14:10 UTC 2021
Peak RET              0         Never
Peak Total            8658      Mon Jun 7 13:14:10 UTC 2021
      Sessions          Time
Peak FCC              1         Mon Jun 7 13:14:10 UTC 2021
Peak RET              0         Never
Peak Total            1         Mon Jun 7 13:14:10 UTC 2021
-----
ESA-VM 7/1 Summary last hour (11:53:06 to 12:53:06)
      BW (Kbps)          Time
Peak FCC              8436      Mon Jun 7 12:25:08 UTC 2021
Peak RET              0         Never
Peak Total            8436      Mon Jun 7 12:25:08 UTC 2021
      Sessions          Time
Peak FCC              1         Mon Jun 7 12:25:08 UTC 2021
Peak RET              0         Never
Peak Total            1         Mon Jun 7 12:25:08 UTC 2021
-----
ESA-VM 7/1 Summary lifetime
      BW (Kbps)          Time
Peak FCC              8658      Mon Jun 7 13:14:10 UTC 2021
Peak RET              0         Never
Peak Total            8658      Mon Jun 7 13:14:10 UTC 2021
      Sessions          Time
Peak FCC              1         Mon Jun 7 12:25:08 UTC 2021
Peak RET              0         Never
Peak Total            1         Mon Jun 7 12:25:08 UTC 2021
-----
Video-groups : 1
=====
* indicates that the corresponding row element may have been truncated.
    
```

## 25.7 view

### view

#### Syntax

**view** [*view-name*] [**detail**]

#### Context

**[Tree]** (show>system>security view)

#### Full Context

show system security view

#### Description

This command lists one or all views and permissions in the MIB-OID tree.

## Parameters

### **view-name**

Specifies the name of the view to display output. If no view name is specified, the complete list of views displays.

### **detail**

Displays detailed view information.

## Platforms

All

## Output

The following output is an example of system security views.

[Table 630: Show System Security View Output Fields](#) describes system security view output fields.

### Output Example

```
A:ALA-1# show system security view
=====
Views
=====
view name      oid tree      mask      permission
-----
iso            1             included
no-security    1             included
no-security    1.3.6.1.6.3   excluded
no-security    1.3.6.1.6.3.10.2.1 included
no-security    1.3.6.1.6.3.11.2.1 included
no-security    1.3.6.1.6.3.15.1.1 included
-----
No. of Views: 6
=====
A:ALA-1#
```

```
A:ALA-1# show system security view no-security detail
=====
Views
=====
view name      oid tree      mask      permission
-----
no-security    1             included
no-security    1.3.6.1.6.3   excluded
no-security    1.3.6.1.6.3.10.2.1 included
no-security    1.3.6.1.6.3.11.2.1 included
no-security    1.3.6.1.6.3.15.1.1 included
-----
No. of Views: 5
=====
no-security used in
=====
group name
-----
snmp-ro
snmp-rw
=====
A:ALA-1#
```

Table 630: Show System Security View Output Fields

Label	Description
View name	Displays the name of the view. Views control the accessibility of a MIB object within the configured MIB view and subtree.
OID tree	Displays the Object Identifier (OID) value. OIDs uniquely identify MIB objects in the subtree.
Mask	Displays the mask value and the mask type, along with the <i>oid-value</i> configured in the <b>view</b> command, determines the access of each sub-identifier of an object identifier (MIB subtree) in the view.
Permission	Included — Specifies to include MIB subtree objects. Excluded — Specifies to exclude MIB subtree objects.
No. of Views	Displays the total number of configured views.
Group name	Displays the access group name.

## 25.8 violators

### violators

#### Syntax

**violators** [**port**] [**interface**] [**sap**] [**video**] [**sdp**]

#### Context

**[Tree]** (show>system>security>cpu-protection violators)

#### Full Context

show system security cpu-protection violators

#### Description

This command displays all interfaces, ports or SAPs with CPU protection policy violators. It also includes objects (SAPs, interfaces) that exceed the out-profile-rate and have the log-events keyword enabled for the out-profile-rate in the cpu-protection policy associated with the object.

#### Parameters

##### port

Displays violators associated with the port.

**interface**

Displays violators associated with the interface.

**sap**

Displays violators associated with the SAP.

**video**

Displays violators associated with the video entity.

**sdp**

Displays violators associated with the SDP.

**Platforms**

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

**Output**

The following output is an example of CPU protection violators information.

**Output Example**

```
*A:SecuritySR7>config>sys>security>cpu-protection>policy# show system security
cpu-protection violators
=====
Ports where a rate limit is violated
=====
Port-Id
  Type Limit First-Time          Last-Time          Violation-Periods
-----
No ports found
=====
Interfaces where the protection policy overall rate limit is violated
=====
Interface-Name
  Plcy Limit First-Time          Last-Time          Router-Name
                          Violation-Periods
-----
toIxia
  255 1000 10/02/2012 18:38:23 10/02/2012 18:39:31 70
-----
1 interface(s) found
=====
SAP's where the protection policy overall rate limit is violated
=====
SAP-Id
  Plcy Limit First-Time          Last-Time          Service-Id
                          Violation-Periods
-----
No SAP's found
=====
SDP's where the protection policy overall rate limit is violated
=====
SDP-Id
  Plcy Limit First-Time          Last-Time          Service-Id
                          Violation-Periods
-----
No SDP's found
=====
Video clients where the protection policy per-source rate limit is violated
=====
Client IP Address  Video-Interface
  Plcy Limit First-Time          Last-Time          Service-Id
                          Violation-Periods
-----
```

```
No clients found
=====
```

## violators

### Syntax

**violators** [**port**] [**interface**] [**sap**]

### Context

**[Tree]** (clear>cpu-protection violators)

### Full Context

clear cpu-protection violators

### Description

This command clears the rate limit violator record.

### Parameters

#### port

Clears entries for ports.

#### interface

Clears entries for interfaces.

#### sap

Clears entries for SAPs.

### Platforms

7450 ESS, 7750 SR-7/12/12e, 7750 SR-7s, 7750 SR-14s, 7950 XRS

## violators

### Syntax

**violators enforcement** {**sap** | **interface**} **card** *slot-number* [**fp** *fp-number*]

**violators local-monitor** {**sap** | **interface**} **card** *slot-number* [**fp** *fp-number*]

### Context

**[Tree]** (tools>dump>security>dist-cpu-protection violators)

### Full Context

tools dump security dist-cpu-protection violators

## Description

This command shows the nonconforming enforcement policers and local monitors.

## Parameters

### sap

-Indicates to display the violators associated with SAPs

### interface

- Indicates to display the violators associated with router interfaces.

### enforcement

Shows exceed and hold-down for Static and Dynamic Policers.

### local-monitor

Shows state of dynamic policer allocation for Local Monitoring Policers.

### card slot-number

The physical slot number for the card.

**Values** 1 to n (n is platform dependent)

### fp fp-number

Identifies the instance of the FP (FastPath) chipset. Some cards have a single FP and some cards can contain multiple FPs (for example, an XCM can house multiple FPs via its two XMA's).

**Values** 1 to 8

## Platforms

All

## Output

Users Output

[Table 631: Output Parameters](#) describes show users output fields.

## Output Example

```
*A:Dut-A# tools dump security dist-cpu-protection violators enforcement interface
card 4 fp 1
=====
Distributed Cpu Protection Current Interface Enforcer Policer Violators
=====
Interface                               Policer/Protocol                          Hld Rem
-----
Violators on Slot-4 Fp-1
-----
test                                     staticArpPolicer                          [S] none
test                                     icmp                                        [D] none
test                                     ospf                                        [D] none
-----
[S]-Static [D]-Dynamic [M]-Monitor
=====
```

Table 631: Output Parameters

Label	Description
Interface	The name of the router interface
Policer/Protocol	The configured name of the static policer (indicated with an [S]) or the DCP protocol name for a dynamic policer (indicated with a [D]).
[S] / [D]	indicates a static vs dynamic policer
Hld Rem	The remaining time in the hold-down countdown during which a policer is treating all packets as exceeding.

## 25.9 virtual

virtual

### Syntax

virtual

### Context

[\[Tree\]](#) (show>card virtual)

### Full Context

show card virtual

### Description

Commands in this context display virtual card information.

### Platforms

VSR

virtual

### Syntax

virtual

### Context

[\[Tree\]](#) (clear>card virtual)

### Full Context

clear card virtual

### Description

Commands in this context clear virtual card statistics.

### Platforms

VSR

## 25.10 virtual-link

### virtual-link

#### Syntax

**virtual-link** [**detail**]

**virtual-link database** [**detail**]

#### Context

[\[Tree\]](#) (show>router>ospf virtual-link)

#### Full Context

show router ospf virtual-link

#### Description

This command displays information for OSPF virtual links.

#### Parameters

##### database

Displays the virtual link database.

##### detail

Displays operational and statistical information about virtual links associated with this router.

#### Platforms

All

#### Output

The following output is an example of OSPF virtual link information, and [Table 632: OSPF Virtual Link Output Fields](#) describes the output fields.



### Output Example

```

show router ospf virtual-link detail
=====
Rtr Base OSPFv2 Instance 0 Virtual Links (detail)
=====
-----
Neighbor Router Id : 10.0.0.3
-----
Nbr Router Id : 10.0.0.3          Area Id      : 0.0.0.1
Local Interface: 1.2.3.2
Metric        : 10
State         : Point To Point    Admin State  : Up
Hello Intrvl  : 10 sec           Rtr Dead Intrvl: 60 sec
Tot Rx Packets : 10              Tot Tx Packets : 10
Rx Hellos     : 1                Tx Hellos     : 2
Rx DBDs       : 2                Tx DBDs       : 3
Rx LSRs       : 1                Tx LSRs       : 1
Rx LSUs       : 4                Tx LSUs       : 3
Rx LS Acks    : 2                Tx LS Acks    : 1
Discards      : 0                Tx Failures   : 0
Retransmits   : 0
Bad Networks  : 0                Bad Versions  : 0
Bad Areas     : 0                Bad Dest Adrs : 0
Bad Auth Types : 0              Auth Failures : 0
Bad Neighbors : 0                Bad Pkt Types : 0
Bad Lengths   : 0                Bad Hello Int. : 0
Bad Dead Int. : 0                Bad Options   : 0
Retrans Intrvl : 5 sec           Transit Delay  : 1 sec
Last Event    : 08/12/2021 12:56:23 Authentication : None
IPsec In Sta SA:                  IPsec Out Sta *:
IPsec In Sta S*:
LSA Count     : 0                LSA Checksum  : 0x0
=====
    
```

Table 632: OSPF Virtual Link Output Fields

Label	Description
Nbr Rtr ID	The router ID(s) of neighboring routers.
Area Id	A 32-bit integer which identifies an area.
Local Interface	The IP address of the local egress interface used to maintain the adjacency to reach this virtual neighbor.
Metric	The metric value associated with the route. This value is used when importing this static route into other protocols. When the metric is configured as zero, the metric configured in OSPF, default-import-metric, applies. This value is also used to determine the static route installed in the forwarding table.
State	The operational state of the virtual link to the neighboring router.
Authentication	Specifies whether authentication is enabled for the interface or virtual link.

Label	Description
Hello Intrval	Specifies the length of time, in seconds, between the Hello packets that the router sends on the interface.
Rtr Dead Intrvl	Specifies the total number of OSPF packets received where the dead interval given in the packet was not equal to that configured on this interface since the OSPF admin status was enabled.
Tot Rx Packets	Specifies the total number of OSPF packets received on this interface since the OSPF admin status was enabled.
Rx Hellos	Specifies the total number of OSPF Hello packets received on this interface since the OSPF admin status was enabled.
Rx DBDs	Specifies the total number of OSPF Database Description packets received on this interface since the OSPF administrative status was enabled.
Rx LSRs	Specifies the total number of Link State Requests (LSRs) received on this interface since the OSPF admin status was enabled.
Rx LSUs	Specifies the total number of Link State Updates (LSUs) received on this interface since the OSPF admin status was enabled.
Rx LS Acks	Specifies the total number of Link State Acknowledgments received on this interface since the OSPF admin status was enabled.
Tot Tx Packets	Specifies the total number of OSPF packets transmitted on this virtual interface since it was created.
Tx Hellos	Specifies the total number of OSPF Hello packets transmitted on this virtual interface since it was created.
Tx DBDs	Specifies the total number of OSPF database description packets transmitted on this virtual interface.
Tx LSRs	Specifies the total number of OSPF Link State Requests (LSRs) transmitted on this virtual interface.
Tx LSUs	Specifies the total number of OSPF Hello packets transmitted on this interface since the OSPF admin status was enabled.
Tx LS Acks	Specifies the total number of OSPF Link State Acknowledgments (LSA) transmitted on this virtual interface.
Retransmits	Specifies the total number of OSPF retransmits sent on this interface since the OSPF admin status was last enabled.

Label	Description
Discards	Specifies the total number of OSPF packets discarded on this interface since the OSPF admin status was last enabled.
Bad Networks	Specifies the total number of OSPF packets received with invalid network or mask since the OSPF admin status was last enabled.
Bad Versions	Specifies the total number of OSPF packets received with bad OSPF version numbers since the OSPF admin status was last enabled.
Bad Areas	Specifies the total number of OSPF packets received with an area mismatch since the OSPF admin status was last enabled.
Bad Dest Addr	Specifies the total number of OSPF packets received with the incorrect IP destination address since the OSPF admin status was last enabled.
Bad Auth Types	Specifies the total number of OSPF packets received with an invalid authorization type since the OSPF admin status was last enabled.
Auth Failures	Specifies the total number of OSPF packets received with an invalid authorization key since the OSPF admin status was last enabled.
Bad Neighbors	Specifies the total number of OSPF packets received where the neighbor information does not match the information this router has for the neighbor since the OSPF admin status was last enabled.
Bad Pkt Types	Specifies the total number of OSPF packets received with an invalid OSPF packet type since the OSPF admin status was last enabled.
Bad Lengths	Specifies the total number of OSPF packets received on this interface with a total length not equal to the length given in the packet itself since the OSPF admin status was last enabled.
Bad Hello Int.	Specifies the total number of OSPF packets received where the hello interval given in packet was not equal to that configured on this interface since the OSPF admin status was last enabled.
Bad Dead Int.	Specifies the total number of OSPF packets received where the dead interval given in the packet was not equal to that configured on this interface since the OSPF admin status was last enabled.
Bad Options	Specifies the total number of OSPF packets received with an option that does not match those configured for this interface or area since the OSPF admin status was last enabled.

Label	Description
Retrans Intrvl	Specifies the length of time, in seconds, that OSPF waits before retransmitting an unacknowledged link state advertisement (LSA) to an OSPF neighbor.
Transit Delay	Specifies the time, in seconds, it takes to transmit a link state advertisement (LSA) on the interface or virtual link.
Last Event	Specifies the date and time when an event was last associated with this OSPF interface.
Tx Failures	Transmitted OSPF packets that are dropped due to resource shortage.

## virtual-link

### Syntax

**virtual-link [detail]**

**virtual-link [detail] database**

### Context

[\[Tree\]](#) (show>router>ospf3 virtual-link)

### Full Context

show router ospf3 virtual-link

### Description

This command displays information for OSPFv3 virtual links.

### Parameters

#### database

Displays the virtual link database.

#### detail

Displays operational and statistical information about virtual links associated with this router.

### Platforms

All

### Output

The following output is an example of OSPFv3 virtual link information, and [Table 633: OSPF Virtual Link Output Fields](#) describes the output fields.

### Output Example

```

show router ospf3 virtual-link detail
=====
Rtr Base OSPFv3 Instance 0 Virtual Links (detail)
=====
-----
Neighbor Router Id : 10.0.0.2
-----
Nbr Router Id : 10.0.0.2          Area Id      : 0.0.0.1
Local Interface: 3ffe::101:201
Metric         : 10
State          : Point To Point   Admin State  : Up
Hello Intrvl  : 10 sec           Rtr Dead Intrvl: 60 sec
Tot Rx Packets : 42              Tot Tx Packets : 15
Rx Hellos     : 29              Tx Hellos     : 3
Rx DBDs       : 2              Tx DBDs       : 3
Rx LSRs       : 1              Tx LSRs       : 1
Rx LSUs       : 7              Tx LSUs       : 6
Rx LS Acks    : 3              Tx LS Acks    : 2
Discards      : 0              Tx Failures   : 0
                                   Retransmits   : 1
Bad Networks  : 0              Bad Versions  : 0
Bad Areas     : 0              Bad Dest Adrs : 0
Bad Auth Types : 0            Auth Failures : 0
Bad Neighbors : 0              Bad Pkt Types : 0
Bad Lengths   : 0              Bad Hello Int. : 0
Bad Dead Int. : 0              Bad Options   : 0
Retrans Intrvl : 5 sec         Transit Delay  : 1 sec
Last Event    : 08/12/2021 12:58:28 Authentication : None
IPsec In Sta SA:                IPsec Out Sta *:
IPsec In Sta S*:
LSA Count     : 0              LSA Checksum  : 0x0
=====
    
```

Table 633: OSPF Virtual Link Output Fields

Label	Description
Nbr Rtr ID	The router ID(s) of neighboring routers.
Area Id	A 32-bit integer which identifies an area.
Local Interface	The IP address of the local egress interface used to maintain the adjacency to reach this virtual neighbor.
Metric	The metric value associated with the route. This value is used when importing this static route into other protocols. When the metric is configured as zero, the metric configured in OSPF, default-import-metric, applies. This value is also used to determine which static route to install in the forwarding table.
State	The operational state of the virtual link to the neighboring router.
Authentication	Specifies whether authentication is enabled for the interface or virtual link.

Label	Description
Hello Intrval	Specifies the length of time, in seconds, between the Hello packets that the router sends on the interface.
Rtr Dead Intrvl	Specifies the total number of OSPF packets received where the dead interval given in the packet was not equal to that configured on this interface since the OSPF admin status was enabled.
Tot Rx Packets	Specifies the total number of OSPF packets received on this interface since the OSPF admin status was enabled.
Rx Hellos	Specifies the total number of OSPF Hello packets received on this interface since the OSPF admin status was enabled.
Rx DBDs	Specifies the total number of OSPF Database Description packets received on this interface since the OSPF administrative status was enabled.
Rx LSRs	Specifies the total number of Link State Requests (LSRs) received on this interface since the OSPF admin status was enabled.
Rx LSUs	Specifies the total number of Link State Updates (LSUs) received on this interface since the OSPF admin status was enabled.
Rx LS Acks	Specifies the total number of Link State Acknowledgments received on this interface since the OSPF admin status was enabled.
Tot Tx Packets	Specifies the total number of OSPF packets transmitted on this virtual interface since it was created.
Tx Hellos	Specifies the total number of OSPF Hello packets transmitted on this virtual interface since it was created.
Tx DBDs	Specifies the total number of OSPF database description packets transmitted on this virtual interface.
Tx LSRs	Specifies the total number of OSPF Link State Requests (LSRs) transmitted on this virtual interface.
Tx LSUs	Specifies the total number of OSPF Hello packets transmitted on this interface since the OSPF admin status was enabled.
Tx LS Acks	Specifies the total number of OSPF Link State Acknowledgments (LSA) transmitted on this virtual interface.
Retransmits	Specifies the total number of OSPF retransmits sent on this interface since the OSPF admin status was last enabled.

Label	Description
Discards	Specifies the total number of OSPF packets discarded on this interface since the OSPF admin status was last enabled.
Bad Networks	Specifies the total number of OSPF packets received with invalid network or mask since the OSPF admin status was last enabled.
Bad Versions	Specifies the total number of OSPF packets received with bad OSPF version numbers since the OSPF admin status was last enabled.
Bad Areas	Specifies the total number of OSPF packets received with an area mismatch since the OSPF admin status was last enabled.
Bad Dest Addr	Specifies the total number of OSPF packets received with the incorrect IP destination address since the OSPF admin status was last enabled.
Bad Auth Types	Specifies the total number of OSPF packets received with an invalid authorization type since the OSPF admin status was last enabled.
Auth Failures	Specifies the total number of OSPF packets received with an invalid authorization key since the OSPF admin status was last enabled.
Bad Neighbors	Specifies the total number of OSPF packets received where the neighbor information does not match the information this router has for the neighbor since the OSPF admin status was last enabled.
Bad Pkt Types	Specifies the total number of OSPF packets received with an invalid OSPF packet type since the OSPF admin status was last enabled.
Bad Lengths	Specifies the total number of OSPF packets received on this interface with a total length not equal to the length given in the packet itself since the OSPF admin status was last enabled.
Bad Hello Int.	Specifies the total number of OSPF packets received where the hello interval given in packet was not equal to that configured on this interface since the OSPF admin status was last enabled.
Bad Dead Int.	Specifies the total number of OSPF packets received where the dead interval given in the packet was not equal to that configured on this interface since the OSPF admin status was last enabled.
Bad Options	Specifies the total number of OSPF packets received with an option that does not match those configured for this interface or area since the OSPF admin status was last enabled.

Label	Description
Retrans Intrvl	Specifies the length of time, in seconds, that OSPF waits before retransmitting an unacknowledged link state advertisement (LSA) to an OSPF neighbor.
Transit Delay	Specifies the time, in seconds, it takes to transmit a link state advertisement (LSA) on the interface or virtual link.
Last Event	Specifies the date and time when an event was last associated with this OSPF interface.
Tx Failures	Transmitted OSPF packets that are dropped due to resource shortage.

## virtual-link

### Syntax

**virtual-link** *nbr-rtr-id* **area** *area-id* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

### Context

[\[Tree\]](#) (monitor>router>ospf3 virtual-link)

[\[Tree\]](#) (monitor>router>ospf virtual-link)

### Full Context

monitor router ospf3 virtual-link

monitor router ospf virtual-link

### Description

This command displays statistical OSPF virtual link information at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified neighbor(s). The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

### Parameters

#### *nbr-rtr-id*

Specifies the IP address to uniquely identify a neighboring router in the autonomous system.

**Values** a.b.c.d



**area-id**

Specifies the OSPF area ID, expressed in dotted decimal notation or as a 32-bit decimal integer.

**Values** *ip-address*, 0 to 4294967295

**seconds**

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

**repeat**

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

**absolute**

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

**rate**

Displays rate-per-second for each statistic instead of the delta.

**Platforms**

All

## 25.11 virtual-neighbor

### virtual-neighbor

**Syntax**

**virtual-neighbor** [**remote** *ip-address*] [**detail**]

**Context**

[\[Tree\]](#) (show>router>ospf virtual-neighbor)

[\[Tree\]](#) (show>router>ospf3 virtual-neighbor)

**Full Context**

show router ospf virtual-neighbor

show router ospf3 virtual-neighbor

## Description

This command displays virtual neighbor information.

## Parameters

### remote *ip-address*

Displays the specified IPv4 or IPv6 address. This reduces the amount of output displayed.

- Values**
- ipv4-address:
    - a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF]H
    - d: [0 to 255]D

### detail

Produces detailed information on the virtual neighbor. This option produces a large amount of data. It is recommended to use **detail** only when requesting information for a specific neighbor.

## Platforms

All

## Output

OSPF Virtual Neighbor Output

[Table 634: OSPF Virtual Neighbor Output Fields](#) describes OSPF virtual neighbor output fields.

*Table 634: OSPF Virtual Neighbor Output Fields*

Label	Description
Nbr IP Addr	The IP address this neighbor is using in its IP source address. On addressless links, this will not be 0.0.0.0, but the address of another of the neighbor's interfaces.
Nbr Rtr ID	Specifies the router ID(s) of neighboring routers.
Transit Area	Specifies the transit area ID that links the backbone area with the area that has no physical connection with the backbone.
Retrans Q Length	The current length of the retransmission queue.
No. of Neighbors	Specifies the total number of OSPF neighbors adjacent on this interface, in a state of INIT or greater, since the OSPF admin status was enabled.

Label	Description
Nbr State	Specifies the operational state of the virtual link to the neighboring router.
Options	Specifies the total number of OSPF packets received with an option that does not match those configured for this virtual interface or transit area since the OSPF admin status was enabled.
Events	Specifies the total number of events that have occurred since the OSPF admin status was enabled.
Last Event Time	Specifies the date and time when an event was last associated with this OSPF interface.
Up Time	Specifies the uninterrupted time, in hundredths of seconds, the adjacency to this neighbor has been up.
Time Before Dead	Specifies the amount of time, in seconds, until the dead router interval expires.
Bad Nbr States	Specifies the total number of OSPF packets received where the neighbor information does not match the information this router has for the neighbor since the OSPF admin status was last enabled.
LSA Inst fails	Specifies the total number of times an LSA could not be installed into the LSDB due to a resource allocation issue since the OSPF admin status was last enabled.
Bad Seq Nums	Specifies the total number of times when a database description packet was received with a sequence number mismatch since the OSPF admin status was last enabled.
Bad MTUs	Specifies the total number of times when the MTU in a received database description packet was larger than the MTU of the receiving interface since the OSPF admin status was enabled.
Bad Packets	Specifies the total number of times when an LS update was received with an illegal LS type or an option mismatch since the OSPF admin status was enabled.
LSA not in LSDB	Specifies the total number of times when an LS request was received for an LSA not installed in the LSDB of this router since the OSPF admin status was enabled.
Option Mismatches	Specifies the total number of times when a LS update was received with an option mismatch since the OSPF admin status was enabled.

Label	Description
Nbr Duplicates	Specifies the total number of times when a duplicate database description packet was received during the Exchange state since the OSPF admin status was enabled.

### Output Example

```
A:ALA-A# show router ospf 1 virtual-neighbor
=====
Rtr Base OSPFv2 Instance 1 Virtual Neighbors
=====
Nbr IP Addr      Nbr Rtr Id      Nbr State Transit Area  RetxQ Len  Dead Time
-----
180.1.6.10       180.0.0.10      Full   0.0.0.1      0      58
180.2.9.10       180.0.0.10      Full   0.0.0.2      0      52
-----
No. of Neighbors: 2
=====
A:ALA-A#
A:ALA-A# show router ospf virtual-neighbor detail
=====
Rtr Base OSPFv2 Instance 0 Virtual Neighbors (detail)
=====
Virtual Neighbor Router Id : 180.0.0.10
-----
Neighbor IP Addr : 180.1.6.10      Neighbor Rtr Id : 180.0.0.10
Neighbor State   : Full           Transit Area    : 0.0.0.1
Retrans Q Length : 0             Options        : -E--
Events           : 4             Last Event Time : 11/07/2006 17:11:56
Up Time          : 2d 17:47:17    Time Before Dead : 57 sec
Bad Nbr States   : 1             LSA Inst fails  : 0
Bad Seq Nums     : 0             Bad MTUs        : 0
Bad Packets      : 0             LSA not in LSDB : 0
Option Mismatches : 0          Nbr Duplicates  : 0
-----
Virtual Neighbor Router Id : 180.0.0.10
-----
Neighbor IP Addr : 180.2.9.10      Neighbor Rtr Id : 180.0.0.10
Neighbor State   : Full           Transit Area    : 0.0.0.2
Retrans Q Length : 0             Options        : -E--
Events           : 4             Last Event Time : 11/07/2006 17:11:59
Up Time          : 2d 17:47:14    Time Before Dead : 59 sec
Bad Nbr States   : 1             LSA Inst fails  : 0
Bad Seq Nums     : 0             Bad MTUs        : 0
Bad Packets      : 0             LSA not in LSDB : 0
Option Mismatches : 0          Nbr Duplicates  : 0
=====
A:ALA-A#
```

## virtual-neighbor

### Syntax

**virtual-neighbor** *nbr-rtr-id* **area** *area-id* [ **interval** *seconds*] [ **repeat** *repeat*] [ **absolute** | **rate**]

## Context

[\[Tree\]](#) (monitor>router>ospf3 virtual-neighbor)

[\[Tree\]](#) (monitor>router>ospf virtual-neighbor)

## Full Context

monitor router ospf3 virtual-neighbor

monitor router ospf virtual-neighbor

## Description

This command displays statistical OSPF virtual neighbor information at the configured interval until the configured count is reached.

The first screen displays the current statistics related to the specified OSPF virtual neighbor router. The subsequent statistical information listed for each interval is displayed as a delta to the previous display.

When the keyword **rate** is specified, the rate-per-second for each statistic is displayed instead of the delta.

Monitor commands are similar to **show** commands but only statistical information displays. Monitor commands display the selected statistics according to the configured number of times at the interval specified.

## Parameters

### *nbr-rtr-id*

Specifies the IP address to uniquely identify a neighboring router in the autonomous system.

**Values** a.b.c.d

### *area-id*

Specifies the OSPF area ID, expressed in dotted decimal notation or as a 32-bit decimal integer.

**Values** *ip-address*, 0 to 4294967295

### *seconds*

Configures the interval for each display, in seconds.

**Values** 3 to 60

**Default** 10

### *repeat*

Configures how many times the command is repeated.

**Values** 1 to 999

**Default** 10

### *absolute*

Displays raw statistics, without processing. No calculations are performed on the delta or rate statistics.

### rate

Displays rate-per-second for each statistic instead of the delta.

### Platforms

All

## 25.12 virtual-subnet

### virtual-subnet

#### Syntax

**virtual-subnet subscriber** *sub-ident*

**virtual-subnet** [**sap** *sap-id*]

#### Context

[\[Tree\]](#) (show>service>id virtual-subnet)

#### Full Context

show service id virtual-subnet

#### Description

This command displays currently recorded default gateway and subnets for all virtual subnets enabled for DHCPv4 hosts in the specified service.

#### Parameters

##### *sub-ident*

Displays information relating to the specified subscriber ID.

##### *sap-id*

Displays information relating to the specified SAP ID.

#### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

#### Output

The following output is an example of virtual subnet information.

#### Output Example

```
show service id 500 virtual-subnet
=====
Virtual subnets in service 500
=====
Subscriber                : 00:20:fc:1e:cd:52|1/1/9:200
-----
```

```

Default router      : 192.168.100.254
Subnet             : 192.168.100.0/24
SAP                : 1/1/9:200
-----
No. of subnets: 1
=====
    
```

[Table 635: Virtual Subnet Field Descriptions](#) describes virtual subnet output fields.

*Table 635: Virtual Subnet Field Descriptions*

Field	Descriptions
Subscriber	The service identification that identifies the service in the service domain
Default router	The IP address of the default router received from either the DHCP or the RADIUS server
Subnet	The IP address of the subnet
SAP	The SAP associated with the service
No. of subnets	The total number of subnets for the service

## 25.13 vlan-aware-bundle

### vlan-aware-bundle

#### Syntax

```

vlan-aware-bundle [name]
vlan-aware-bundle name fdb [detail]
vlan-aware-bundle name evpn-mpls [detail]
vlan-aware-bundle name segment-routing-v6 [detail] [destinations]
vlan-aware-bundle name vxlan [detail] [destinations]
    
```

#### Context

[\[Tree\]](#) (show>service vlan-aware-bundle)

#### Full Context

```
show service vlan-aware-bundle
```

#### Description

This command displays VLAN-aware bundle information for the specified service.

## Parameters

### *name*

Displays the bundle name.

### *detail*

Keyword used to display detailed information.

### *destinations*

Keyword used to display information about EVPN-MPLS, VXLAN, and SRv6 destinations.

## Platforms

All

## Output

The following output is an example of VLAN-aware bundle information and [Table 636: VLAN-aware bundle Field Descriptions](#) describes VLAN-aware bundle output fields.

### Output Example

```
# show service vlan-aware-bundle

=====
VLAN Aware Bundle
=====
Bundle                Service Id  Eth Tag   Evi
-----
bundle0                1           1         1
                      2           2         2
                      3           3         3
bundle1                4           4         4
                      5           5         5
bundle2                6           6         6
-----
Number of entries: 6
-----

=====
VLAN Aware Bundle Summary
=====
MAC Entries                : 2
EVPN-MPLS Destinations    : 2
EVPN-MPLS Ethernet Segment Destinations: 0
VXLAN Destinations        : 0
VXLAN Ethernet Segment Destinations : 0
SRv6 Destinations         : 2
SRv6 Ethernet segment Destinations : 0
=====
```

```
# show service vlan-aware-bundle "bundle0"

=====
VLAN Aware Bundle Services
=====
Bundle                Service Id  Eth Tag   Evi
-----
bundle0                1           1         1
                      2           2         2
                      3           3         3
-----
```



```

Number of entries: 3
-----
=====
=====
Vlan-Aware-Bundle Summary
=====
MAC Entries:                               4
EVPN-MPLS Destinations:                    4
EVPN-MPLS Ethernet Segment Destinations:   4
VXLAN Destinations:                         4
VXLAN Ethernet Segment Destinations:       4
SRv6 Destinations:                         4
SRv6 Ethernet Segment Destinations:        4
  
```

```

# show service vlan-aware-bundle bundle0 fdb
=====
Service Id: 1 Name: mac_vrf_1
=====
Forwarding Database, Service 1
=====
ServId   MAC                Source-Identifier      Type    Last Change
        Transport:Tnl-Id
-----
1        00:00:00:11:11:11  srv6-1:                EvpnS:P 12/13/23 16:55:23
        10.20.1.2
1        222:1:1:1:1:e572:: 222:1:1:1:1:e572::    srv6-1:  EvpnS:P 12/13/23 16:55:23
        00:00:00:11:11:12  10.20.1.2
        222:1:1:1:1:e572::
-----
No. of MAC Entries: 2
  
```

Legend:L=Learned 0=0am P=Protected-MAC C=Conditional S=Static Lf=Leaf T=Trusted

```

=====
Service Id: 2 Name: mac_vrf_2
=====
Forwarding Database, Service 2
=====
ServId   MAC                Source-Identifier      Type    Last Change
        Transport:Tnl-Id
-----
2        00:00:00:11:11:11  vxlan-1:                EvpnS:P 12/13/23 16:55:50
        10.20.1.2:2
2        00:00:00:11:11:12  vxlan-1:                EvpnS:P 12/13/23 16:55:59
        10.20.1.2:2
2        00:02:fe:ff:ff:3f  vxlan-1:                EvpnS:P 12/13/23 16:42:24
        10.20.1.2:2
2        00:03:fe:ff:ff:3f  vxlan-1:                EvpnS:P 12/13/23 16:42:21
        10.20.1.3:2
2        00:04:fe:ff:ff:3f  cpm                      Intf     12/13/23 16:41:45
2        00:05:fe:ff:ff:3f  vxlan-1:                EvpnS:P 12/13/23 16:42:22
        10.20.1.5:2
-----
  
```

No. of MAC Entries: 6

Legend:L=Learned 0=0am P=Protected-MAC C=Conditional S=Static Lf=Leaf T=Trusted

```

=====
Service Id: 3 Name: mac_vrf_3
  
```

```

=====
Forwarding Database, Service 3
=====
ServId    MAC                Source-Identifier    Type    Last Change
          Transport:Tnl-Id
-----
3         00:00:00:11:11:11  mpls-1:             EvpnS:P 12/13/23 16:56:31
                               10.20.1.2:524285
          isis:524297
3         00:00:00:11:11:12  mpls-1:             EvpnS:P 12/13/23 16:56:31
                               10.20.1.2:524285
          isis:524297
3         00:02:fe:ff:ff:40  mpls-1:             EvpnS:P 12/13/23 16:42:24
                               10.20.1.2:524285
          isis:524297
3         00:03:fe:ff:ff:40  mpls-1:             EvpnS:P 12/13/23 16:42:21
                               10.20.1.3:524286
          isis:524295
3         00:04:fe:ff:ff:40  cpm                 Intf     12/13/23 16:41:45
3         00:05:fe:ff:ff:40  mpls-1:             EvpnS:P 12/13/23 16:42:22
                               10.20.1.5:524284
          isis:524298
-----
No. of MAC Entries: 6
-----
Legend:L=Learned 0=0am P=Protected-MAC C=Conditional S=Static Lf=Leaf T=Trusted
=====
    
```

```

# show service vlan-aware-bundle "bundle0" fdb detail
=====
Service Id: 1 Name: mac_vrf_1
=====
Forwarding Database, Service 1
=====
ServId    MAC                Source-Identifier    Type    Last Change
          Transport:Tnl-Id
-----
1         00:00:00:11:11:11  srv6-1:             EvpnS:P 12/13/23 16:55:23
                               10.20.1.2
          222:1:1:1:1:e572::
1         00:00:00:11:11:12  srv6-1:             EvpnS:P 12/13/23 16:55:23
                               10.20.1.2
          222:1:1:1:1:e572::
-----
No. of MAC Entries: 2
-----
Legend:L=Learned 0=0am P=Protected-MAC C=Conditional S=Static Lf=Leaf T=Trusted
=====
Service Id: 2 Name: mac_vrf_2
=====
Forwarding Database, Service 2
=====
ServId    MAC                Source-Identifier    Type    Last Change
          Transport:Tnl-Id
-----
2         00:00:00:11:11:11  vxlan-1:            EvpnS:P 12/13/23 16:55:50
                               10.20.1.2:2
2         00:00:00:11:11:12  vxlan-1:            EvpnS:P 12/13/23 16:55:59
                               10.20.1.2:2
2         00:02:fe:ff:ff:3f  vxlan-1:            EvpnS:P 12/13/23 16:42:24
    
```

```

2          00:03:fe:ff:ff:3f 10.20.1.2:2          EvpnS:P 12/13/23 16:42:21
                vxlan-1:
                10.20.1.3:2
2          00:04:fe:ff:ff:3f cpm                  Intf     12/13/23 16:41:45
2          00:05:fe:ff:ff:3f vxlan-1:            EvpnS:P 12/13/23 16:42:22
                10.20.1.5:2
    
```

-----  
 No. of MAC Entries: 6  
 -----

Legend:L=Learned 0=0am P=Protected-MAC C=Conditional S=Static Lf=Leaf T=Trusted  
 =====

Service Id: 3 Name: mac\_vrf\_3  
 =====

Forwarding Database, Service 3  
 =====

ServId	MAC	Source-Identifier	Type	Last Change
		Transport:Tnl-Id	Age	
3	00:00:00:11:11:11	mpls-1: 10.20.1.2:524285	EvpnS:P	12/13/23 16:56:31
	isis:524297			
3	00:00:00:11:11:12	mpls-1: 10.20.1.2:524285	EvpnS:P	12/13/23 16:56:31
	isis:524297			
3	00:02:fe:ff:ff:40	mpls-1: 10.20.1.2:524285	EvpnS:P	12/13/23 16:42:24
	isis:524297			
3	00:03:fe:ff:ff:40	mpls-1: 10.20.1.3:524286	EvpnS:P	12/13/23 16:42:21
	isis:524295			
3	00:04:fe:ff:ff:40	cpm	Intf	12/13/23 16:41:45
3	00:05:fe:ff:ff:40	mpls-1: 10.20.1.5:524284	EvpnS:P	12/13/23 16:42:22
	isis:524298			

-----  
 No. of MAC Entries: 6  
 -----

Legend:L=Learned 0=0am P=Protected-MAC C=Conditional S=Static Lf=Leaf T=Trusted  
 =====

```
# show service vlan-aware-bundle bundle0 evpn-mpls
```

Service Id: 1 Name: mac\_vrf\_1  
 =====

BGP EVPN-MPLS Dest (Instance 1)  
 =====

TEP Address	Transport:Tnl	Egr Label	Oper State	Mcast	Num MACs
-------------	---------------	-----------	------------	-------	----------

-----  
 No Matching Entries  
 =====

BGP EVPN-MPLS Dest (Instance 2)  
 =====

TEP Address	Transport:Tnl	Egr Label	Oper State	Mcast	Num MACs
-------------	---------------	-----------	------------	-------	----------

-----  
 No Matching Entries  
 =====

```
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
Eth SegId                Num. Macs                Last Update
-----
No Matching Entries
=====

=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 2)
=====
Eth SegId                Num. Macs                Last Update
-----
No Matching Entries
=====

=====
BGP EVPN-MPLS ES BMAC Dest
=====
ES BMAC Addr              Last Change
-----
No Matching Entries
=====
Service Id: 2  Name: mac_vrf_2
=====

=====
BGP EVPN-MPLS Dest (Instance 1)
=====
TEP Address                Transport:Tnl            Egr Label  Oper  Mcast  Num
                          State                    MACs
-----
No Matching Entries
=====

=====
BGP EVPN-MPLS Dest (Instance 2)
=====
TEP Address                Transport:Tnl            Egr Label  Oper  Mcast  Num
                          State                    MACs
-----
No Matching Entries
=====

=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
Eth SegId                Num. Macs                Last Update
-----
No Matching Entries
=====

=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 2)
=====
Eth SegId                Num. Macs                Last Update
-----
No Matching Entries
=====

=====
BGP EVPN-MPLS ES BMAC Dest
=====
```

```

ES BMAC Addr                               Last Change
-----
No Matching Entries
=====
Service Id: 3  Name: mac_vrf_3
=====
BGP EVPN-MPLS Dest (Instance 1)
=====
TEP Address                               Transport:Tnl   Egr Label   Oper   Mcast   Num
                                           State          MACs
-----
10.20.1.2                                isis:524297    524284     Up     bum     0
  Oper Flags      : None
  Sup BCast Domain : No
  Last Update    : 12/13/2023 16:42:24
10.20.1.2                                isis:524297    524285     Up     none    3
  Oper Flags      : None
  Sup BCast Domain : No
  Last Update    : 12/13/2023 16:42:24
10.20.1.3                                isis:524295    524285     Up     bum     0
  Oper Flags      : None
  Sup BCast Domain : No
  Last Update    : 12/13/2023 16:42:21
10.20.1.3                                isis:524295    524286     Up     none    1
  Oper Flags      : None
  Sup BCast Domain : No
  Last Update    : 12/13/2023 16:42:21
10.20.1.5                                isis:524298    524283     Up     bum     0
  Oper Flags      : None
  Sup BCast Domain : No
  Last Update    : 12/13/2023 16:42:22
10.20.1.5                                isis:524298    524284     Up     none    1
  Oper Flags      : None
  Sup BCast Domain : No
  Last Update    : 12/13/2023 16:42:22
-----
Number of entries: 6
-----
=====
BGP EVPN-MPLS Dest (Instance 2)
=====
TEP Address                               Transport:Tnl   Egr Label   Oper   Mcast   Num
                                           State          MACs
-----
No Matching Entries
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
Eth SegId                               Num. Macs      Last Update
-----
No Matching Entries
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 2)
=====
Eth SegId                               Num. Macs      Last Update
-----
    
```

```
No Matching Entries
=====
=====
BGP EVPN-MPLS ES BMAC Dest
=====
ES BMAC Addr                               Last Change
-----
No Matching Entries
=====
```

```
# show service vlan-aware-bundle bundle0 evpn-mpls detail
=====
Service Id: 1 Name: mac_vrf_1
=====
BGP EVPN-MPLS Dest (Instance 1)
=====
TEP Address                               Transport:Tnl   Egr Label   Oper   Mcast   Num
                                           State          State       State   MACs
-----
No Matching Entries
=====
BGP EVPN-MPLS Dest (Instance 2)
=====
TEP Address                               Transport:Tnl   Egr Label   Oper   Mcast   Num
                                           State          State       State   MACs
-----
No Matching Entries
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
Eth SegId                               Num. Macs      Last Update
-----
No Matching Entries
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 2)
=====
Eth SegId                               Num. Macs      Last Update
-----
No Matching Entries
=====
BGP EVPN-MPLS ES BMAC Dest
=====
ES BMAC Addr                               Last Change
-----
No Matching Entries
=====
Service Id: 2 Name: mac_vrf_2
=====
BGP EVPN-MPLS Dest (Instance 1)
=====
TEP Address                               Transport:Tnl   Egr Label   Oper   Mcast   Num
```

```

-----
State          MACs
-----
No Matching Entries
=====

BGP EVPN-MPLS Dest (Instance 2)
=====
TEP Address          Transport:Tnl    Egr Label  Oper  Mcast  Num
                   State          State      State  MACs
-----
No Matching Entries
=====

BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
Eth SegId           Num. Macs        Last Update
-----
No Matching Entries
=====

BGP EVPN-MPLS Ethernet Segment Dest (Instance 2)
=====
Eth SegId           Num. Macs        Last Update
-----
No Matching Entries
=====

BGP EVPN-MPLS ES BMAC Dest
=====
ES BMAC Addr        Last Change
-----
No Matching Entries
=====

Service Id: 3  Name: mac_vrf_3
=====

BGP EVPN-MPLS Dest (Instance 1)
=====
TEP Address          Transport:Tnl    Egr Label  Oper  Mcast  Num
                   State          State      State  MACs
-----
10.20.1.2            isis:524297     524284     Up    bum    0
  Oper Flags         : None
  Sup BCast Domain   : No
  Last Update        : 12/13/2023 16:42:24
10.20.1.2            isis:524297     524285     Up    none   3
  Oper Flags         : None
  Sup BCast Domain   : No
  Last Update        : 12/13/2023 16:42:24
10.20.1.3            isis:524295     524285     Up    bum    0
  Oper Flags         : None
  Sup BCast Domain   : No
  Last Update        : 12/13/2023 16:42:21
10.20.1.3            isis:524295     524286     Up    none   1
  Oper Flags         : None
  Sup BCast Domain   : No
  Last Update        : 12/13/2023 16:42:21
10.20.1.5            isis:524298     524283     Up    bum    0
  Oper Flags         : None
    
```

```

Sup BCast Domain : No
Last Update      : 12/13/2023 16:42:22
10.20.1.5        isis:524298      524284    Up    none    1
Oper Flags       : None
Sup BCast Domain : No
Last Update      : 12/13/2023 16:42:22
-----
Number of entries: 6
-----
=====
BGP EVPN-MPLS Dest (Instance 2)
=====
TEP Address          Transport:Tnl    Egr Label  Oper Mcast  Num
                   State                MACs
-----
No Matching Entries
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 1)
=====
Eth SegId            Num. Macs        Last Update
-----
No Matching Entries
=====
BGP EVPN-MPLS Ethernet Segment Dest (Instance 2)
=====
Eth SegId            Num. Macs        Last Update
-----
No Matching Entries
=====
BGP EVPN-MPLS ES BMAC Dest
=====
ES BMAC Addr         Last Change
-----
No Matching Entries
=====

#show service vlan-aware-bundle bundle0 vxlan
=====
Service Id: 1  Name: mac_vrf_1
=====
Service Id: 2  Name: mac_vrf_2
=====
VPLS VXLAN, Vxlan Instance: 1, VNI: 2
=====
Creation Origin: manual
Assisted-Replication: none
RestProtSrcMacAct: none

=====
VPLS VXLAN service Network Specifics
=====
-----
Ing Net QoS Policy: none
Ingress FP QGrp    : (none)          Ing FP QGrp Inst    : (none)
VTEP security      : disabled          MAC Learning         : disabled
    
```



```
MAC Aging      : disabled          Discard Unknown Source : disabled
MAC address limit : 0
=====
Service Id: 3 Name: mac_vrf_3
```

```
#show service vlan-aware-bundle bundle0 vxlan detail
=====
Service Id: 1 Name: mac_vrf_1
=====
Service Id: 2 Name: mac_vrf_2
=====
VPLS VXLAN, Vxlan Instance: 1, VNI: 2
=====
Creation Origin: manual
Assisted-Replication: none
RestProtSrcMacAct: none

=====
VPLS VXLAN service Network Specifics
=====
-----
Ing Net QoS Policy: none
Ingress FP QGrp   : (none)          Ing FP QGrp Inst      : (none)
VTEP security    : disabled        MAC Learning          : disabled
MAC Aging        : disabled        Discard Unknown Source : disabled
MAC address limit : 0
=====
Service Id: 3 Name: mac_vrf_3
```

```
#show service vlan-aware-bundle bundle0 segment-routing-v6
=====
Service Id: 1 Name: mac_vrf_1
=====
Segment Routing v6 Instance 1 Service 1
=====
Locator
Type          Function  SID                               Status
-----
dutD_L1
  End.DT2U    *124275  444:1:1:1:1:e573::              ok
  End.DT2M    *124274  444:1:1:1:1:e572::              ok
=====
Legend: * - System allocated
=====
Service Id: 2 Name: mac_vrf_2
=====
Service Id: 3 Name: mac_vrf_3
```

```
#show service vlan-aware-bundle bundle0 segment-routing-v6 detail
=====
Service Id: 1 Name: mac_vrf_1
=====
Segment Routing v6 Instance 1 Service 1
=====
Locator
Type          Function  SID                               Status
-----
dutD_L1
```

```

End.DT2U      *124275  444:1:1:1:1:e573::      ok
End.DT2M      *124274  444:1:1:1:1:e572::      ok
=====
Legend: * - System allocated
=====
Service Id: 2  Name: mac_vrf_2
=====
Service Id: 3  Name: mac_vrf_3
    
```

Table 636: VLAN-aware bundle Field Descriptions

Field	Descriptions
VLAN Aware Bundle	
Bundle	The destinations bundle name
Service Id	The service ID number
Eth Tag	The Ethernet tag value
Evi	The EVI value
Number of entries	The total number of entries
Vlan-Aware-Bundle Summary	
MAC Entries	The number of MAC entries
EVPN-MPLS Destinations	The number of EVPN-MPLS destinations
EVPN-MPLS Ethernet Segment Destinations	The number of EVPN-MPLS ES destinations
VXLAN Destinations	The number of VXLAN destinations
VXLAN Ethernet Segment Destinations	The number of VXLAN ES destinations
SRv6 Destinations	The number of SRv6 destinations
SRv6 Ethernet Segment Destinations	The number of SRv6 ES destinations
Forwarding Database, Service <Id>	
ServId	The service ID
MAC	The associated MAC address
Source-Identifier	The id of the source MAC
Type/Age	The number of seconds used to age out TLS FDB entries learned on local SAPs

Field	Descriptions
	<p>Age — Specifies the number of seconds used to age out TLS FDB entries learned on an SDP. These entries correspond to MAC addresses learned on remote SAPs.</p> <p>L — Learned - Dynamic entries created by the learning process.</p> <p>OAM — Entries created by the OAM process.</p> <p>P — Indicates the MAC is protected by the MAC protection feature.</p> <p>H — Host, the entry added by the system for a static configured subscriber host.</p> <p>D or DHCP — DHCP-installed MAC. Learned addresses can be temporarily frozen by the DHCP snooping application for the duration of a DHCP lease.</p> <p>Static — Statically configured.</p> <p>T — Trusted.</p>
Last Change	The date and time of the most recent state changes
Transport:Tnl-Id	The tunnel type and tunnel ID of the FDB entry
No. of MAC Entries	The total number of MAC entries
BGP EVPN-MPLS Dest (Instance <nbr>)	
TEP Address	The TEP address
Transport:Tnl	The transport tunnel
Egr Label	The egress label
Oper State	The operational state
Mcast	The mulitcast value
Num MACs	The number of MACs
Oper Flags	The operational flags value
Sup BCast Domain	The Sup BCast domain value
Last Update	The date and time of the last update
BGP EVPN-MPLS Ethernet Segment Dest (Instance <nbr>)	
Eth SegId	The Ethernet segment ID
BGP EVPN-MPLS ES BMAC Dest	
ES BMAC Addr	The ES BMAC IP address

Field	Descriptions
VPLS VXLAN	
Vxlan Instance	VXLAN instance value
VNI	The VNI
Creation Origin	The creation origin value
Assisted-Replication	The assisted replicaion mode
RestProtSrcMacAct	The restrict protected source MAC action
VPLS VXLAN service Network Specifics	
Ing Net QoS Policy	The ingress net QoS policy
Ingress FP QGrp	The ingress FP Q group
Ing FP QGrp Inst	The ingress FP Q group instance
VTEP security	The VTEP security status
MAC Learning	The MAC learning status
MAC Aging	The MAC aging status
Discard Unknown Source	The discard unknown source value
MAC address limit	The MAC address limit
Segment Routing v6 Instance <nbr> Service <nbr>	
Locator	The SRv6 locator name
Type	The SRv6 locator type
Function	The function
SID	The segment ID
Status	The status

## 25.14 volume

volume

### Syntax

**volume fields**

## Context

[\[Tree\]](#) (show>app-assure>cflowd volume)

## Full Context

show application-assurance cflowd volume

## Description

This command displays the fields in the AA cflowd volume template.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of AA cflowd volume template fields, and [Table 637: Show Volume Template Output Fields](#) describes the output fields.

### Output Example

```
show application-assurance cflowd volume fields

=====
Fields for Application Assurance cflowd volume template
=====
Name                               ID      Len Mode  Dy Description
-----
aaApp                               32770  32  MRVL  *  AA Application
aaAppGrp                           32771  32  MRVL  *  AA Application Group
aaChargingGrp                      32888  32  MRVL  *  AA Charging Group
aaProt                              32769  32  MRVL  *  AA Protocol
aaSubTetheringState                32896   1  MRVL  *  AA subscriber tethering
state
aaSubType                          32780   1  MRVL  .  AA Subscriber Type
anlCongestionState                 32874   1  MRVL  *  access network location
congestion state
anlTopology                         32873  16  MRVL  *  access network location
topology
anlType                             32872   1  MRVL  *  access network location
type
apn                                 32876  33  MRV-  *  access point name
apnExtended                        32928  64  MRV-  *  extended access point name
bsid                                32883  12  MRV-  *  base station id
cellId                              32886   4  MRV-  *  cell id
chargeId                            32877   4  MRV-  *  charging group id
chargingChar                        32901   2  MRV-  *  3GPP charging
characteristic
chargingRatingGrp                  32921   4  M---  *  online/offline charging
rating group
chargingServiceId                  32929   4  M---  *  online/offline charging
service-id
customerId                         32902   4  M---  *  Customer identifier
destinationIPv4Address              12     4  MRVL  .  Destination IPv4 address
destinationIPv6Address              28    16  MRVL  .  Destination IPv6 address
destinationTransportPort             11     2  MRVL  .  Destination transport port
deviceId                            32865   2  MRVL  *  device ID
deviceMfgId                        32866   2  MRVL  *  device manufacturer ID
deviceOsId                          32867   2  MRVL  *  device operating system ID
deviceOsVer1                        32869   1  MRVL  *  device operating system
```

deviceOsVer2	32870	1	MRVL	*	version number 1
deviceOsVer3	32871	1	MRVL	*	device operating system version number 2
flowAttr_abr_service	32890	1	MRVL	*	device operating system version number 3
flowAttr_audio	32891	1	MRVL	*	flow attribute: abr service
flowAttr_download	32893	1	MRVL	*	flow attribute: audio
flowAttr_encrypted	32892	1	MRVL	*	flow attribute: download
flowAttr_esni	32907	1	MRVL	*	flow attribute: encrypted
flowAttr_realtime_communication	32895	1	MRVL	*	flow attribute: encrypted SNI
flowAttr_upload	32894	1	MRVL	*	flow attribute: real time communication
flowAttr_video	32889	1	MRVL	*	flow attribute: upload
flowDirection	61	1	MRVL	.	flow attribute: video
flowDurationMilliseconds	161	4	MRVL	*	Flow direction
flowStartSeconds	150	4	MRVL	*	Flow duration milliseconds
hostName	32864	64	MRVL	*	Flow start seconds
hostNameExtended	32920	101	MRVL	*	host name
imei	32897	8	MRV-	*	host name extended
imei-aes-128	32916	32	MRV-	*	International Mobile Equipment Identity
imei-aes-256	32919	32	MRV-	*	imei AES-128 encrypted
imei-sha-1	32910	20	MRV-	*	imei AES-256 encrypted
imei-sha-256	32913	32	MRV-	*	imei SHA-1 hashed
imsi	32879	8	MRV-	*	imei SHA-256 hashed
imsi-aes-128	32915	16	MRV-	*	international mobile subscriber identity
imsi-aes-256	32918	16	MRV-	*	imsi AES-128 encrypted
imsi-sha-1	32909	20	MRV-	*	imsi AES-256 encrypted
imsi-sha-256	32912	32	MRV-	*	imsi SHA-1 hashed
interfaceName	82	32	MRVL	.	imsi SHA-256 hashed
ipFamily	32868	1	MRVL	*	Interface name
ipTTL	192	1	MRVL	*	IP Family
mcc	32899	2	MRV-	*	IP packet time to live
mnc	32878	2	MRV-	*	Mobile country code
msisdn	32880	8	MRV-	*	mobile network code
msisdn-aes-128	32914	16	MRV-	*	mobile station international subscriber directory number
msisdn-aes-256	32917	16	MRV-	*	msisdn AES-128 encrypted
msisdn-sha-1	32908	20	MRV-	*	msisdn AES-256 encrypted
msisdn-sha-256	32911	32	MRV-	*	msisdn SHA-1 hashed
multiDevice	32930	2	MRVL	*	msisdn SHA-256 hashed
observationPointId	138	4	MRVL	.	multi-device detection tracked device
octetDeltaCount	1	8	MRVL	.	Observation point Id
packetDeltaCount	2	8	MRVL	.	Octet delta count
pgw-ggsnAddr	32882	16	MRV-	*	Packet delta count
plmnid	32903	4	MRV-	*	public data network gateway
policyActionRuleUnitName	32926	33	M---	*	Public land mobile network identifier
policyChargingRuleUnitName	32925	33	M---	*	policy action rule unit name
policyRuleBaseName	32922	81	M---	*	policy charging rule unit name
policyRuleUnitName	32924	33	M---	*	policy rule base name
postIpPrecedence	257	1	MRVL	*	policy rule unit name
pra-id	32940	4	M---	*	Post IP precedence
protocolIdentifier	4	1	MRVL	.	presence reporting area ID
qci	32927	4	MR--	*	Protocol Identifier
					3gpp QCI

```

ratType          32884  2  MRV-  *  radio access technology
                  type
regionId         32885  2  MRV-  *  region id
roamingStatus   32898  1  M---  *  Roaming status
sgw-sgsnAddr    32881  16  M---  *  serving gateway
sourceIPv4Address 8       4  MRVL  .  Source IPv4 address
sourceIPv6Address 27      16  MRVL  .  Source IPv6 address
sourceTransportPort 7       2  MRVL  .  Source transport port
tcpRetransmittedBytes 32778  8  MRVL  *  TCP Retransmitted Bytes
tcpRetransmittedPackets 32779  8  MRVL  *  TCP Retransmitted Packets
tcpSessionEstDelay 32772  4  MRVL  *  TCP Session Establishment
                  Delay
timeZone        32887  2  M---  *  time zone
uli             32900  18  MRV-  *  User location information
wireless-device-os-id 32941  1  MRV-  *  wireless device operating
                  system ID
wireless-device-type-id 32942  1  MRV-  *  wireless device type ID
-----
Legend :
Mode (aa-sub-scale mode)  M mobile-gateway
                          R residential
                          V vpn
                          L lightweight-internet
Dy (dynamic field)       . always included in this record type
                          * can be dynamically included in this record type
=====
    
```

Table 637: Show Volume Template Output Fields

Label	Description
Name	Displays the name of the template field.
ID	Displays the ID of the template field.
Len	Displays the string length of the template field.
Mode	Displays the mode: <ul style="list-style-type: none"> <li>• M — mobile gateway</li> <li>• R — residential</li> <li>• V — VPN</li> <li>• L — lightweight Internet</li> </ul>
Dy	Displays whether the field is dynamic: <ul style="list-style-type: none"> <li>• . — always included in this record type</li> <li>• * — can be dynamically included in this record type</li> </ul>
Description	Displays the description of the template field.

## 25.15 vpls-fdb-stats

### vpls-fdb-stats

#### Syntax

**vpls-fdb-stats** [clear]

#### Context

[\[Tree\]](#) (tools>dump>service vpls-fdb-stats)

#### Full Context

tools dump service vpls-fdb-stats

#### Description

This command provides the VPLS FDB statistics for all services.

#### Platforms

All

#### Output

##### Output Example

```
*A:PE1# tools dump service vpls-fdb-stats
Service Manager VPLS FDB info at 01/31/2017 08:44:40:
Statistics last cleared at 01/31/2017 07:42:25
  Statistic | Count
-----|-----
      FdbEntriesInUse |      8
      TotalFdbEntries | 511999
      FdbMimDestIdxInUse |      0
TotalFdbMimDestIdxEntries | 32767
      FdbIsidIdxInUse |      0
TotalFdbMimIsidIdxEntries | 191999
      MacAddMsgs |      38
      MacDeleteMsgs |      0
      MacQueryMsgs |      0
      UnknownMsgs |      0
      MalformedMsgs |      0
      FailedMsgs |      0
      FdbHwTableFull |      0
      FdbHwLimitExceeded |      0
      FdbTableFull |      0
      FdbLimitExceeded |      0
      FdbMimDestIdxExhausted |      0
      MacAddReqs |      30
      DupMacAddReqs |      19
      DroppedMacAddReqs |      0
      FailedMacAddReqs |      19
      MacDelReqs |      0
      DupMacDelReqs |      0
```



```
DroppedMacDelReqs | 0
FailedMacDelReqs | 0
FailedMacCmplxMapUpdts | 0
RvplsFdbEntriesAllocated | 0
RvplsFdbEntriesInUse | 0
EsBmacFdbEntriesAllocated | 0
EsBmacFdbEntriesInUse | 0
*A:PE1#
```

## 25.16 vpls-sap-template

### vpls-sap-template

#### Syntax

**vpls-sap-template**

**vpls-sap-template** *template-name*

#### Context

[\[Tree\]](#) (show>service>template vpls-sap-template)

#### Full Context

show service template vpls-sap-template

#### Description

This command displays basic information such as summary, template name, and so on, for all SAP VPLS-templates.

#### Platforms

All

#### Output

The following output is an example of VPLS SAP template information.

#### Output Example

```
A:Dut-C# show service template vpls-sap-template squelch
=====
SAP template
=====
Template                Saps          Last Update
-----
saptemplate             30            07/26/2010 08:39:51
-----
Entries found: 1
=====
SAP Template Information
=====
Template                : saptemplate          Discard Unkn Src : disabled
```

```

MAC Aging           : enabled           MAC Learning       : enabled
BPDU Translation    : disabled          MAC Address Limit  : no limit
L2pt Termination    : disabled

STP
Admin Status        : up                Port Priority       : 128
Port Path Cost      : 10                Admin Edge         : disabled
Link Type           : Pt-pt             Root Guard          : disabled
Auto Edge           : enabled

MAC Move
Limit               : blockable         Limit Level         : tertiary

Ingress
QoS Policy          : 1                 MAC Fltr           : n/a
IP Fltr             : n/a                QoS Sched Pol     : n/a
Match QinQ Dot1p Bits : default          Shared Q Pol      : n/a
IPv6 Fltr           : n/a                Agg Rate Limit    : Max
Use Multi-Pt Shared : disabled

Egress
QoS Policy          : 1                 MAC Fltr           : n/a
IP Fltr             : n/a                QoS Sched Pol     : n/a
IPv6 Fltr           : n/a                QinQ Mark Top     : disabled
Agg Rate Limit      : Max                Policer Pol       : n/a
Frame Based Acctg   : disabled

CPM Prot Plcy       : def              CPM Monitor MAC   : disabled
Coll Acctg Stats    : disabled

ETH-CFM MIP         : disabled
ETH-CFM Squelch Level: 0 1 2 3 4 5
=====
    
```

## 25.17 vpls-sap-template-using

### vpls-sap-template-using

#### Syntax

**vpls-sap-template-using** *template-name*

#### Context

**[Tree]** (show>service>template vpls-sap-template-using)

#### Full Context

show service template vpls-sap-template-using

#### Description

This command displays services instantiated using vpls-sap-template.

## Platforms

All

## Output

The following output is an example of information about services instantiated using this VPLS template.

### Output Example

```
A:Dut-C# show service template vpls-sap-template-using "saptemplate"
=====
SAP template 'saptemplate' created SAPs
=====
SvcId          Sap                               Creator Svc   Vpls Group
-----
1-10           2/1/2:1-2/1/2:10                 5000         1
                2/2/8:1-2/2/8:10
                lag-1:1.*-lag-1:10.*
-----
Entries found: 30
=====
```

## 25.18 vpls-template

### vpls-template

#### Syntax

**vpls-template**

**vpls-template** *template-name*

#### Context

[\[Tree\]](#) (show>service>template vpls-template)

#### Full Context

show service template vpls-template

#### Description

This command displays basic information/summary, template name, etc. for all VPLS templates. When a template name is specified, detailed information for the specified template, VPLS parameters, and so on, are displayed.

## Platforms

All

## Output

The following output is an example of VPLS template information.

## Output Example

```
A:Dut-C# show service template vpls-template
=====
Service template
=====
Template                Services          Last Update
-----
test                    0                07/26/2010 08:40:01
svctemplate            10              07/26/2010 08:39:51
-----
Entries found: 2
=====
A:Dut-C# show service template vpls-template "svctemplate"
=====
Service template Information
=====
Template                : svctemplate
MTU Size                : 1514           Customer            : 10
MAC Aging               : enabled        MAC Learning        : enabled
Discard Unkn Dest      : disabled       Temp Flood Time    : Disabled
Per Svc Hashing         : disabled

FDB
Local Age Time          : 300 secs      Remote Age Time     : 900 secs
High Watermark          : 95%           Low Watermark       : 90%
Table Size              : 250

STP
Admin State             : disabled       Priority            : 32768
Bridge Max Age          : 20 secs       Bridge Hello Time  : 2 secs
Bridge Fwd Delay        : 15 secs       Mode                : rstp
Hold Cnt                : 6

MAC Move
Rate                    : 2/sec          Retry Timeout       : 10 secs
Admin State             : disabled       Num Retries         : 3
Pri-Ports Cumu Factor  : 3              Sec Cumu Factor     : 2
=====
```

## 25.19 vpls-template-using

### vpls-template-using

#### Syntax

**vpls-template-using** *template-name*

#### Context

**[Tree]** (show>service>template vpls-template-using)

#### Full Context

show service template vpls-template-using

## Description

This command displays services instantiated using the VPLS-template.

## Platforms

All

## Output

The following output is an example of service template information.

### Output Example

```
A:Dut-C# show service template vpls-template-using "svctemplate"
=====
Service template 'svctemplate' created Services
=====
SvcId          Creator Svc          Vpls Group
-----
1-10           5000                 1
-----
Entries found: 10
=====
```

## 25.20 vpn-ipv4

### vpn-ipv4

#### Syntax

```
vpn-ipv4 [aspath-regex reg-exp] [community comm-id] [rd rd] [brief]
vpn-ipv4 [aspath-regex reg-exp] hunt [community comm-id] [rd rd] [brief]
vpn-ipv4 [detail | longer] [aspath-regex reg-exp] [community comm-id] [rd rd]
```

#### Context

[\[Tree\]](#) (show>router>bgp>routes vpn-ipv4)

#### Full Context

```
show router bgp routes vpn-ipv4
```

#### Description

This command displays BGP VPN IPv4 routes.

#### Parameters

*reg-exp*

Displays routes matching the specified regular expression, up to 80 characters.

## hunt

Displays entries for the specified route.

### **comm-id**

Specifies the community ID, up to 72 characters.

**Values** [*as-num:comm-val* | *ext-comm* | *well-known-comm* | *large-comm*]

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:
  - *{target | origin}:ip-address:comm-val*
  - *{target | origin}:asnum:ext-comm-val*
  - *{target | origin}:ext-asnum:comm-val*
  - **bandwidth**:*asnum:val-in-mbps*
  - **ext:4300**:*ovstate*
  - **ext**:*value1:value2*
  - **flowspec-set**:*ext-asnum:group-id*where:
  - *target* — route target
  - *origin* — route origin
  - *ip-address* — a.b.c.d
  - *ext-comm-val* — 0 to 4294967295
  - *ext-asnum* — 0 to 4294967295
  - **bandwidth** — bandwidth
  - *val-in-mbps* — 0 to 16777215
  - **ext** — extended
  - **ext:4300** — origin verification
  - *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
  - *value1* — 0000 to FFFF
  - *value2* — 0 to FFFFFFFFFF
  - **flowspec-set** — flow-spec set
  - *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

**brief**

Displays the BGP VPN IPv4 route information in a brief format.

**Platforms**

All

## 25.21 vpn-ipv6

### vpn-ipv6

**Syntax**

**vpn-ipv6** [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*] [**brief**]

**vpn-ipv6** [**aspath-regex** *reg-exp*] **hunt** [**community** *comm-id*] [**rd** *rd*] [**brief**]

**vpn-ipv6** [**detail** | **longer**] [**aspath-regex** *reg-exp*] [**community** *comm-id*] [**rd** *rd*]

**Context**

[\[Tree\]](#) (show>router>bgp>routes vpn-ipv6)

**Full Context**

show router bgp routes vpn-ipv6

**Description**

This command displays BGP VPN IPv6 routes.

**Parameters**

**reg-exp**

Displays routes matching the specified regular expression, up to 80 characters.

**hunt**

Displays entries for the specified route.

**comm-id**

Specifies the community ID, up to 72 characters.

**Values** *[as-num:comm-val | ext-comm | well-known-comm | large-comm]*

where:

- *as-num* — 0 to 65535
- *comm-val* — 0 to 65535
- *ext-comm* — the extended community, defined as one of the following:

- *{target | origin}:ip-address:comm-val*
- *{target | origin}:asnum:ext-comm-val*
- *{target | origin}:ext-asnum:comm-val*
- **bandwidth**:*asnum:val-in-mbps*
- **ext:4300**:*ovstate*
- **ext**:*value1:value2*
- **flowspec-set**:*ext-asnum:group-id*

where:

- *target* — route target
- *origin* — route origin
- *ip-address* — a.b.c.d
- *ext-comm-val* — 0 to 4294967295
- *ext-asnum* — 0 to 4294967295
- **bandwidth** — bandwidth
- *val-in-mbps* — 0 to 16777215
- **ext** — extended
- **ext:4300** — origin verification
- *ovstate* — 0, 1, or 2 (0 for valid, 1 for not found, 2 for invalid)
- *value1* — 0000 to FFFF
- *value2* — 0 to FFFFFFFFFF
- **flowspec-set** — flow-spec set
- *group-id* — 0 to 16383
- *well-known-comm* — **null** | **no-export** | **no-export-subconfed** | **no-advertise** | **blackhole**
- *large-comm* — *asn-or-ex:val-or-ex:val-or-ex*

### **rd**

Displays information for the route distinguisher.

**Values** *ip-addr:comm-val | 2byte-asnumber:ext-comm-val | 4byte-asnumber:comm-val*

### **brief**

Displays the BGP VPN IPv6 route information in a brief format.

## **Platforms**

All



## 25.22 vport

### vport

#### Syntax

**vport** *name* [**interval** *seconds*] [**repeat** *repeat*] [**absolute** | **rate**]

**vport** *name* [**interval** *seconds*] [**repeat** *repeat*] **monitor-threshold**

#### Context

[\[Tree\]](#) (monitor>port vport)

#### Full Context

monitor port vport

#### Description

This command monitors Vport statistics.

#### Parameters

##### *name*

Specifies the Vport name, up to 32 characters.

##### *seconds*

Specifies the interval for each display, in seconds.

**Values** 11 to 60

##### *repeat*

Specifies the number of times the command is repeated.

**Values** 1 to 999

##### **absolute**

When the absolute keyword is specified, the raw statistics are displayed without processing. No calculations are performed on the delta or rate statistics.

##### **rate**

When the rate keyword is specified, the rate-per-second for each statistic is displayed instead of the delta.

##### **monitor-threshold**

Displays the exceed count for the port-scheduler under Vport (if specified) or for a physical port.

#### Platforms

All

## vport

### Syntax

**vport** [*name*] [**statistics** | **associations**] [ **monitor-threshold**] [**port-sched** | **hw-agg-shaper-sched**]

### Context

[\[Tree\]](#) (show>port vport)

### Full Context

show port vport

### Description

This command displays Vport information.

### Parameters

#### *name*

Specifies the Vport name, up to 32 characters.

#### **statistics**

Displays the statistics related to the Vport.

#### **associations**

Displays the associations related to the Vport.

#### **monitor-threshold**

Displays the exceed count for the port-scheduler under Vport (if specified) or for a physical port.

#### **port-sched**

Displays the port scheduler policy associated with the Vport.

#### **hw-agg-shaper-sched**

Displays the hardware aggregate shaper scheduler policy associated with the Vport.

### Platforms

All

## vport

### Syntax

**vport summary**

### Context

[\[Tree\]](#) (show>qos vport)

## Full Context

show qos vport

## Description

This command displays Vport information.

## Parameters

### summary

Displays summary information.

## Platforms

All

## 25.23 vrf-export-test

### vrf-export-test

## Syntax

**vrf-export-test** *policy-name* [*policy-name...*{up tp 15 max}] **prefix** *ip-prefix/ip-prefix-length* [**longer**] [**display-rejects**] [**display-rejects-only**] [**protocol** *protocol*]

**vrf-export-test** *plcy-or-long-expr* [*plcy-or-expr* [*plcy-or-expr...*{up tp 14 max}] **prefix** *ip-prefix/ip-prefix-length* [**longer**] [**display-rejects**] [**display-rejects-only**] [**protocol** *protocol*]

## Context

[\[Tree\]](#) (show>router vrf-export-test)

## Full Context

show router vrf-export-test

## Description

This command tests an existing route policy, a chain of route policies, or a route policy logical expression in order to assess its effects as a VRF export policy. This is determined by identifying the routes that would be accepted or rejected after the complete evaluation.

## Parameters

### *plcy-or-long-expr*

Specifies up to 14 policy names or a long expression.

**Values**    *policy-name*: a policy name, up to 64 characters  
             *long-expr*: a long expression, up to 255 characters.

***plcy-or-expr***

Specifies the policy name or expression.

**Values**    policy-name: a policy name, up to 64 characters  
              expr: an expression, up to 64 characters

***policy-name***

Specifies the policy name of an existing configured and committed policy, up to 64 characters.

***longer***

Matches prefixes with a longer prefix-length.

***ip-prefix/ip-prefix-length***

Specifies an IPv4 or IPv6 prefix/mask to be evaluated. The keyword **longer** may be specified to evaluate longer prefix matches (optional).

***display-rejects***

Displays routes that were rejected by the policy. If not specified, only a count of rejected routes is displayed.

***display-rejects-only***

Displays only routes rejected by the policy test.

***protocol***

Displays routes by the protocol type.

**Platforms**

All

**Output**

**Output Example**

```
*A:Dut-B# show router 20 vrf-export-test "test" prefix 0.0.0.0/0 longer protocol direct
=====
Route Table (Service: 20)
=====
Accepted by Policy test Entry 1
  Dest prefix: 30.30.30.30/32
  Protocol   : LOCAL
Accepted by Policy test Entry 1
  Dest prefix: 40.0.0.0/24
  Protocol   : LOCAL
Accepted by Policy test Entry 1
  Dest prefix: 50.1.0.0/16
  Protocol   : LOCAL
-----
Routes : 3
=====
```

The following table describes the VRF Export Test output fields.

Table 638: Show VRF Export Test Information Fields

Label	Description
Dest prefix	Displays the destination IPv4 or IPv6 prefix/mask.
Protocol	Displays the protocol type.

## 25.24 vrgw

vrgw

### Syntax

vrgw

### Context

[\[Tree\]](#) (show>subscr-mgmt vrgw)

### Full Context

show subscriber-mgmt vrgw

### Description

This command displays Virtual Residential Gateway information.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

vrgw

### Syntax

vrgw

### Context

[\[Tree\]](#) (clear>subscr-mgmt vrgw)

### Full Context

clear subscriber-mgmt vrgw

### Description

This command clears vRGW data.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
vrgw
```

## Syntax

```
vrgw
```

## Context

[\[Tree\]](#) (tools>perform>subscr-mgmt vrgw)

## Full Context

```
tools perform subscriber-mgmt vrgw
```

## Description

This command enables tools for controlling vRGWs

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 25.25 vrrp

```
vrrp
```

## Syntax

```
vrrp
```

## Context

[\[Tree\]](#) (clear vrrp)

## Full Context

```
clear vrrp
```

## Description

Commands in this context clear and reset VRRP entities.

## Platforms

All

```
vrrp
```

### Syntax

```
vrrp
```

### Context

[\[Tree\]](#) (clear>router vrrp)

### Full Context

```
clear router vrrp
```

### Description

Commands in this context clear and reset VRRP virtual router instances.

### Platforms

All

```
vrrp
```

### Syntax

```
vrrp
```

### Context

[\[Tree\]](#) (show>router vrrp)

### Full Context

```
show router vrrp
```

### Description

This command displays information VRRP instances.

### Platforms

All

```
vrrp
```

### Syntax

```
vrrp
```

## Context

[\[Tree\]](#) (show vrrp)

## Full Context

show vrrp

## Description

Commands in this context display information related to VRRP policies.

## Platforms

All

vrrp

## Syntax

vrrp

## Context

[\[Tree\]](#) (monitor>router vrrp)

## Full Context

monitor router vrrp

## Description

Commands in this context configure criteria to monitor VRRP statistical information for a VRRP enabled on a specific interface.

## Platforms

All

## 25.26 vxlan

vxlan

## Syntax

**vxlan** [**instance** *vxlan-instance*] **assisted-replication replicator**

**vxlan esi esi** [**instance** *vxlan-instance*] [**detail**]

**vxlan instance** *vxlan-instance* **oper-flags**

**vxlan** [**instance** *vxlan-instance*]

**vxlan** [**instance** *vxlan-instance*] [**detail**] **destinations**



## vxlan detail

### Context

[\[Tree\]](#) (show>service>id vxlan)

### Full Context

```
show service id vxlan
```

### Description

This command displays the VXLAN instance parameters. With **destinations** added, the command shows the VXLAN bindings auto-created or configured in a specified service. The service command can be filtered by VXLAN instance, if the service has more than one instance. A VXLAN binding is composed of the remote (VTEP) and the corresponding egress (VNI) to identify the service at the egress node. The command shows the number of MACs associated to each binding as well as the operational status and if the binding is part of the multicast list. The binding will be operationally down when the VTEP address is not found in the base routing table (the VTEP address cannot be reached). A binding will be part of a multicast list if a valid BGP EVPN inclusive multicast route exists for it.

A VXLAN binding can be associated with the following types of multicast values.

- **BM** — Refers to the capability of the binding to send broadcast or multicast to the remote VTEP. This binding type is setup to AR replicator nodes from a leaf node.
- **BUM** — Refers to the capability of the binding to send broadcast or multicast to the remote VTEP. This binding type is setup to AR replicator nodes from a leaf node.
- **U** — Refers to the capability of the binding to send unknown unicast to the VTEP. This binding type is setup from leaf nodes to other leaf and RNVE nodes.
- **"-"** — Specifies that the binding can only be used for known unicast traffic.

### Parameters

#### assisted-replication replicator

Displays all the discovered candidate AR replicators for the service and the replicator that has been selected by the leaf to send the BM traffic. The list of replicators is ordered by VTEP address and VNI. This command is only supported on the nodes configured as leaf.

The "In Use" column indicates whether the replicator has been selected for the service. When selecting a replicator for the service, the candidate list is ordered by VTEP IP (lowest IP is ordinal 0) and VNI. A modulo function of the service ID and the number of candidate PEs will give the selected replicator for a specified service.

The "Pending Time" column shows the remaining seconds until the node starts sending the BM traffic to the replicator. This time is configurable by the *replicator-activation-time* parameter.

For services supporting EVPN multi-homing, the command can also show ES destinations as well as VXLAN bindings. In this case, the output can be filtered by the ESI in order to see the VXLAN destinations that the ES is comprised of.

#### esi

Specifies a 10-byte ESI by which to filter the displayed information. For example, ESI-0 | ESI-MAX or 00-11-22-33-44-55-66-77-88-99 with any of these separators ('-',':',';','')

**instance**

Specifies the VXLAN instance.

**Values** 1, 2

**detail**

Keyword used to display detailed information.

**oper-flags**

Keyword used to display the operational flags.

**Platforms**

All

**Output**

**Output Example**

```
show service id "evi-112-vxlan-cw-mtu" vxlan destinations
```

```
=====
Egress VTEP, VNI (Instance 1)
=====
VTEP Address                               Egress VNI Oper  Mcast Num
                                           State      MACs
-----
192.0.2.2                                  112        Down BUM  0
192.0.2.3                                  112        Down BUM  0
-----
Number of Egress VTEP, VNI : 2
=====
```

```
show service id "evi-112-vxlan-cw-mtu" vxlan destinations detail
```

```
=====
Egress VTEP, VNI (Instance 1)
=====
VTEP Address                               Egress VNI Oper  Mcast Num
                                           State      MACs
-----
192.0.2.2                                  112        Down BUM  0
  Oper Flags      : MTU-Mismatch
  Type            : evpn
  L2 PBR          : No
  Sup BCast Domain : No
  Last Update     : 01/31/2023 21:28:39
192.0.2.3                                  112        Down BUM  0
  Oper Flags      : MTU-Mismatch
  Type            : evpn
  L2 PBR          : No
  Sup BCast Domain : No
  Last Update     : 01/31/2023 21:28:39
-----
Number of Egress VTEP, VNI : 2
=====
```

```

=====
show service id 900 vxlan instance 1

=====
VPLS VXLAN, Vxlan Instance: 1, VNI: 900
=====
Creation Origin: manual
Assisted-Replication: none
RestProtSrcMacAct: none
=====
VPLS VXLAN service Network Specifics
=====
-----
Ing Net QoS Policy: none
Ingress FP QGrp   : (none)           Ing FP QGrp Inst       : (none)
VTEP security    : disabled          MAC Learning           : enabled
MAC Aging        : enabled           Discard Unknown Source : disabled
MAC address limit : 0
=====
=====

show service id 7000 vxlan assisted-replication replicator

=====
Vxlan AR Replicator Candidates
=====
VTEP Address      Egress VNI    In Use  In Candidate List Pending Time
-----
10.4.4.4          7000         yes    yes                0
10.5.5.5          7000         no     yes                0
-----
Number of entries : 2
-----
=====

show service id 500 vxlan instance 1 oper-flags

=====
VPLS VXLAN oper flags
=====
MhStandby                : false
=====
=====
    
```

**Table 639: Show VXLAN Information Fields** describes the VXLAN output fields.

*Table 639: Show VXLAN Information Fields*

Label	Description
VXLAN Instance	Displays the VXLAN instance.
VNI	Displays the VNI.
AR	Displays the AR.

Label	Description
Oper-flags	Displays the operational flags.
VTEP security	Displays the VTEP security status (enabled, disabled).
Number of entries	Indicates the number of entries.
Creation Origin	Displays the creation origin value.
Assisted-Replication	Displays the assisted replication value.
RestProtSrcMacAct	Displays the RestProtSrcMacAct value.
Ing Net QoS Policy	Displays the Ing Net QoS Policy value.
Ingress FP QGrp	Displays the Ingress FP QGrp value.
Ing FP QGrp Inst	Displays the Ing FP QGrp Inst value.
MAC Learning	Displays the MAC learning value.
MAC Aging	Displays the MAC aging value.
Discard Unknown Source	Displays the discard unknown source value.
MAC address limit	Displays the MAC address limit.
VTEP Address	Displays the VTEP IP address.
Egress VNI	Displays the Egress VNI value.
In Use	Displays the In use value.
In Candidate List	Displays the In Candidate list value.
Pending Time	Displays the Pending time value.
MhStandby	Displays the MhStandby flag value.
Eth SegId	Displays the Ethernet Segment ID value.
TEP Address	Displays the TEP IP address.
Instance	Displays the Instance value.
Evpn/Static	Displays the Evpn/Static value.
Num. MACs	Displays the number of MACs.
Mcast	Displays the Mcast value.
Oper State	Displays the operational state.
L2 PBR	Displays the Layer 2 PBR value.

Label	Description
Sup BCast Domain	Displays the Sup BCast Domain value.

## vxlan

### Syntax

**vxlan** [*ip-address*]

### Context

**[Tree]** (show>service vxlan)

### Full Context

show service vxlan

### Description

This command displays the VXLAN bindings auto-created in a specified service. A VXLAN binding is composed of the remote VTEP (VXLAN Termination Endpoint) and the corresponding egress VNI (VXLAN Network Identifier) to identify the service at the egress node. The command shows the number of MACs associated to each binding as well as the operational status and if the binding is part of the multicast list. The binding will be operationally down when the VTEP address is not found in the base routing table (the VTEP address cannot be reached). A binding will be part of the multicast list if a valid BGP EVPN inclusive multicast route exists for it.

A VXLAN binding can be associated with the following types of Mcast values.

- **BM** — Refers to the capability of the binding to send Broadcast or Multicast to the remote VTEP. This binding type is setup to AR Replicator nodes from a Leaf node.
- **BUM** — Refers to the capability of the binding to send Broadcast or Multicast to the remote VTEP. This binding type is setup to AR Replicator nodes from a Leaf node.
- **U** — Refers to the capability of the binding to send Unknown Unicast to the VTEP. This binding type is setup from Leaf nodes to other Leaf and RNVE nodes.
- **"-"** — Specifies that the binding can only be used for known unicast traffic.

### Parameters

#### *ip-address*

Specifies the remote VTEP address for the VXLAN binding.

**Values**    ipv4-address: a.b.c.d  
              ipv6-address: x:x:x:x:x:x:x (eight 16-bit pieces)  
              x:x:x:x:x:d.d.d.d  
              where:  
              x: [0 to FFFF]H  
              d: [0 to 255]D

## Platforms

All

## Output

### Output Example

```
=====
A:PE6# show service vxlan
=====
VXLAN Tunnel Endpoints (VTEPs)
=====
VTEP Address                                Number of Egress VNIs    Oper
State
-----
10.2.2.2                                     1                         Up
10.4.4.4                                     2                         Up
10.5.5.5                                     1                         Up
192.0.2.2                                    1                         Up
192.0.2.3                                    1                         Up
192.0.2.4                                    2                         Up
192.0.2.5                                    2                         Up
-----
Number of VTEPs: 7
=====
A:PE6# show service vxlan 2.2.2.2
=====
VXLAN Tunnel Endpoint: 2.2.2.2
=====
Egress VNI                                Service Id                Oper State
-----
4000                                       4000                     Up
-----
=====
```

## vxlan

## Syntax

vxlan

## Context

[\[Tree\]](#) (show>service>system vxlan)

## Full Context

show service system vxlan

## Description

This command shows the global VXLAN configuration in the system. In particular, the command displays the configured assisted-replication IP address and the VXLAN tunnel-termination addresses, if the system terminates VXLAN tunnels in addresses that are not the same as the system IP address.

## Platforms

All

## Output

### Output Example

```
A:PE1# show service system vxlan
=====
System VXLAN Information
=====
Asstd Repl Ip Address.           :
=====
Vxlan Tunnel Termination
=====
Tunnel Term IP                   FPE ID   Last Change
-----
10.11.11.1                       1        06/22/2016 14:18:55
-----
Number of Entries: 1
=====
```

## vxlan

### Syntax

**vxlan** [**clear**]

### Context

[\[Tree\]](#) (tools>dump>service>id vxlan)

### Full Context

tools dump service id vxlan

### Description

This command displays the number of times a service could not add a VXLAN binding or <VTEP, Egress VNI> due to the following limits:

- The per-system VTEP limit has been reached
- The per-system <VTEP, Egress VNI> limit has been reached
- The per-service <VTEP, Egress VNI> limit has been reached
- The per-system Bind limit: Total bind limit or vxlan bind limit has been reached.

### Parameters

**clear**

Clears the per-system VTEP, per-system VTEP Egress VNI, per-service VTEP Egress VNI, and per-system Bind statistics.

## Platforms

All

## Output

### Output Example

```
*A:PE63# tools dump service id 3 vxlan
VTEP, Egress VNI Failure statistics at 000 00:03:55.710:
statistics last cleared at 000 00:00:00.000:
  Statistic          |      Count
-----|-----
                VTEP |          0
      Service Limit |          0
        System Limit |          0
Egress Mcast List Limit |          0
```

## 25.27 vxlan-instance-using

### vxlan-instance-using

## Syntax

**vxlan-instance-using ethernet-segment** [*name*]

## Context

[\[Tree\]](#) (show>service vxlan-instance-using)

## Full Context

show service vxlan-instance-using

## Description

This command displays the services and VXLAN instances associated with a specified virtual ES, as well as its operational status.

## Parameters

*name*

Specifies the virtual ES name, up to 32 characters.

## Platforms

All

## Output

### Output Example

```
A:PE-2# show service vxlan-instance-using ethernet-segment "vES23"
```



```
=====
VXLAN Ethernet-Segment Information
=====
SvcId                VXLAN Instance      Status
-----
500                  1                   DF
=====
A:PE-2# show service vxlan-instance-using ethernet-segment
=====
VXLAN Ethernet-Segment Information
=====
SvcId   VXLAN Instance  ES Name           Status
-----
500     1               vES23             DF
=====
```

## 26 w Commands

### 26.1 web-rd

```
web-rd
```

#### Syntax

```
web-rd
```

#### Context

[\[Tree\]](#) (tools>dump>router web-rd)

#### Full Context

```
tools dump router web-rd
```

#### Description

Commands in this context dump web or HTTP redirection.

#### Platforms

All

### 26.2 web-service

```
web-service
```

#### Syntax

```
web-service
```

#### Context

[\[Tree\]](#) (show>app-assure web-service)

#### Full Context

```
show application-assurance web-service
```

#### Description

This command displays web-service information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 26.3 week

week

### Syntax

**week**

**week application** *license-app*

### Context

[\[Tree\]](#) (show>system>license-statistics week)

### Full Context

show system license-statistics week

### Description

This command displays application license statistics for the last week.

### Parameters

***license-app***

Specifies the application license.

**Values**    Ins, nat, sub-mgmt, wlan-gw, aa, ipsec

### Platforms

VSR

## 26.4 wholesalers

wholesalers

### Syntax

**wholesalers**

### Context

[\[Tree\]](#) (show>service>id wholesalers)

## Full Context

```
show service id wholesalers
```

## Description

This command displays service wholesaler information.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of service wholesaler information.

### Output Example

```
*A:ALA-48>config# show service id 102 wholesalers
=====
Wholesalers for service 102
=====
Wholesaler Svc ID          Num Static Hosts      Num Dynamic Hosts
-----
101                        3                      1
-----
Number of wholesalers : 1
=====
*A:ALA-48>config#
```

Wholesaler information can also be displayed in the lease-state context.

```
*A:ALA-48>config# show service id 105 dhcp lease-state wholesaler 101
=====
DHCP lease state table, service 105
=====
IP Address      Mac Address          Sap/Sdp Id          Remaining Lease      MC
                LifeTime             Origin              Stdby
-----
Wholesaler 101 Leases
-----
10.3.2.62      00:00:1f:bd:00:c6 lag-1:105          00h00m39s  RADIUS
-----
Number of lease states : 1
=====
*A:ALA-48>config#
```

## 26.5 wlan-gw

### wlan-gw

#### Syntax

```
wlan-gw
```

## Context

[\[Tree\]](#) (clear wlan-gw)

## Full Context

clear wlan-gw

## Description

Commands in this context clear WLAN gateway commands.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## wlan-gw

## Syntax

wlan-gw

## Context

[\[Tree\]](#) (clear>router wlan-gw)

## Full Context

clear router wlan-gw

## Description

Commands in this context clear WLAN gateway data.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## wlan-gw

## Syntax

wlan-gw gtp-statistics

wlan-gw statistics

## Context

[\[Tree\]](#) (clear>subscr-mgmt wlan-gw)

## Full Context

clear subscriber-mgmt wlan-gw

## Description

This command clears WLAN-GW data.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

wlan-gw

## Syntax

wlan-gw

## Context

[\[Tree\]](#) (show>call-trace wlan-gw)

## Full Context

show call-trace wlan-gw

## Description

Commands in this context display information related to the wlan-gw call-trace functionality.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

wlan-gw

## Syntax

wlan-gw

## Context

[\[Tree\]](#) (show>router wlan-gw)

## Full Context

show router wlan-gw

## Description

This command displays Wireless LAN Gateway information.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## wlan-gw

### Syntax

wlan-gw

### Context

[\[Tree\]](#) (show>subscr-mgmt wlan-gw)

### Full Context

show subscriber-mgmt wlan-gw

### Description

Commands in this context display Wireless LAN Gateway information.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## wlan-gw

### Syntax

wlan-gw

### Context

[\[Tree\]](#) (tools>dump wlan-gw)

### Full Context

tools dump wlan-gw

### Description

Commands in this context dump tools for Wireless LAN Gateway.

### Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## wlan-gw

### Syntax

wlan-gw

## Context

[\[Tree\]](#) (tools>perform wlan-gw)

## Full Context

tools perform wlan-gw

## Description

Commands in this context provide tools for Wireless LAN Gateway.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 26.6 wlan-gw-group

### wlan-gw-group

## Syntax

**wlan-gw-group** *wlan-gw-group-id*

**wlan-gw-group** *wlan-gw-group-id* **associations**

**wlan-gw-group** *wlan-gw-group-id* **member** *member-id*

**wlan-gw-group** *wlan-gw-group-id* **member** *member-id* **resource-statistics**

**wlan-gw-group** *wlan-gw-group-id* **member** *member-id* **statistics** [**type** *type*] [**non-zero-value-only**]

**wlan-gw-group**

## Context

[\[Tree\]](#) (show>isa wlan-gw-group)

## Full Context

show isa wlan-gw-group

## Description

This command displays WLAN-GW group information, including WLAN-GW tunnels.

## Parameters

### **wlan-gw-group-id**

Displays information about the specified WLAN-GW group ID.

**Values** 1 to 4

### **associations**

Displays information about associations for the specified WLAN-GW group ID.



**member member-id**

Displays information about the WLAN-GW-specific status and basic statistics information about the specified member.

**Values** 1 to 255

**type type**

Displays a reduced output to only show statistics of the specified type.

**Values** packet-errors, host-errors, bd-errors, forwarding, reassembly, aa, radius, arp, dhcp, dhcp6, icmp, icmp6

**non-zero-value-only**

Displays a reduced output to only show statistics whose value is bigger than zero.

**resource-statistics**

Displays the resource usage on the specified group member.

**statistics**

Displays statistics information about the members of the specified WLAN-GW group.

**Platforms**

7750 SR, 7750 SR-e, 7750 SR-s, VSR

**Output**

The following output is an example of ISA WLAN-GW group information.

**Output Example**

```
*A:Dut-B>config>isa>wlan-gw-group$ show isa wlan-gw-group 4
=====
WLAN Gateway group 4
=====
Administrative state      : in-service
Operational state        : in-service
Degraded                  : false
Active IOM limit         : 0
Active MDA limit         : 14
Port policy               : (Not Specified)
Tunnel port policy       : (Not Specified)
Dsm ISA AA group         : (Not Specified)
Last Mgmt Change         : 06/28/2017 15:07:34
-----
NAT specific information for ISA group 4
-----
Reserved sessions        : 0
High Watermark (%)       : (Not Specified)
Low Watermark (%)        : (Not Specified)
Accounting policy        : (Not Specified)
UPnP mapping limit       : 524288
Suppress LsnSubBlksFree  : false
LSN support              : enabled
Last Mgmt Change         : 06/28/2017 15:06:40
-----
=====
ISA Group 4 members
=====
```

Group	Member	State	Mda	Addresses	Blocks	Se-%	Hi	Se-Prio
4	1	active	3/1	0	0	< 1	N	0
4	2	active	3/2	0	0	< 1	N	0
4	3	active	4/1	0	0	< 1	N	0
4	4	active	4/2	0	0	< 1	N	0
4	5	active	5/1	0	0	< 1	N	0
4	6	active	5/2	0	0	< 1	N	0
4	7	active	6/1	0	0	< 1	N	0
4	8	active	6/2	0	0	< 1	N	0
4	9	active	7/1	0	0	< 1	N	0
4	10	active	7/2	0	0	< 1	N	0
4	11	active	8/1	0	0	< 1	N	0
4	12	active	8/2	0	0	< 1	N	0
4	13	active	9/1	0	0	< 1	N	0
4	14	active	9/2	0	0	< 1	N	0

No. of members: 14

## wlan-gw-group

### Syntax

**wlan-gw-group** *group-id* **member** *member-id* **resource-peak-values**

**wlan-gw-group** *group-id* **member** *member-id* **statistics**

### Context

[\[Tree\]](#) (clear>wlan-gw>isa wlan-gw-group)

### Full Context

clear wlan-gw isa wlan-gw-group

### Description

This command resets wlan-gw statistics per group member.

### Parameters

#### **group-id**

Specifies the WLAN-GW group ID.

**Values** 1 to 4

#### **member member-id**

Specifies the member ID.

**Values** 1 to 255

#### **statistics**

Resets the statistics measurements to zero.

#### **resource-peak-values**

Resets the resource peak values to the current resource measurements.

## Platforms

7750 SR, 7750 SR-e, 7750 SR-s, VSR

## 26.7 wpp

```
wpp
```

### Syntax

```
wpp
```

### Context

[\[Tree\]](#) (clear>router wpp)

### Full Context

```
clear router wpp
```

### Description

Commands in this context clear WPP data.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

```
wpp
```

### Syntax

```
wpp portal-group name
```

```
wpp [portal-group name] [host ip-address] hosts
```

### Context

[\[Tree\]](#) (show>aaa wpp)

### Full Context

```
show aaa wpp
```

### Description

This command displays information about the specified WPP portal group or the WPP hosts controlled by the WPP portal group.

## Parameters

### *name*

Specifies the name of the WPP portal group up to 32 characters.

### *ip-address*

Specifies the IP address of the WPP host.

### *hosts*

Shows the status of triggered hosts.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of WPP portal group or WPP host information.

### Output Example

```
show aaa wpp portal-group "test"
=====
wpp portal group "test"
=====
administrative state      : in-service
controlled router        : 500
number of enabled interfaces : 1
triggered hosts          : disabled
last management change   : 01/02/2017 19:02:11
=====
```

[Table 640: WPP Portal Group Field Descriptions](#) describes WPP portal group output fields.

*Table 640: WPP Portal Group Field Descriptions*

Field	Description
administrative state	The administrative state of the WPP portal group
controlled router	The identifier of the virtual router instance being controlled by this portal
number of enabled interfaces	The number of interfaces associated with this portal that are administratively enabled
triggered hosts	Triggered hosts are enabled or disabled on this portal

## wpp

## Syntax

### wpp

**wpp** [**portal** *wpp-portal-name*] [**host** *ip-address*] **hosts**

**wpp portal** *wpp-portal-name*  
**wpp statistics**

## Context

[Tree] (show>router wpp)

## Full Context

show router wpp

## Description

This command displays WPP port-related information in the specified routing instance.

## Parameters

### **wpp-portal-name**

Specifies the name of this WPP portal.

### **ip-address**

Specifies the host IP address.

### **hosts**

Displays the hosts enabled on the portal.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## Output

The following output is an example of router WPP information.

### Output Example

```
show router wpp
=====
WPP portals
=====
Portal                Address          Controlled-Rtr    Num-Itf
-----
svr1                  1.1.1.1         0                 0
svr2                  2.2.2.2         0                 0
-----
No. of portals: 2
=====

show router wpp portal "svr1"
=====
WPP Portal "svr1"
=====
Address                : 1.1.1.1
Controlled router      : 0
Number of enabled interfaces : 0
Triggered hosts        : disabled
Last management change : 01/27/2014 00:48:45
=====
```

[Table 641: Router WPP Field Descriptions](#) describes router WPP output fields.

Table 641: Router WPP Field Descriptions

Label	Description
Portal	The web portal server name that the system communicates to for the hosts on the group interface
Address	The portal IP address
Controlled-Rtr	The identifier of the virtual router instance being controlled by this portal
Num-Itf	The number of interfaces associated with this portal
Number of enabled interfaces	The number of interfaces associated with this portal that are administratively enabled
Triggered hosts	Triggered hosts are enabled or disabled on this portal
Last management change	The time of the most recent management-initiated change to this WPP portal

## wpp

### Syntax

**wpp peer** [*ip-address*] **statistics**

### Context

[\[Tree\]](#) (show>redundancy>multi-chassis wpp)

### Full Context

show redundancy multi-chassis wpp

### Description

This command displays multi-chassis WPP information.

### Parameters

#### *ip-address*

Specifies the IP address.

- Values**
- ipv4-address: a.b.c.d
  - ipv6-address:
    - x:x:x:x:x:x:x (eight 16-bit pieces)
    - x:x:x:x:x:d.d.d.d
    - x: [0 to FFFF] H

- d: [0 to 255] D

### statistics

Displays statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## wpp

### Syntax

**wpp peer** [*ip-address*] **statistics**

### Context

[\[Tree\]](#) (clear>redundancy>multi-chassis wpp)

### Full Context

clear redundancy multi-chassis wpp

### Description

This command clears multi-chassis WPP information.

### Parameters

#### *ip-address*

Specifies the WPP IP address.

- |               |                                       |
|---------------|---------------------------------------|
| <b>Values</b> | ipv4-address: a.b.c.d                 |
|               | ipv6-address:                         |
|               | • x:x:x:x:x:x:x (eight 16-bit pieces) |
|               | • x:x:x:x:x:d.d.d.d                   |
|               | • x: [0 to FFFF] H                    |
|               | • d: [0 to 255] D                     |

### statistics

Clears the multi-chassis WPP statistics.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, VSR

## 27 x Commands

### 27.1 x-interfaces

#### x-interfaces

##### Syntax

x-interfaces

##### Context

[\[Tree\]](#) (show>li x-interfaces)

##### Full Context

show li x-interfaces

##### Description

Commands in this context display information about the LI X1, X2, and X3 interfaces.

##### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

### 27.2 x1

#### x1

##### Syntax

x1 lic *lic-name*

##### Context

[\[Tree\]](#) (show>li>x-interfaces>statistics x1)

##### Full Context

show li x-interfaces statistics x1

##### Description

This command displays X1 statistics.



## Parameters

### *lic-name*

Specifies the LIC name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 27.3 x2

### x2

## Syntax

**x2 lic** *lic-name*

## Context

[\[Tree\]](#) (show>li>x-interfaces>statistics x2)

## Full Context

show li x-interfaces statistics x2

## Description

This command displays X2 statistics.

## Parameters

### *lic-name*

Specifies the LIC name, up to 32 characters.

## Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 27.4 x3

### x3

## Syntax

**x3 lic** *lic-name*

## Context

[\[Tree\]](#) (show>li>x-interfaces>statistics x3)

### Full Context

show li x-interfaces statistics x3

### Description

This command displays X3 statistics.

### Parameters

#### *lic-name*

Specifies the LIC name, up to 32 characters.

### Platforms

7450 ESS, 7750 SR, 7750 SR-a, 7750 SR-e, 7750 SR-s, 7950 XRS

## 27.5 xiom

### xiom

### Syntax

**xiom** [*xiom*] [ **detail**]

### Context

[\[Tree\]](#) (show xiom)

### Full Context

show xiom

### Description

This command lists the XIOM modules in the chassis along with their administrative and operational states.

### Parameters

#### *xiom*

Specifies the slot and XIOM module identifier.

#### Values

slot[/xiom]

slot: 1 to 7

xiom: "x1" or "x2"

#### **detail**

Displays detailed information.

### Platforms

7750 SR-1s, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s

## Output

The following output shows XIOM information and [Table 642: Output Fields: show xiom](#) describes the output fields.

### Output Example: show xiom

```
A:Dut-0# show xiom
=====
Xiom Information
=====
Slot  Xiom    Provisioned Type           Admin   Operational
      Xiom    Equipped Type (if different) State   State
-----
1     x2      iom-s-3.0t:he3000g+      up      up
2     x1      iom-s-3.0t:he3000g+      up      up
=====
```

Table 642: Output Fields: show xiom

Label	Description
Slot	The chassis slot number.
Xiom	The XIOM module number.
Provisioned Type	The XIOM type provisioned.
Equipped Type	The XIOM type actually installed.
Admin State	up - Administratively up. down - Administratively down (for example, shutdown).
Operational State	up - Operationally up. down - Operationally down.

## xiom

### Syntax

**xiom** *xiom*

### Context

[\[Tree\]](#) (clear xiom)

### Full Context

clear xiom

### Description

This command re-initializes the specified XIOM in a particular slot.

## Parameters

### *xiom*

Clears the specified XIOM.

#### Values

slot/xiom

slot: 1 to 6

xiom: x1 or x2

## Platforms

7750 SR-1s, 7750 SR-2s, 7750 SR-2se, 7750 SR-7s, 7750 SR-14s



# Customer document and product support



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